# TRANSPORT OF CLINICAL SPECIMENS

## PATH-SOP-33

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1.0 INTRODUCTION

A significant proportion of the clinical specimens received by the pathology laboratory are sent from locations remote from the hospital site. This document aims to give guidance on the packaging and transport of these specimens so that their movement is achieved safely, in compliance with relevant regulation and such that there is no deterioration in the quality of the sample.

Most specimens sent from offsite locations come from General Practitioners (GPs) surgeries, with a smaller proportion coming from Cottage Hospitals and Clinics. The mode of delivery to laboratories are outlined below:

- All Specimens from GP surgeries in West Cumbria are collected by the portering staff van.
- Urgent blood sciences samples collected from West Cumbria GP’s are processed at West Cumberland Hospital.
- All other Specimens from GP surgeries for testing at the Cumberland Infirmary are collected each weekday by the North West Ambulance Trust with whom an SLA has been established.
- Specimens transported between the Cumberland Infirmary, Carlisle and West Cumberland Hospital, Whitehaven sites are serviced either by interhospital transport contracted by the Trust or via pathology transport managed by the Cell Science Operational Manager.
- The pathology transport also carries patients between the mortuaries for post mortem examination at the Cumberland Infirmary (for further information see Transporting Bodies From WCH to CIC for Post Mortem CS-MOR-SOP-1).

Specimens referred to other laboratories are transported in UN3373 compliant packaging either via Hays DX, by courier or by post.

The transport of specimens from these locations is therefore most likely to be achieved by road and as such is subject to the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009.

It should be noted however that specimens sent by Royal Mail may potentially be transported by air and so the transport of specimens by Royal Mail is subject to the Technical Instructions for the Safe Transport of Dangerous Good by Air Transport issued by the International Civil Aviation Authority.

To comply with the above regulations clinical specimens must be packaged appropriately. The United Nations classifies pathogens (and clinical specimens which may contain them) for transfer purposes into two categories A and B, depending on the severity of the diseases they cause and the likelihood of the material causing infection. It is very unlikely that the clinical
specimens from the locations described here will contain pathogens belonging
to category A, as the pathogens belonging to this category cause severe
diseases and the patient is likely to be hospitalised.
Clinical specimens from these locations are therefore regarded as Category B
infectious substances and are assigned to UN 3373 (Diagnostic or Clinical
Substances). To comply with the relevant transport regulations these
specimens must be packed in accordance with United Nations packaging
instruction P650.

The procedures documented here describe how to package specimens for
transport in accordance with packaging instruction P650.

2.0 PURPOSE OF THE DOCUMENT

This document describes the requirements and procedures for the transport of
clinical specimens from locations outside of the Cumberland Infirmary and
West Cumberland Hospital to the relevant Pathology Department.

The document does not include the transport of clinical specimens sent from
this pathology department to other laboratories or reference centres. The
procedures for transporting these items are dealt with in separate standard
operating procedures.

3.0 DEFINITIONS

Clinical Sample/Specimen
A patient specimen of human material including, but not limited to, excreta,
secreta, blood and its components, tissue and tissue fluid swabs, and body
parts being submitted for purposes such as research, diagnosis,
investigational activities, disease treatment or prevention.

Biohazard
A sample from a patient infected with a Hazard Group 3 or 4 biological agent
(known or suspected)

UN3373 packaging
Approved sample packaging (triple-pack) that meets the standard required for
safe transport by road & rail.

4.0 SCOPE

This policy relates to all members of staff, including contracted courier staff,
involved in the transit of a clinical sample from the patient to the laboratory or
between laboratories. The policy does not apply to Royal Mail staff or external
transport providers, such as taxi drivers and non-contracted courier staff.
The aim of the policy is to provide clear guidance to staff involved in the transfer of clinical specimens to the laboratory to ensure this is accomplished in a safe, secure and timely fashion. This should ensure the safety of all staff handling specimens and maximise the benefit to patients from prompt analyses.

5.0 ROLES & RESPONSIBILITIES

5.1 Pathology Service Manager
The Pathology Service Manager is accountable to the Business Unit for ensuring Trust-wide compliance with policy.

5.2 Service/Operational Managers
- To ensure staff are aware of this policy.
- To ensure implementation of this policy

5.3 Team/Support Managers Responsibility
- Team/Support Managers must ensure that all staff have read and understand this policy.
- Team/Support Managers have a responsibility to monitor the compliance of their staff in adherence to this policy.

5.4 Staff Responsibility
- It is the individual responsibility of all staff to read, understand and comply with this policy.

6.0 TRANSPORT PROCEDURES

6.1 Transport of clinical specimens to the laboratory from gp surgeries and inter-hospital transport

These instructions apply to specimens from:
- GP surgeries for testing at the Cumberland Infirmary that are collected each weekday by the North West Ambulance Trust with whom an SLA has been established (PATH-F-61).
- GP surgeries specimens that are collected by the Estates and Facilities portering and Transport with whom an SLA has been established (PATH-F-79) are tested at both West Cumberland and Cumberland Infirmary.
- Specimens transported between the Cumberland Infirmary, Carlisle and West Cumberland Hospital, Whitehaven sites that are serviced either by inter-hospital transport contracted by the Trust, via a pathology transport managed by the Cell Science Operational Manager or by Blood Bikes with whom an SLA has been established (PATH-F-65).

As specimens are transported by road, their movement is subject to the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment
Regulations 2009. For the purposes of this regulation clinical specimens are classified as Category B infectious substances and assigned the designation UN 3373. To comply with this regulation and to ensure safe transport, specimens must be packaged in accordance with United Nations packaging instruction P650.

Following the instructions provided will ensure that specimens are packaged in accordance with this regulation. It is important that all layers of packaging are used.

6.2 Preparing specimens for transport

The responsibility for requesting a laboratory service or test lies with an authorised and trained practitioner (normally a clinician). It is the responsibility of the requester to ensure that specimens are correctly labelled and request forms are completed to agreed standards in line with the NHS Operating Framework. Further details on the required standard of sample labelling can be found in the Pathology Users Handbook http://www.ncuh.nhs.uk/for-gps/pathology/index.aspx

Samples should be transported to the laboratory at the earliest opportunity to ensure that there is no deterioration in sample quality. If a delay in transport is anticipated please contact the relevant department of the pathology laboratory to ask advice on appropriate storage conditions.

6.3 Packaging specimens for transport

6.3.1 Electronic Order Communications (Order Comms)

For Electronic Order Communications (Order Comms), select the appropriate order comms sample bag. Place the sample in the sample bag and remove the protective strip to seal the bag as directed on the attached instructions. Remove the second protective strip and attach the sample bag to the printed request form at the point indicated on the form.
6.3.2 Non-Electronic Order Communications
The laboratory encourages the use of ICE for requesting specimens, however, in circumstances when ICE order comms is unavailable or specimens are from exempt areas the following must be followed:

a) Place the sample(s) in the specimen bag attached to the request form. Remove the protective strips and seal the bag as directed on the request form.

b) Each request form has two bags attached, both of which may be used.

c) Where there is no specimen bag attached to the form, place the sample in one of the minigrip bags provided and seal.
d) Place the accompanying request form in the outside pocket of the minigrip bag, NOT inside the bag with the sample

6.3.3 Bulk Transport Bags

a) Individually packaged specimens should then be placed in a bulk transport bag. GP practices have been supplied with red and clear outer protective plastic bags for Pathology specimens. Specimens for Blood Sciences (Biochemistry, Haematology and Blood Transfusion) should be placed in a red bag and all other pathology specimens in a clear bag. This pre-sorting will improve the efficiency of handling specimens once they reach the laboratory.

b) Inter-hospital laboratory specimens for blood sciences can be packaged in clear outer protective plastic bags.
a) This bag contains a pad of absorbent material and this must NOT be removed. Specimens should be packed as follows:

![Image of transport bag]

b) Remove the tape strip from the bulk transport bag and seal the bag firmly.

![Image of sealing the bag]

c) Place the bulk transport bag into the green pathology transport bag (Versapak). Completely zip the bag closed and apply the Versapak security seal. The bag is now ready for transport.

![Image of green transport bag]
d) NB. Small volume senders of clinical specimens are provided with small Versapaks. Sharing of Versapaks is not permitted. Versapaks must remain sealed until they reach the receiving laboratory.
If packaged correctly, leakage from bulk transport bags is very unlikely.

N.B. Please note that couriers are not permitted to handle individual specimens or bulk bags directly and should not be asked to assist with packaging.

6.3.4 Urgent sample transport

URGENT requests **must** be accompanied by a telephoned request from the clinician indicating the degree of urgency and the form marked as Urgent.

For urgent transport of single specimens cardboard transport boxes are utilised.
Specimens must be primary packaged as outlined in either 6.3.1 or 6.3.2 above before being placed into pre-prepared Sarstedt UN3373 compliant cardboard postal boxes (Sarstedt Cat No 95.902) and sealed with sellotape.

A printed address label is applied to the front of the box. A ‘DIAGNOSTIC SAMPLE/FRAGILE HANDLE WITH CARE’ sticker is applied near to the area labelled ‘open here’ on the box. Blood Sciences address is stamped on the back of the box. The box is now ready for transport by Hospital Transport, Blood Bikes or Royal Mail. If being posted via Royal Mail 1st Class post MUST be used.

**Blood Sciences**

All routine samples from Primary Care are now processed at the Cumberland Infirmary in Carlisle. In order to ensure delays are minimised for the small amount of urgent Blood Sciences (Biochemistry, Haematology and Blood Transfusion) work the following procedure should be followed:

- Seal samples and request form in a plastic bag and place in a cardboard transport box.
- Arrange transport by taxi/courier to Pathology reception at your nearest laboratory (West Cumberland Hospital or Cumberland Infirmary).
- Label box ‘Urgent Blood Sample’ or something similar.
- **DO NOT PLACE THE BOX IN THE BAG WITH ROUTINE SAMPLES.**
• Telephone the laboratory to inform them an urgent sample is on its way and to arrange for the results to be telephoned.

6.3.5 In the event of an accident or spillage
The courier/driver should telephone the contact number on the outside of the specimen transport box or container and inform the laboratory concerned, (or on-call Biomedical Scientist if out-of-hours) who will co-ordinate the laboratory's response.

Under no circumstances should the courier/driver attempt to ‘clean up’ the spill. The versapak transit bag will contain the problem until the bag can be handed over to laboratory staff.

The laboratory should notify the originating wards of any specimens damaged or destroyed in transit. All accidents, spillages etc recorded on Ulysses.

6.3.6 Packaging Materials
Request forms, sample containers, sample bags and bulk transport bags are available from Hospital Supplies at the Cumberland Infirmary. Telephone (01228) 814568 or send your request in writing. Please allow 3 working days for delivery.

It is essential that only approved packaging materials are used. Sending specimens in envelopes and supermarket carrier bags is not acceptable.

Pathology transport bags will be delivered by the courier.

6.4 Transport of clinical specimens by royal mail or other courier service
The preferred method of transport of clinical specimens to the Pathology Laboratory has been outlined above. However, there are occasions when it may be necessary to send clinical specimens by Royal Mail or an alternative courier.

The transport of clinical specimens by a road courier is subject to the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009.

It should be noted however that specimens sent by Royal Mail may potentially be transported by air and so the transport of specimens by Royal Mail is subject to the Technical Instructions for the Safe Transport of Dangerous Goods by Air Transport issued by the International Civil Aviation Authority.

To comply with the above regulations clinical specimens must be packaged appropriately. The United Nations classifies pathogens (and clinical specimens which may contain them) for transfer purposes into two categories A and B, depending on the severity of the diseases they cause and the likelihood of the material causing infection. It is very unlikely that routine clinical specimens will contain pathogens belonging to category A, as the
pathogens belonging to this category cause severe diseases and the patient is likely to be hospitalised.

Clinical specimens from these locations are therefore regarded as Category B infectious substances and are assigned to UN 3373 (Diagnostic or Clinical Substances). To comply with the relevant transport regulations these specimens must be packed in accordance United Nations packaging instruction P650.

The laboratory does not supply packaging materials for sending specimens by Royal Mail or other couriers. Suitable packaging materials are available from a number of commercial suppliers including Royal Mail’s Safebox™ system. When purchasing supplies of packaging materials it should be ensured that they are appropriate for clinical specimens assigned to UN 3373 and are compliant with packing instruction P650.

When selecting a courier, the following advice from the Department for Transport in their guidance document Transport of Infectious Substances, should be taken into consideration.

“It is recommended that substances should not be carried on any form of passenger transport other than an individual sample carried by a patient”

Further guidance can be found in Transport of Infectious Substances, Best Practice Guidance for Microbiology Laboratories, published by the Department of Health.

See References – PATH-F-26 and PATH-F-27

6.4.1 Transportation of Specimens via TNT or HayDX Courier
TNT or HayDX will transport routine specimens, and frozen upon request between NCUHT sites and referral laboratories. The process is outlined in:
- Transportation of Specimens via TNT Courier (BS-CR-SOP-6).
- Postage & Dispatch of Clinical Specimens (IS-COM-SOP-28)

6.5.2 Transportation of specimens by blood bikes
Blood Bikes Cumbria is a “Not for Profit” charity staffed by volunteers dedicated to provision of an out of hours courier service. They will transport specimens, reagents, medication and diagnostic material upon request between NCUHT sites and referral laboratories. They will also transport blood and blood products between CIC and WCH and NHSBT if required.

All specimens currently processed by each Pathology Department can be transported by Blood Bikes.

Specimens will be carried in the current sealable green Versapak transport bags which will attach to the bikes’ carriage rack, or if only small quantities they can be carried within lockable panniers. They must be sealed in their
appropriate specimen bags and send away boxes as currently required for pathology requests. All containers must be marked with UN 3373 symbols.

Please refer to Transportation of specimens by blood bike (BS-COM-SOP-12) for further information.

6.6 Clinical specimens delivered by hand

The delivery of clinical specimens to the laboratory by the patient, or relative should be discouraged. It is highly probable that they will not have knowledge of the regulations, or what to do in the event of a spillage or breakage of the sample. A laboratory receiving a sample by hand should contact the requesting source requesting a more formal route be used for the delivery of future specimens.

6.7 Specimen transport by taxi

Taxis should only be used for transporting urgent specimens if there is no alternative transport method.

Clinical specimens transported by taxi should be packaged in appropriate UN3373 transport containers, as outlined above, with destination, sender’s details and contact numbers on the outside. It should be a condition of the contract that passengers are not carried at the same time.

6.8 Specimen transport by pneumatic air tube

Correctly packaged specimens should not leak or break within the Pneumatic Air Tube system. However, never send the following items/specimens via the air tube:

- Needles - Hazardous to Laboratory staff
- Blood Gas specimens should have any bubbles displaced, the needle removed and the syringe securely capped
- Incorrectly packaged specimens - Hazardous to all staff using the system.
- Specimens not in a carrier - These will break.
- CSF specimens for Xanthochromia - Result affected (Biochemistry)
- Formalin preserved samples

Please ensure that pods labelled for ‘Pharmacy’ should not be used to transport pathology specimens.

In the event of a spillage or breakage in the Pneumatic Air Tube System please contact: Interserve Helpdesk urgently on 3434 For CIC site and Estates Dept Helpdesk on 23799 for WCH site.

The following polices outline the procedure for using the pneumatic air tube system:

- Pneumatic Air Tube System (CIC) (PATH-SOP-39)
- Pneumatic Air Tube System (WCH) (BS-COM-SOP-33)
6.9 Specimen transport by porters/ward round collection

Clinical material is potentially hazardous. These rules minimise the risk to portering/ward round staff, other staff, patients and visitors to the Trust.

- Always carry specimens in a safe manner and deliver them as soon as possible to the relevant laboratory or reception.
- Handle specimen containers as little as possible. Wash your hands afterwards if you do handle them.
- If a specimen is broken or leaking in the carrier, do not remove it. Take it to the laboratory who will deal with it appropriately.
- If a specimen is dropped and broken in the hospital, do not touch it or allow anyone else to touch it. In a clinical area, contact one of the nursing staff to deal with the specimen. In a non-clinical area or corridor, contact staff in the nearest clinical area or a Domestic Supervisor.
- If the specimen contained Formaldehyde contact the Histopathology Laboratory (ext. 4520) to ensure retrieval of the specimen and removal of the Formaldehyde hazard. The Duty Supervising Porter must be informed of any and all spillages/breakages, and they should then inform the originating department.
- After any spillage, wash your hands. Contaminated clothing should be removed and cleaned in accordance with the Trust Laundry Policy as soon as possible. Contact the Infection Control Team if you are unsure of what to do.
- All accidents, spillages etc must be reported to your Line Manager and recorded on Ulysses.
- Wash your hands frequently while on duty, especially before refreshment breaks and when finishing work.

See References – PATH-F-26 and PATH-F-27

6.10 Transport of blood and blood products

Blood and Blood Products (Fresh Frozen Plasma, Platelets and Cryoprecipitate) are obtained from the NHS Blood and Transplant service (NHSBT) via the Regional Blood Centre in Newcastle-upon-Tyne.

Transport of blood and blood products occurs within each Trust site, between CIC and WCH, to Community Hospitals where our patients receive transfusion. It is important that the correct procedures are followed in each situation and this outlined in Transport of Blood and Blood Products (BS-TRA-SOP-21).

6.11 Histopathology and non-gynaecological cytology specimen
There is no Histology and Cytology department at West Cumberland Hospital, Whitehaven (WCH), therefore any histology and cytology specimens have to be transported to Cumberland Infirmary, Carlisle (CIC) for processing and reporting. This procedure CS-HIS-SOP-142 describes the process of receiving histopathology and non-gynaecological specimens at WCH, and the subsequent packaging and preparation for transportation to the histopathology laboratory at CIC, in addition to the return of specimens to WCH where there are discrepancies with the sample or request form.

7.0 TRANSPORT OF HIGH RISK SPECIMENS

It is a requirement by the Health and Safety Executive that anyone sending specimens to a laboratory must provide relevant clinical details including recent foreign travel and any known or suspected infection with, or exposure to, high risk microorganisms.

Specimens from patients with certain infections are a particular risk to laboratory staff who process them. Laboratories have special procedures in place to handle these specimens safely. The laboratory must be made aware when a specimen is high risk by labelling both the request form, where submitted, and sample container with a biohazard label. For electronic requesting, the biohazard label must be placed on the sample and the specimen placed in a separate specimen bag (not alongside other specimens).

A Biohazard Label

![Biohazard Label](image)

High risk patients include those with conditions or infections detailed in Appendix 2 below.

It is not necessary for safety reasons to identify the patient’s condition on the request form, although it will aid diagnosis, except in the case of known or suspected Transmissible Spongiform Encephalopathy (TSE, e.g. CJD/vCJD). However it is a legal requirement that sufficient clinical information be provided to allow the laboratory to identify the risk and institute special handling and disposal procedures in the Laboratory.

Note that infectious specimens are safe to be transported as outlined above when correctly packed in the UN approved triple packaging, as for other diagnostic specimens, but in this instance the outer pack must display a UN2814 ‘Infectious Substance’ biohazard label. (biohazard bag).
The person requesting the test is responsible for following this policy. Failure to identify specimens from high risk patients in this way will be reported to the Head of the originating Department and Infection Control. Repeated failures will result in a formal complaint.

8.0 DISSEMINATION OF INFORMATION

The information provided in this policy will be distributed to stakeholders in writing and through the North Cumbria University Hospitals NHS Trust website. Instructions for packaging specimens are also printed on our bulk sample bags and this is documented in Appendix 1.

9.0 REFERENCES

1. Transport of Infectious Substances, Department for Transport, Revision 7, 2012

2. ISO 15189:2012

3. PATH-F-26

4. PATH-F-27

5. Pathology Users Handbook
APPENDIX 1: BULK TRANSPORT BAG LABELLING REQUIREMENTS

REMOVE TAPE STRIP AND SEAL BAG FIRMLY

NORTH CUMBRIA UNIVERSITY HOSPITALS NHS TRUST

PATHOLOGY SPECIMENS

DANGER OF INFECTION

THIS BAG IS A SECONDARY PROTECTIVE CONTAINER

Please deliver to
Pathology Department
Cumberland Infirmary
Newtown Road
Carlisle
CA2 7HY

Tel. 01228 814550 (8.30am to 6.00pm). If urgent advice is required outside of these hours please telephone 01228 814513.

Packaging instructions
1. Ensure specimen and request form conform to specimen labelling policy.
2. Ensure specimen caps are secure to avoid leakage.
3. Place specimens from each patient into a separate minigrip or combined bag and seal.
4. If a minigrip bag is used, insert associated request form into the integral side pocket.
5. Place all samples into this bag and seal.
6. Place this bag into a pathology transport bag.

DO NOT REMOVE ABSORBENT PAD
DO NOT PUT LOOSE SPECIMENS INTO THIS OUTER PROTECTIVE BAG

“BIOLOGICAL SUBSTANCE, CATEGORY B”

ADVICE ON HANDLING THIS BAG CAN BE OBTAINED FROM THE LABORATORY

WARNING
TO AVOID THE RISK OF SUFXICATION, PLEASE KEEP THIS BAG AWAY FROM BABIES AND CHILDREN
APPENDIX 2 – HIGH RISK INFECTIOUS AGENTS

Bacillus anthracis
Brucella abortus
Brucella melitensis
Brucella suis
Burkholderia mallei
Burkholderia pseudomallei
Francisella tularensis
Mycobacterium africanum
Mycobacterium avium/intracellulare
Mycobacterium kansasii
Mycobacterium leprae
Mycobacterium malmoense
Mycobacterium microti
Mycobacterium scrofulaceum
Mycobacterium simiae
Mycobacterium szulgai
Mycobacterium tuberculosis
Mycobacterium ulcerans
Mycobacterium xenopi
Rickettsia spp
Salmonella paratyphi A,B,C
Salmonella typhi
Shigella dysenteriae type 1
All Viral Haemorrhagic Fever agents
All Viral encephalitis agents
Hepatitis B
Hepatitis C
Hepatitis D
Hepatitis E
Herpesvirus simiae
Monkeypox
HIV
HTLV types 1 and 2
Simian Immunodeficiency virus
Rabiesvirus
Chikungunya
Alphaviruses
Creutzfeld-Jacob agent
Echinococcus granulosus
Echinococcus vogeli
Leishmania brasiliensis
Leishmania donovani
Naegleria fowleri
Plasmodium falciparum
Taenia solium
Trypanosoma brucei rhodesiense
Trypanosoma cruzi
Blastomyces dermatitidis
Coccidioides immitis
Histoplasma capsulatum
Paracoccidioides brasiliensis
Penicillium marneffei

N.B. This is not an exhaustive list; the Laboratory or Infection Control Team may request this for patients with other infectious conditions.