SAMPLE TRANSPORTATION

MPOX (Monkeypox) UPDATE:

It is critical that the local hospital laboratory staff are clearly made aware of any samples arriving from a patient with suspected MPX.

Double bag the sample at the point of collection in the clinic setting.

The referring clinician should inform the local microbiologist and NVRL of probable samples for MPX investigation.

The double bagged sample should be taken to the microbiology laboratory in person and NOT via the pod system. The bag should be clearly labelled as samples collected from a suspected MPX case.

CONTENTS

Change Description:

1) Information regarding Monkeypox added to title page and appendix 6.
2) Removed requirement for hand delivery of SARS-CoV-2 samples from title page and appendix 6.
3) References updated
4) 5.1: Histopathoogy section added: Specimen delivery from off-site hospital locations & Specimen delivery from outside the hospital
5) Histopathology/Mortuary added to Section 6.1
6) Removed hand delivery requirement for SARS-CoV-2 samples

Effective Date: : 14TH March 2023

Due for Review: : 14TH March 2025

1 INTRODUCTION

1.1 Scope and purpose

This document describes the policy on Transport of specimens to the Laboratory (from the community and within the hospital). This procedure is to be followed when transporting specimens to, from, and within Letterkenny University Hospital. The procedure is available to those who are responsible for specimen transportation to and within Letterkenny University Hospital.

The purpose of this procedure is to set out the safe working practices for all staff engaged in the transport of clinical samples. It is to be regarded as a reference guide to good practice. The safe transport of clinical samples while still retaining patient confidentiality and sample integrity is of paramount importance.

1.2 Responsibility

Laboratory Management: It is the responsibility of laboratory management in conjunction with hospital management to ensure that this procedure is adequate and adhered to at all times.

Sender: Responsibility for the safe collection and packaging of clinical samples shall rest entirely upon the sender, it is therefore imperative that all areas where clinical materials are generated remain conversant with current regulations.

Staff: To report any incident involving the receipt or delivery of samples which he /she becomes aware, involving the exposure to, or release of a biological agent likely to involve a risk to the health and safety of members of staff

1.3 References

LR-GEN-0134: International Air Transport Association (IATA) Dangerous Goods Regulations (Current edition)

LR-GEN-0135: European Agreement for the Carriage of Dangerous Goods by Road (ADR) Packaging Instruction 650 of ADR 2015

Carriage of Dangerous Goods by Road (Amendment) Regulations (SI No 277 of 2019)

Carriage of Dangerous Goods by Road Regulations: 1998: 2004. (S.I. No 29 of 2004): 2010 (S.I. No 616 of 2010): (S.I. No 343 of 2015): 2017 (S.I. No 282 of 2017)

LUH Health & Safety Policies

The Safety, Health and Welfare at Work (Biological Agents) Regulations, 2013 and 202 (S.I. No. 572 of 2013)

Monkeypox: Laboratory transportation plan for hospital-based settings. V4 02/09/2022 HPSC website.

1.4 Definitions

ADR:
ADR Regulations: Agrement Dangereux Routier (ADR) is the acronym given to the European Agreement concerning the International Carriage of Dangerous Goods by Road. In Ireland the ADR Regulations are enforced by the European Community (Carriage of Dangerous Goods by Road and Use of Transportable Pressure Equipment) Regulations 2011 to 2018.

Patient specimens:
Any human material, including, but are not limited to, excreta, secreta, blood and its components, tissue and tissue fluid swabs, and body parts being carried for purposes such as research, diagnosis, investigational purposes, disease treatment and prevention.
Cultures*:* The result of a process by which pathogens are intentionally propagated.

IATA:
International Air Transport Association

Infectious Substance: Substances that are known or are reasonably expected to contain pathogens, such as bacteria, viruses, rickettsiae, parasites, fungi or prions. These substances include biological products e.g. vaccines, cultures, patient samples, genetically modified organisms and medical and clinical waste.

***Classification of infectious substances*:**
For the purpose of packaging and transportation, infectious substances are divided into the following categories:

Category A Infectious Substance: An infectious substance which is transported in a form that, when exposure to it occurs, is capable of causing permanent disability, life threatening or fatal disease to humans or animals. Such infectious substances can be readily transmitted from one individual to another, for which there is no effective treatment and preventative measures are not usually available. Category A infectious substance should be packaged in accordance to packing instruction P620 and labelled using the proper shipping name of **UN 2814 "INFECTIOUS SUBSTANCE AFFECTING HUMANS"** on the outside of the packaging.

Category B Infectious Substance: Category B infectious substance is an infectious substance that does not meet the criteria of category A. These substances are assigned to UN 3373. The proper shipping name of **UN 3373 is "BIOLOGICAL SUBSTANCE, CATEGORY B"** and is packaged in accordance with Packaging Instructions P650.

Exposure:
An exposure occurs when an infectious substance is released outside of the protective packaging, resulting in physical contact with humans or animals.

Primary container:

The container into which the sample is collected, for example, in the case of blood, the primary sample is the vacutainer.

Secondary container:
A plastic leak proof container into which the primary container is placed.
LIS:
Laboratory Information System
UN:
United Nations
PTTS:
Pneumatic Tube Transport System

1.5 Related documents

LP-GEN-0018: 'Guideline for the Use of Sample Transport Boxes for GP Specimens by Taxi/ Courier'
LR-GEN-0012: P650 Packing
LR-GEN-0013: Guidance on regulations for the transport of Infectious Substances.
MP-GEN-0005: Pathology Department Health & Safety Policy
MP-GEN-0029: Disinfection Policy.
LP-HAEM-0043:Haematology User Manual
MP-BT-0013: Blood Transfusion User Manual
MP-HISTO-0005: Histopathology User Manual
LP-CHEM-0023: Biochemistry User Manual
MP-MICRO-0025: Microbiology User Manual
MP-GEN-0060: Sample Transport SOP

2 PROCEDURE

This procedure is in place to ensure specimen integrity and the safety of all those coming in contact with the specimen during transportation. It takes account of ADR Regulations, the Safety, Health & Welfare at Work Act 2005, Safety Health & Welfare at Work Biological Agents Regulations and all other relevant health & safety regulations.
The specimen transportation system ensures the timely arrival of specimens at laboratory reception, in optimal condition, at the correct destination, in a manner that does not pose a threat to the health and safety of anyone coming in contact with the sample and is in compliance with regulations.

2.1 Transport of Specimens

Specimens are transported to the Pathology Department as follows:

To the Laboratory by:
Authorised hospital staff
- General Practitioners

Patients
- Courier

Taxi
Pneumatic Tube Transport System

3 PROCEDURE FOR PACKAGING, LABELLING AND DISPATCH OF LABORATORY SPECIMENS

All laboratory specimens have the potential to contain substances that are infectious. Sometimes this potential is unknown but equally there are times when it may be known. The main principle of safety in this regard is to package and label all specimens in such a manner so that they present no threat to those sending, transporting or receiving them. However, **when it is known that a specimen contains a serious hazard in the form of an infectious agent then it is prudent that a higher than normal standard of packaging, labelling and transport be applied.** For these reasons specimens are categorised as belong to one of two categories, with each category having its own labelling and packaging instructions.
CATEGORY A: An infectious substance which is transported in a form that, when exposure to it occurs, is capable of causing permanent disability, life-threatening or fatal disease in humans or animals. An exposure occurs when an infectious substance is released outside of the protective packaging, resulting in physical contact with humans or animals. A full description of Category A is given in Appendix No. 4. An indicative list of infectious agents in Category A is given in Appendix No. 3. Contact the laboratory or refer to Appendix 2 if transporting specimens thought to contain agents in Category A.

CATEGORY B: An infectious substance that does not meet the criteria for inclusion in Category A. A full description of Category B is given in Appendix No. 5.
The majority of laboratory specimens fit into Category B and must be packaged according to
Ref.: Appendix No. 3: Indicative Examples Of Infectious Substances (Category A)
Ref: Appendix No. 4: Category A
Ref: Appendix No. 5: Category B

A **"BIOHAZARD"** sticker (fig1) should be placed on the sample container and request form of any specimen from a patient who is known to have or is being investigated for any of the following:

- Undiagnosed jaundice
- HIV
- Hepatitis B or C
- Tuberculosis
- Viral Haemorrhagic Fever
- History of I.V. drug abuse
- Severe Acute Respiratory Syndrome (SARS)
- New variant Creutzfeldt-Jacob Disease (nvCJD)
- Mpox

Fig1

4 TRANSPORT AND PACKAGING OF SPECIMENS TO THE LABORATORY FROM WITHIN THE HOSPITAL.

Specimens are transported to the laboratory via the pneumatic transport system (PTTS) or are brought directly to the laboratory by members of the hospital staff.

4.1 General Guidelines

These regulations are in place to ensure the safety of all those coming in contact with pathology specimens during transportation. All patient specimens should be treated as potentially hazardous and handled accordingly. Should there be a suspicion that a specimen contains a Category A infectious substance, please contact the laboratory for information on packing instructions or refer to Appendix No. 2/3.

Primary specimen containers, e.g. blood collection tube or an MSU container, must be placed in an appropriate biohazard plastic bag with the request form (if any) in a separate plastic bag.

Those specimens brought to the laboratory should be packed and transported in a carrier bag in such a way as to avoid damage in transit.

The carrier bag must be capable of retaining any liquid in the event of sample leakage.

If a specimen leaks or is damaged in transit an appropriate laboratory or portering supervisor should be contacted immediately.

Histopathology will **NOT** deal with ANY tissue from known or suspected **TSE** patients. All such cases must be referred/communicated directly to the Neuropathology Laboratory, Beaumont Hospital by the requesting clinician.

All tissue (excluding bone marrow) from a patient with known or suspected nvCJD or any TSE must be packaged according to Packaging instruction P650, Appendix No. 1.
Ref.: Appendix No. 1: Packaging Instruction P650
Ref.: Appendix No. 2: Packaging Instruction P620
Ref.: Appendix No. 3: Indicative Examples Of Infectious Substances (Category A)
Ref.: Appendix No. 8: Specimens Excluded from Transport via the PTTS

4.2 Pneumatic Tube System (PTTS)

Damaged pods are not to be used. All such pods are retained in CR for replacement by APT at biannual service

For PTTS transport the bagged specimen is placed inside the carrier pod, the carrier lid is closed and carrier is sent to the required destination in the laboratory. Specimens excluded from transport via the PTTS are listed in Appendix No.9. A list of all chute destination numbers is available in Appendix 7.

The carrier pods **must** be well packed to avoid any damage to the specimen containers; this can be achieved with the addition of tissue paper or similar to prevent the sample containers from cracking in transit.

System operation of PTTS
(**Please refer to 4.3 for Histopathology)**

Pneumatic Tube System is designed to carry Laboratory Specimens between all Stations. All ward stations are setup with a preprogrammed laboratory address on the display. **Load the pod into the chute. It will send automatically.**

Place the product to be transported into the Carrier, make sure the lid closes properly. RED/GREEN Carriers for the Laboratory – BLUE Carriers for the Pharmacy **DO NOT USE PHARMACY CARRIERS FOR LABORATORY SPECIMENS. RED/GREEN CARRIERS SHOULD NOT BE USED FOR NON-LABORATORY ITEMS.**

At the Laboratory load the laboratory end of the Carrier into the sending funnel first to send the Carrier back to its home address.

The receiver should empty the pod and immediately return to the sender station.

Please redirect misaddressed pods to the correct location.

Do not allow carriers to accumulate in the receipt basket as they could block the system.

4.3 Sending samples to Histopathology from within the Hospital

All samples from within the hospital being sent for histological and/or cytological examination must be delivered directly to the Histopathology Laboratory and **NOT** to Pathology Central

reception. Specimens can be transported to the Histopathology laboratory via any of the following methods:

Hand-delivered by hospital portering staff
Hand-delivered by nursing or medical staff
Pneumatic chute system

Please note that samples for frozen sectioning MUST be hand-delivered to a member of Histopathology laboratory staff immediately after removal.

Instructions for use of the Histopathology pneumatic chute system

Place the sample to be transported into the carrier bottle.
Pack out carrier with tissue paper or similar to avoid damage to specimen containers while in transit
Dial the POD number of the Histopathology laboratory - **3561**.
Place carrier bottle into the sending funnel.

Instructions for pneumatic tube fault reporting

Report errors to **Advanced Pneumatic Technology Ltd – 01-8413005/ speed-dial 173-503.** This is a **24 hour** call centre.

APT will investigate the problem remotely and attempt to fix it. APT will ring back when the problem is solved.

In the unlikely event that the system cannot be fixed remotely, APT will contact the hospital on-call maintenance team for assistance.

In certain instances the laboratory may also need to contact the hospital maintenance team directly seeking their assistance in resolving difficulties which may arise.

Incidents involving the pneumatic chute system (e,g. PTTS not working for a prolonged period, samples sent to lab but not received) should be brought to the attention of the Laboratory Manager/ Quality Manager. A Non-conformance may required to be logged onto Q-Pulse in such instances (LP-GEN-0012 Raising Non Conformances and Quality Improvements).

5 PACKAGING OF SPECIMENS AND INFECTIOUS SUBSTANCES GOING TO THE LABORATORY FROM OUTSIDE THE HOSPITAL

It is the responsibility of all persons sending samples to the laboratory to adhere to this policy and to national regulations and to ensure that specimens sent to the laboratory do not present a risk to anyone coming in contact with it during transportation or on receipt in the laboratory. The Health & Safety Authority (HSA) has produced an information note on provisions governing the carriage by road of infectious substances assigned to UN No. 3373, BIOLOGICAL SUBSTANCE, CATEGORY B, specifically in relation to the packaging of such substances in accordance with ADR packing instruction P650. (Appendix 11).

Instructions to Person Packaging Specimens

All patient specimens should be treated as potentially hazardous and handled accordingly. External transportation containers must comply with ADR Regulations 2015. The vast majority of specimens fall into Category B and require packaging regulation P650, Appendix No. 1. Exemptions to category B are outlined in Appendix No. 5.

The principle of safe transport by this means is the same as for air or international transport – the material should not have any possibility of escaping from the package under normal conditions of transport. The following practices together with the requirements outlined in Appendix 1 should be observed:

1. Taxi Drivers/ Couriers for GP collection's must used the designated sample transport boxes supplied by the Laboratory. All courires/ taxi drivers supplied with a box receive a copy of **LP-GEN-0018,** 'Guideline for the Use of Sample Transport Boxes for GP Specimens by Taxi/ Courier' and must sign a copy of MF-00509 to acknowledge receipt of these guidelines.

2. Specimen containers should be watertight and leak-proof; e.g. blood collection tube, MSU container.
3. If the specimen container is a tube, it must be tightly capped. **NB:** Urine containers must be individually packaged to absorb the entire contents of the primary receptacle.
4. The transport box should be secured in the transport vehicle. It is recommended that Transport boxes are secured in the boot of car, where possible.
5. Each transport box should be labelled appropriately consistent with its contents; the mark illustrated below shall be displayed on the external surface of the outer package.

6. The proper shipping name "BIOLOGICAL SUBSTANCE, CATEGORY B" must be marked on the outer packaging adjacent to the diamond-shaped mark.
7. Specimen request forms and identification data should accompany each transport box;
8. A spill kit containing absorbent material, a chlorine disinfectant, a leak-proof waste disposal container and heavy duty reusable gloves is recommended to be kept in the transport vehicle.
9. Diagnostic specimens must not be given to the patient to post or deliver to the Pathology Department unless the specimens are packaged according to the above guidelines.

Note: The practices 1 – 8 described above are not intended to supersede local or national requirements.

Packaging of Specimens Assigned to Category A
Specimens assigned to category A are packaged and labelled in accordance with packaging instruction P620, Appendix 2/3. Please contact the laboratory if in doubt.

5.1 HISTOPATHOLOGY

Specimen delivery from off-site hospital locations
Histological and/or cytological specimens from off-site hospital locations e.g. OPD (Out-Patients) must be packaged as per this policy and placed in the dedicated, sealed transport barrel for transfer to the laboratory via taxi. The transport barrel is returned to OPD after samples are retrieved.

Specimen delivery from outside the hospital
Histological and/or cytological specimens from community GP surgeries must be packaged and transported in accordance with this policy. All samples from GP Surgeries are delivered to the Laboratory Central Reception area for sorting. Any Histopathology/Cytology samples are subsequently hand-delivered to the Histopathology laboratory by Central Reception staff/collected by Histopathology staff.

5.2

6 TRANSPORT WITHIN IRELAND AND OUTSIDE IRELAND

6.1 Eurofins Lablink

OPEN PATHOLOGY POST ROOM COMPUTER & LOG ONTO "BOOKING COLLECTION" ON THE DESKTOP HOME SCREEN.

RECEIVE A LIST OF BIOCHEMISTRY AS TO WHERE THAT DAYS SAMPLES ARE GOING.(Miscellaneous samples from Histopathology, Mortuary, Microbiology/ Haematology and Blood Transfusion are also packaged as required).

LOG ONTO BIOTRAK (EUROFINS COURIER SERVICE) AND BOOK SAMPLES ONTO THEIR SYSTEM. BIOTRAK.EUROFINS.IE

RECORD DETAILS OF APPROPRIATE HOSPITALS/LABS WHERE SAMPLES ARE TO BE DELIVERED TO.

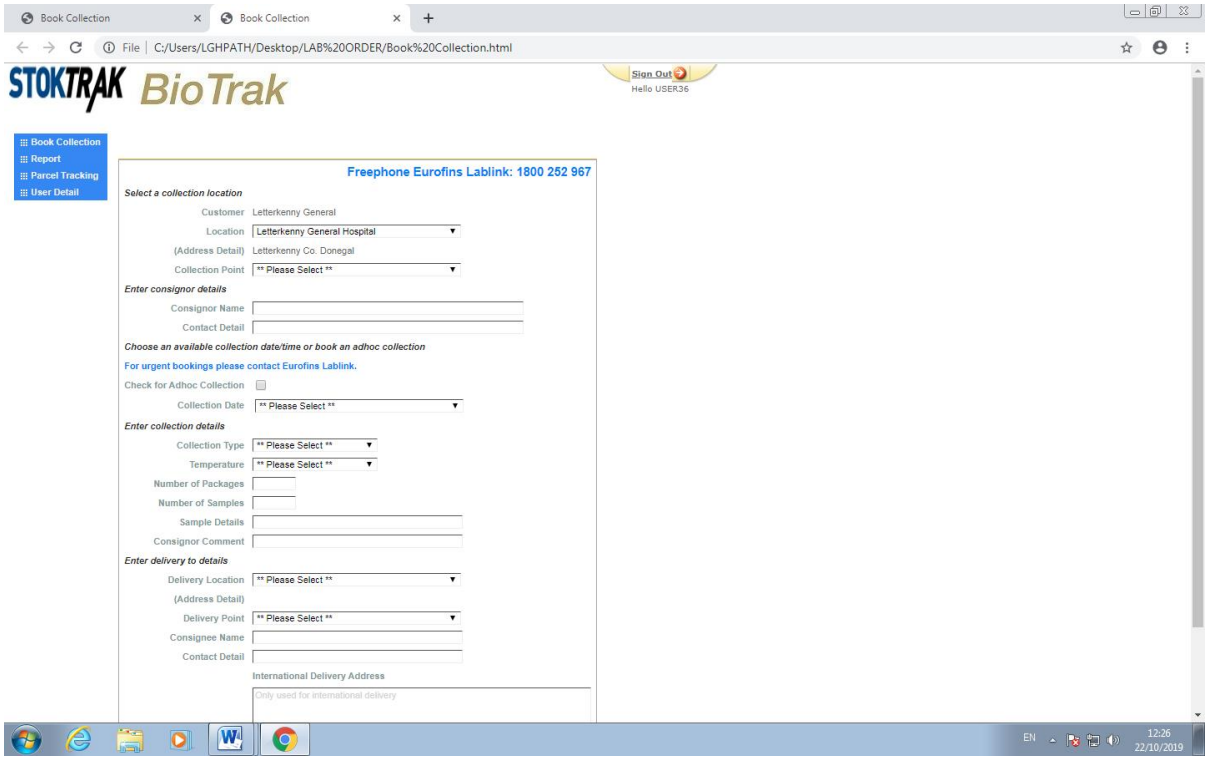
USE PRE-PRINTED ADDRESSOGRAPH LABELS ON THE PROPER SIZED PADDED ENVELOPES FOR SAMPLES AND ATTACH THE EUROFINS TRACKING DETAILS TO THE FRONT OF THE ENVELOPE BY SELLOTAPE AND AN ELASTIC BAND.

AS THE SAMPLES ARE TAKING OUT TO THE POST ROOM FROM THE VARIOUS LABS PUT THEM INTO THE CORRECTLY ADDRESSED PADDED ENVELOPES BEFORE SEALING THEM.

EUROFINS COURIER WILL PICK UP SAMPLES AT 11:30 MONDAY - FRIDAY EXCLUDING BANK HOLIDAYS.

AFTER THE EUROFINS COURIER HAS LEFT DO OUT A DAILY REPORT ON THE BIOTRAK BOOKING SYSTEM AND STAMP TODAYS DATE ONTO PRINTOUT.

PLACE PRINTOUT IN FOLDER ABOVE COMPUTER FOR OUR OWN RECORDS.



6.2 Sending a Sample by Eurofins

1. Double click on the icon on desktop or select biotrak.eurofins.ie Book Collection. The following window will open for completion:
2. Select a collection point – select appropriate laboratory from drop down menu
3. Complete consignor name
4. Contact details (optional)
5. Check Adhoc Collection if package is urgent
6. Collection date : YYYY-MM-DD 11:30, NORTHERN IRL 01 next
7. Select Collection type: standard, infectious, international, international infectious
8. Select temperature that is required for transportation
9. Enter No. of packages
10. Enter No. of samples (optional)
11. Sample details (optional)
12. Consignor Comment (optional)
13. Select Delivery Location : International, freetext international delivery into the address box below provided : Within Ireland select from menu Dublin area 9 initail addresses), rest of Ireland further on.
14. Select Delivey point (Laboratory)
15. Consignee name (optional)
16. Contact detail (optional)
17. Click on Save at bottom left hand side
18. Select Print labels – these are for outside of the packaging

19. Print label/delivery note.

6.3 Tracking a Specimen

1. Book Collection, hover over icon.
2. Select second option overview.
3. From the list which appears find your required package using date and delivery address.
4. Copy the Booking ID on the left hand side next to magnifying glass search option.
5. Go back to Parcel tracking and paste the Booking ID into the space provided and press go.
6. The page will populate with the booking ID information and the latest status for your package is viewable.

7 PROTECTION OF THE SPECIMENS FROM DETERIORATION

All specimens must be transported to the laboratory for examination as quickly as is reasonably practicable. Specimens must be maintained at the correct temperature ($4\ ^0$C to $25\ ^0$ C) and/or under conditions recommended for examination as per the relevant user manual which are available on Q-Pulse and on the HSE website (http://www.hse.ie/luhPathology).
The transport time for specimens to the laboratory from GP surgerys/PCCC should be kept to a minimum to prevent sample deterioration. It is expected that specimens will not remain in transit for a period of greater than 3 hours.

The Laboratory periodically audits sample transport times and or temperature to verify compliance with this policy. Results of these audits are recorded on QPulse.

7.1 Reporting Incidents During Transportation that May Affect the Quality of the Specimen or the Safety of Personnel.

Specimens are labelled in the relevant department and logged into the LIS. This includes the date and time of collection and receipt by the laboratory and this allows flagging of any undue delays which may affect the results. All relevant incidents are raised as non conformances on Q-Pulse and if deemed necessary are also reported to the Hospital Risk Management Department.

7.2 Procedures in the event of a spillage

All leakages or spillages should be dealt with by staff that are trained in the use of Biological Spill Kits.
Any incidents or spills during sample transportation should be reported to the Pathology Department.
Samples that arrive at the Laboratory Reception that are found to be leaking or otherwise contaminated the spillage should be removed in accordance with appropriate departmental spillage instruction. Consideration should be given to opening the package in a Biological Safety Cabinet, dependant on the nature of the samples.

8 APPENDICES

1. Appendix No. 1: Packaging Instruction P650
2. Appendix No. 2: Packaging Instruction P620
3. Appendix No. 3: Indicative Examples of Infectious Substances (Category A)
4. Appendix No. 4: Category A
5. Appendix No. 5: Category B
6. Appendix No. 6: Specimens Excluded from Transport via the PTTS
7. Appendix No 7: Chute destination numbers
8. Appendix No 8: HSA Information Note

8.1 Appendix 1: Packing Instructions P650

This packing instruction applies to UN No. 3373.
(1) The packaging shall be of good quality, strong enough to withstand the shocks and loadings normally encountered during carriage, including transhipment between vehicles or containers and between vehicles or containers and warehouses as well as any removal from a pallet or overpack for subsequent manual or mechanical handling. Packagings shall be constructed and closed to prevent any loss of contents that might be caused under normal conditions of carriage by vibration or by changes in temperature, humidity or pressure.
(2) The packaging shall consist of at least three components:

(a) a primary container;
(b) a secondary packaging; and
(c) an outer packaging of which either the secondary or the outer packaging shall be rigid.

(3) Primary containers shall be packed in secondary packagings in such a way that, under normal conditions of carriage, they cannot break, be punctured or leak their contents into the secondary packaging. Secondary packagings shall be secured in outer packagings with suitable cushioning material. Any leakage of the contents shall not compromise the integrity of the cushioning material or of the outer packaging.

(4) For transport, the mark illustrated below shall be displayed on the external surface of the outer packaging on a background of a contrasting colour and shall be clearly visible and legible. The mark shall be in the form of a square set at an angle of 45° (diamond-shaped) with minimum dimensions of 50 mm by 50 mm; the width of the line shall be at least 2 mm and the letters and numbers shall be at least 6 mm high.

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.
(5) At least one surface of the outer packaging shall have a minimum dimension of 100 mm × 100 mm.
(6) The completed package shall be capable of successfully passing the 1.2m drop test.
(7) For liquid substances:

(a) The primary container(s) shall be leakproof;
(b) The secondary packaging shall be leakproof;

(c) If multiple fragile primary samples are placed in a single secondary packaging, they shall be either individually wrapped or separated to prevent contact between them;
(d) Absorbent material shall be placed between the primary sample(s) and the secondary packaging. The absorbent material shall be in quantity sufficient to absorb the entire contents of the primary sample(s) so that any release of the liquid substance will not compromise the integrity of the cushioning material or of the outer packaging;
(e) The primary container or the secondary packaging shall be capable of withstanding, without leakage, an internal pressure of 95 kPa (0.95 bar).

(8) For solid substances:
(a) The primary container(s) shall be siftproof;
(b) The secondary packaging shall be siftproof;
(c) If multiple fragile primary receptacles are placed in a single secondary packaging, they shall be either individually wrapped or separated to prevent contact between them;
(d) If there is any doubt as to whether or not residual liquid may be present in the primary receptacle during carriage then a packaging suitable for liquids, including absorbent materials, shall be used

(9) Please note that infectious substances relating to N° UN 3373 which have been packaged and marked according to the P650 packaging instruction are not subjected to any other ADR requirements.

(10) If any substance has leaked and has been spilled in a vehicle or container, it may not be reused until after it has been thoroughly cleaned and, if necessary, disinfected or decontaminated. Any other goods and articles carried in the same vehicle or container shall be examined for possible contamination.

8.2 Appendix No. 2: Packing Instructions P620 (For infectious substances in Category A)

Infectious substances in Category A may only be transported in packaging that meets the UN class 6.2 specifications and complies with Packing Instruction P620. Packaging instruction 620 generally requires more robust packaging than required for diagnostic samples.

P620	**PACKING INSTRUCTION**	**P620**
THIS PACKING INSTRUCTION APPLIES TO UN 2814		

• Watertight primary container + watertight secondary packaging + a rigid outer packaging of adequate strength for its capacity, mass and intended use.
• For liquid substances suitable absorbent material must be placed between the primary receptacle(s) and the secondary packaging. If multiple primary containers are placed in a single secondary packaging, they must be either individually wrapped or separated so as to prevent contact between them.
• The smallest external dimension of the outer packaging must not be less than 100 mm.
• The primary container or the secondary packaging shall be capable of withstanding without leakage an internal pressure differential of not less than 95 kPa and temperatures in the range -40 oC to +55 oC.
• An itemised list of contents shall be enclosed between the secondary packaging and the outer packaging. When the infectious substance to be transported is unknown, but suspected of meeting the criteria for inclusion in category A, the words “Category A infectious substance Affecting humans” shall be shown in parentheses.
• Name, address and telephone number of the responsible party (for example as a label on the outside of each package).

Additional Requirements:
• Inner packaging containing infectious substances shall not be consolidated with inner packaging containing unrelated types of goods.
• Primary containers shall be of glass, metal or plastic. Positive means of ensuring a leakproof seal must be provided, eg. Heat seal. If screw caps are used, they shall be secured by positive means eg. Tape.
• Substances consigned refrigerated or frozen: refrigerant shall be placed around the secondary packaging(s) or alternatively in an overpack. The primary container and the secondary packaging shall maintain their integrity at the temperature of the refrigerant used.
• Plastic primary containers and secondary packaging must be capable of withstanding very low temperatures for substances consigned in liquid nitrogen
• Lyophilised substances may also be carried in primary containers that are flamesealed; glass ampoules or rubber-stopped glass vials fitted with metal seals.

Labelling

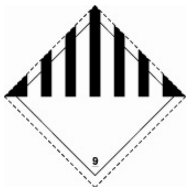
There are two types of labels:

(a) hazard labels in the form of a square set at an angle of 45° (diamondshaped) are required for most dangerous goods in all classes;

(b) handling labels in various shapes are required, either alone or in addition to hazard labels, for some dangerous goods. Specific hazard label(s) shall be affixed to the outside of each package for all dangerous goods to be shipped (unless specifically exempted). The hazard labels shown below are of importance for infectious substances in Category A:

Label name: Infectious substance
Minimum dimensions: 100 × 100 mm
(for small packages: 50 × 50 mm)
No. of labels per package: 1
Colour: Black and white
The words “INFECTIOUS SUBSTANCE” shall be shown. The statement “In case of damage or leakage immediately notify a Public Health Authority” is required in some countries.

Hazard label for Category A infectious substances and for genetically modified microorganisms and organisms that meet the definition of an infectious substance, Category A



Label name: Miscellaneous dangerous substances
Minimum dimensions: 100 × 100 mm
(for small packages: 50 × 50 mm)
No. of labels per package: 1
Colour: Black and white

Hazard label for certain noninfectious genetically modified microorganisms and organisms (UN 3245) and for carbon dioxide, solid (dry ice) (UN 1845);

Documentation

The following shipping documents are required.

To be prepared and signed by the shipper:

• for air: the shipper's Declaration for Dangerous Goods (Appendix 4 shows one example)

• a packing list/proforma invoice that includes the receiver's address, the number of packages, detail of contents, weight, value (Note: for international transport, a minimal value shall be indicated, for customs purposes, if the items are supplied free of charge)

• an import and/or export permit and/or declaration if required.

To be prepared by the shipper or the shipper's agent:

• an air waybill for air transport or equivalent documents for road, rail and sea journeys. (MF-0734 'IATA Itemised checklist')

For UN 2814 and UN 2900, an itemized list of contents shall be enclosed between the secondary packaging and the outer packaging. When the infectious substance to be transported is unknown, but suspected of meeting the criteria for inclusion in category A and assignment to UN 2814 or UN 2900, the words "suspected Category A infectious substance" shall be shown.

8.3 Appendix 3: Indicative Examples Of Infectious Substances (Category A)

The table provided below is an indicative list taken from the 19th edition of the United Nations Model Regulations. In this table, the microorganisms written in italics are bacteria, mycoplasmas, rickettsiae or fungi.

INDICATIVE EXAMPLES OF INFECTIOUS SUBSTANCES INCLUDED IN CATEGORY A IN ANY FORM UNLESS OTHERWISE INDICATED	
UN Number and Proper Shipping Name	**Microorganism**
UN 2814 Infectious substances affecting humans	*Bacillus anthracis* (cultures only)
	Brucella abortus (cultures only)
	Brucella melitensis (cultures only)
	Brucella suis (cultures only)
	Burkholderia mallei – Pseudomonas mallei – glanders (cultures only)
	Burkholderia pseudomallei – Pseudomonas pseudomallei (cultures only)
	Chlamydia psittaci – avian strains (cultures only)
	Clostridium botulinum (cultures only)
	Coccidioides immitis (cultures only)
	Coxiella burnetii (cultures only)
	Crimean-Congo haemorrhagic fever virus
	Dengue virus (cultures only)
	Eastern equine encephalitis virus (cultures only)
	Escherichia coli, verotoxigenic (cultures only)[1]
	Ebola virus
	Flexal virus
	Francisella tularensis (cultures only)
	Guanarito virus
	Hantaan virus
	Hantaviruses causing haemorrhagic fever with renal syndrome
	Hendra virus
	Hepatitis B virus (cultures only)
	Herpes B virus (cultures only)
	Human immunodeficiency virus (cultures only)
	Highly pathogenic avian influenza virus (cultures only)
	Japanese Encephalitis virus (cultures only)
	Junin virus
	Kyasanur Forest disease virus
	Lassa virus
	Machupo virus
	Marburg virus
	Monkeypox virus
	Mycobacterium tuberculosis (cultures only)[1]
	Nipah virus

INDICATIVE EXAMPLES OF INFECTIOUS SUBSTANCES INCLUDED IN CATEGORY A IN ANY FORM UNLESS OTHERWISE INDICATED	
	Omsk haemorrhagic fever virus
	Poliovirus (cultures only)
	Rabies virus (cultures only)
	Rickettsia prowazekii (cultures only)
	Rickettsia rickettsii (cultures only)
	Rift Valley fever virus (cultures only)
	Russian spring-summer encephalitis virus (cultures only)
	Sabia virus
	Shigella dysenteriae type 1 (cultures only)[1]
	Tick-borne encephalitis virus (cultures only)
	Variola virus
	Venezuelan equine encephalitis virus (cultures only)
	West Nile virus (cultures only)
	Yellow fever virus (cultures only)
	Yersinia pestis (cultures only)
UN 2900 Infectious substances affecting animals only	African swine fever virus (cultures only)
	Avian paramyxovirus Type 1 – Velogenic Newcastle disease virus (cultures only)
	Classical swine fever virus (cultures only)
	Foot and mouth disease virus (cultures only)
	Lumpy skin disease virus (cultures only)
	Mycoplasma mycoides – contagious bovine pleuropneumonia (cultures only)
	Peste des petits ruminants virus (cultures only)
	Rinderpest virus (cultures only)
	Sheep-pox virus (cultures only)
	Goatpox virus (cultures only)
	Swine vesicular disease virus (cultures only)
	Vesicular stomatitis virus (cultures only)

[1] For surface transport (ADR), when cultures of Escherichia coli (verotoxigenic), Mycobacterium tuberculosis and Shigella dysenteriae type 1 are intended for diagnostic or clinical purposes, they may be classified as infectious substances of Category B and be sent in accordance with Packaging Instruction P650.

*Monkeypox specimens are transported to the NVRL as a CATEGORY B pathogen as per most recent guidance from the HPSC: Monkeypox: Laboratory transportation plan for hospital-based settings v4 02/09/22.

8.4 Appendix 4: Category A

Under ADR regulations “Infectious substances” are divided into the following categories

1. **CATEGORY A**: An infectious substance which is transported in a form that, when exposure to it occurs, is capable of causing permanent disability, life-threatening or fatal disease in humans or animals.

   An exposure occurs when an infectious substance is released outside of the protective packaging, resulting in physical contact with humans or animals.

   Infectious substances meeting these criteria which cause disease in humans or in both humans and animals shall be assigned to UN 2814.

   Assignment to UN 2814 shall be based on the known medical history and symptoms of the source human or animal, endemic local conditions, or professional judgement concerning individual circumstances of the source human or animal.

   The proper shipping name for UN No. 2814 is "INFECTIOUS SUBSTANCE, AFFECTING HUMANS".

   The indicative list of infectious substance in Category A is given in Appendix 3 is not exhaustive. Infectious substances, including new or emerging pathogens, which do not appear in the table but which meet the same criteria shall be assigned to Category A. In addition, if there is doubt as to whether or not a substance meets the criteria it shall be included in Category A.

   Infectious substances classified as UN2814 must be packaged and marked according to packaging instruction P620, Appendix 2, and transported by approved couriers trained in handling UN2814 material.

   Packages received in the Pathology Department marked with UN2814 should only be opened inside a microbiological safety cabinet.

8.5 Appendix No. 5: Category B

CATEGORY B: An infectious substance that does not meet the criteria for inclusion in Category A.

Infectious substances in Category B shall be assigned to **UN 3373**.

The proper shipping name for UN 3373 is. "BIOLOGICAL SUBSTANCE, CATEGORY B "

Exemptions

a Substances which do not contain infectious substances or substances which are unlikely to cause disease in humans or animals are not subject to the provisions of ADR unless they meet the criteria for inclusion in another class.

b Substances containing microorganisms which are non-pathogenic to humans or animals are not subject to ADR unless they meet the criteria for inclusion in another class.

c Substances in a form that any present pathogens have been neutralized or inactivated such that they no longer pose a health risk are not subject to ADR unless they meet the criteria for inclusion in another class.

d Substances where the concentration of pathogens is at a level naturally encountered (including foodstuff and water samples) and which are not considered to pose a significant risk of infection are not subject to ADR unless they meet the criteria for inclusion in another class.

e Dried blood spots, collected by applying a drop of blood onto absorbent material, or faecal occult blood screening tests and blood or blood components which have been collected for the purposes of transfusion or for the preparation of blood products to be used for transfusion or transplantation and any tissues or organs intended for use in transplantation are not subject to the provisions of ADR.

f Human or animal specimens for which there is minimal likelihood that pathogens are present are not subject to ADR if the specimen is carried in a packaging which will prevent any leakage and which is marked with the words "Exempt human specimen" or "Exempt animal specimen", as appropriate.

The packaging is deemed to comply with the above requirements if it meets the following conditions:

(a) The packaging consists of three components:

(i) a leak-proof primary receptacle(s);

(ii) a leak-proof secondary packaging; and

(iii) an outer packaging of adequate strength for its capacity, mass and intended use, and with at least one surface having minimum dimensions of 100 mm × 100 mm;

(b) For liquids, absorbent material in sufficient quantity to absorb the entire contents is be placed between the primary receptacle(s) and the secondary packaging so that, during carriage, any release or leak of a liquid substance will not reach the outer packaging and will not compromise the integrity of the cushioning material;

(c) When multiple fragile primary receptacles are placed in a single secondary packaging, they are either individually wrapped or separated to prevent contact between them.

NOTE: *An element of professional judgment is required to determine if a substance is exempt under this paragraph. That judgment should be based on the known medical history, symptoms and individual circumstances of the source, human or animal, and endemic local conditions. Examples of specimens which may be carried under this paragraph include the blood or urine tests to monitor cholesterol levels, blood glucose levels, hormone levels, or prostate specific antibodies (PSA); those required to monitor organ function such as heart, liver or kidney function for humans or animals with noninfectious diseases, or for therapeutic drug monitoring; those conducted for insurance or employment purposes and are intended to determine the presence of drugs or alcohol; pregnancy test; biopsies to detect cancer; and antibody detection in humans or animals.*

Appendix 6: Specimens Excluded from Transport via the PTTS

- Please note that samples for frozen sectioning MUST be hand delivered to a member of Histopathology laboratory staff immediately after removal.
- Precious/irreplaceable specimens e.g. CSF, frozen sections.
- Blood and blood components for transfusion.
- Samples from patients known to be infected with biohazardous organisms e.g. HIV, Hepatitis B, Hepatitis C etc.
- Mpox (Monkeypox) swabs

- **Appendix 7**: Aerocom ac 3000 Pneumatic Tube System Chute destination numbers

Letterkenny University Hospital/		
Chute No	**Stations**	**Phone Nos**
3589/3557	Laboratory	3557
3537	Emergency Dept	2275 Tmt/ Rm/ 2397/3595
3454	Resus	2276/3454
4482/4782	AMAU/ RRU	4720/5043
5072	NNU	3575/2417
8974	MRU	
2020	SSW	2020
3775	ICU	3775
2370	Oncology	8821/2370
3538	CCU	3538
3778	Cardiac investigations	
5006	Labour ward	
4437	HONC (L4)	8904/8905
3544	RDU	3544
3543	LMBL 2 (Md 2)	5023/3543
3541	LMBL 3 (Med 3)	3541/5021
3542	LMBL4	3542/5022
8973	Medical 5	
4010	Medical 6	4010
2007	Medical 7	2007
3555	OPD	3555/5010
3539	Day Services	8820
3566	Gynaecology	3566
3561	Histology	3561
3552	Maternity	3575/2416
2416	Postnatal	4438
5006	Labour Ward	4496
5072	Neonatal Unit	
3556	Paediatrics	3576 Pds/op
3553	Orthopaedics	3553
3778	Cardiac Investigations	
3549	Surgical 1	3549
3550	Surgical 2	3550
3550	Transit lounge	3401
2491	Theatre	2491
3434	Psychiatric unit	4700/4704
3550	HDW	3466
2728	Blood Room	3640
3571	XRAY	3571
3565	CSSD	3565
3582	Physiotherapy	3582
N/A	Donegal Hospice	3419
N/A	BDM	3772
2345/2624	Pharmacy	2345/2624
N/A	Morgue	3572

Appendix 8: HSA Information Note

HEALTH AND SAFETY AUTHORITY

Information note on the carriage by road of UN No. 3373, BIOLOGICAL SUBSTANCE, CATEGORY B

Infectious substances in Category B are assigned to UN 3373, proper shipping name "BIOLOGICAL SUBSTANCE, CATEGORY B", and must be packaged for carriage by road in accordance with ADR **Packing Instruction P650**.[1] The system for packaging UN 3373 is a three layer system, of which either the secondary packaging or the outer packaging **must be rigid**:

- Primary receptacle
- Secondary packaging
- Outer packaging

It is the responsibility of the **consignor** of infectious substances assigned to UN3373 to ensure that the packaging complies with all of the requirements of Packing Instruction P650. Consignors of UN 3373 may be nursing homes, doctors, dentists, the HSE (hospitals and primary care clinics), and personnel working in clinics, nursing homes, hospitals and surgeries must receive specific training in the correct classification of the infectious substances to be carried, and the application of P650.

Consignors may enter into a CONTRACT FOR CARRIAGE[2] with a carrier e.g. a courier company, under the terms of which the carrier may assume part of the consignor's role as packer of the dangerous goods. In the absence of a contract for carriage, it **remains the responsibility of the consignor to apply all layers of packaging and mark the package in accordance with P650**.

Mark applied to outer surface:

This must be applied along with the
Proper Shipping Name
BIOLOGICAL SUBSTANCE, CATEGORY B

Packaging **designed** to meet P650 shall be provided with clear instructions on use and closure of such packages. These instructions will be provided by the packaging manufacturer to the consignor

[1] Guidance for the carriage of infectious substances (Class 6.2) is provided and updated biennially by the World Health Organisation (WHO). The WHO publication (available on the HSA website), provides information for classifying, marking, labelling, packaging, documenting and refrigerating infectious substances using all modes of transport, both nationally and internationally. The details of Packing Instruction P650 are provided in **Annex 4** of the publication. HSE guidance was also published in 2005 and is still available on the HSE website.

[2] European Communities (Carriage of Dangerous Goods by Road and use of Transportable Pressure Equipment) Regulations 2011 to 2017, specifically Regulation 4(a)(ii) of S.I. No. 288 of 2015.

(including the person who prepares the package), to enable the package to be correctly prepared for carriage.

Where there are **no instructions** from the manufacturer (for example when the packaging is put together by the consignor in accordance with P650), it is the responsibility of the **consignor** to provide clear instructions to all relevant staff on how to do so. If the packaging is prepared by the consignor, results of a **drop test** must be retained to demonstrate suitability for the carriage of UN 3373 (the details of the drop test are provided in ADR 6.3.5.3, drop height 1.2m). Following the appropriate drop sequence, there must be no leakage from the primary receptacle, which will be protected by absorbent material in the secondary packaging.

Packages of infectious substances assigned to UN3373, when packaged in accordance with P650, are not subject to any other requirements of the ADR.