GIG CYMRU NHS WALES | Iechyd Cyhoeddus Cymru Public Health Wales	**Reference Number:** PHW10/TP15 **Version Number:** 1 **Date of Next review:** 10 September 2022

Handling and Transport of Clinical Specimens Procedure

Introduction and Aim

This procedure outlines the practices that enable the safe collection, transport and delivery of clinical specimens and samples.

The procedure:

- identifies the safe practice requirements in relation to the handling of specimens so reducing the risk of cross infection to service users/patients, couriers, visitors and healthcare workers.
- outlines the necessary regulation and requirements for transport of specimens.
- identifies the responsibilities of individuals in the collection of specimens to ensure correct method, correct specimen and accurate service user/patient detail.
- identifies safe procedures to follow for spillage or exposure injury.
- ensures that specimen preservation and reduce the need for repeat specimens.

Linked Policies, Procedures and Written Control Documents

Health and Safety Policy
Moving and Handling Procedure
Personal Protective Equipment Procedure
Infection Control Policies and Procedures

A number of Health and Safety Executive (HSE) guidance documents and regulations. Details are provided throughout this document.

Scope

This procedure is applicable to all staff responsible for the collection, handling and transportation of specimens in Public Health Services (Screening, Health Protection and Microbiology Divisions).

This specifically includes:

- Breast Test Wales – Breast biopsies for Histology.
- Cervical Screening Wales (CSW) - Cervical specimens.

- Bowel Screening Wales (BSW) - Faecal occult blood Fit sample. [1]
- Microbiology Division - Blood, body fluids and tissues isolates and culture microorganisms.
- Health Protection Division **-** Microbiological samples required for investigating cases and outbreaks.

Equality and Health Impact Assessment	Completed.
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Summary of reviews/amendments

Version number	Date of Review	Date of Approval	Date published	Summary of Amendments
1	1 April 2015	1 October 2009	1 October 2009	Yellow 11 – **Policy for the Handling and Transport of Clinical Specimens** (original document). Velindre NHS Trust Policy transferred to Public Health Wales on 1 October 2009.
2	May 2019	September 2019	26 May 2022	Yellow 11 – **Policy for the Handling and Transport of Clinical Specimens** (Version 1) reviewed. PHW75/TP01 Document re-

[1] Faecal occult bloods are received in liquid Fit sample which are transported as category B UN3373.

				developed as a procedure under the Health and Safety Policy, now PHW10/TP15

1 Introduction

This procedure sets out the arrangements and practices that enable the safe collection, transport and delivery of clinical specimens and samples.

It ensures compliance with regulations and requirements according to the following guidance:

- *The Management of Health and Safety at Work Regulations 1999*;
- *The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment (Amendment) Regulations (2011)*;
- *The Use of Transportable Pressure Equipment Regulations (2011)*;
- *Control of Substances Hazardous to Health (COSHH) 2002 (as amended) (HSE);*
- *The Road Transport Accord Dangereux Routier (ADR) (2017)*;
- *Guidance on the Regulations for the Transport of Infectious Substances 2017-2018 (World Health Organisation)*;
- *"Safe working and the prevention of infection in clinical laboratories and similar facilities" (2003)* (HSE);
- *"Biological agents: Managing the risks in laboratories and healthcare premises" (2005) (HSE).*

The UK Government Department for Transport (DfT) defines infectious substances, (for transport purposes) as:

> "substances which are known or reasonably expected to contain pathogens e.g. micro-organisms, plasmids and other agents such as prions which can cause disease in humans."

There are five steps involved in the safe transport of infectious material. These are:

- Classification
- Packaging
- Labelling/collection
- Storage
- Transportation.

Standard Infection Control Precautions apply and all relevant Public Health Wales policies and procedures should be adhered to, to ensure staff protection and to prevent exposure injury occurring.

Any sample, unless it is known or reasonably believed to contain infectious substances of Category "A", should be regarded as Category "B" as a minimum to prevent inadvertent transport of infectious material from which legal penalties may result (see **Appendix 1**).

2 Roles and responsibilities

The operational authority for specimen management lies with the clinical/ departmental / laboratory managers and individual staff of those services generating or processing specimens.

2.1 Laboratory/Service Managers

All Laboratory/Service Managers will ensure:

- Safe systems are in place to facilitate implementation and compliance monitoring with this procedure for staff, including all agency or external contractors.
- Adequate resources of equipment, materials and process.
- There has been an assessment of risk performed in all services/department areas in relation the collection, handling and transportation of specimens against the regulations and requirements detailed in this procedure.
- All associated incidents or injuries are managed in accordance with reporting and investigation procedures.
- Staff have been adequately trained and assessed as competent to undertake the necessary tasks and role associated with specimen handling and transport.
- There are Standard Operating Procedures (SOPs) in each service which details compliance with this procedure that does not deviate from the regulations and guidance.
- Employees are notified of this procedure and know how to access and understand the contents and any local procedures derived from it.
- Annual audit of compliance with procedure and local SOP's and technical details are undertaken.

2.2 Staff responsibilities

All staff will ensure:

- They understand their responsibility for their own practice.
- Maintain competence skills and knowledge in how to safely collect, handle and transport specimens in accordance with the appropriate regulations and requirements stated in this procedure.

- Report via incident reporting mechanisms, labelling errors, loss, spillage, injury or inappropriate transport of clinical specimens.
- Comply with this procedure and not deviate from the regulations detailed in local SOP's and technical detail documents.
- Be aware of, and have access to, this and related infection prevention and control policy/procedure documents
- Be up to date with their occupational vaccination schedule and know their antibody level for Hepatitis B virus.

If in any doubt they must consult with their line manager, Occupational Health Department or those responsible for Infection Prevention and Control in Public Health Wales.

2.3 Health and Safety, Quality and Infection Prevention and Control Advisors

Those responsible for these areas will ensure:

- Engagement with staff to develop systems and processes that lead to sustainable and reliable improvements in relation to the application of infection prevention and control.
- The provision of expert advice and training on the application of this procedure in relation to health and safety and infection prevention and control.
- The provision of expert advice in the risk assessment of procedures and protocols specimen related tasks.

3. Specimen Transportation Procedure by Service

3.1 Microbiology Division

The transport of clinical specimens isolates and cultures are outlined in the following documents available on the Microbiology Division Quality Management System:

- *MDHSGUID 008 Guidance on the Transport of Clinical Samples and Microbial Cultures.*
- *MDHSGUID 009 Guidance on Transportation and Packaging of Category A Specimens.*
- *MDHSGUID 010 Guidance on Transportation and Packaging of Viral Haemorrhagic Fever Specimens.*

3.2 Screening Division

3.2.1 Breast Test Wales

The collection, handling and transport of clinical breast biopsy specimens are outlined in the following documents available from Breast Test Wales:

Breast Test Wales QM Transportation of Specimens SOP

3.2.2 *Cervical Screening*

The collection, handling and transport of cervical specimens are outlined in the following documents available from the Screening Division Laboratory:

SDL-0053 Laboratory Procedure Specimen Transport

3.2.2 *Bowel Screening*

Faecal occult liquid FIT specimens are transported to the laboratory in clearly identifiable envelopes via Royal mail (not required to be UN3373 compliant). The collection, handling and transportation of these is documented in Screening Division Laboratory procedures.

3.2.2 *Health Protection*

Specimens are transported to local Microbiology laboratories for testing for:

4. Health and Safety

The associated laboratory will have undergone UKAS accreditation and so for specimens transported within the laboratory reference should be made to individual service laboratory risk assessments.

All Public Health Services that manage and transport specimens must ensure that their SOP's and technical details documents are current and in accordance with the necessary requirements so that staff, service users, couriers or the public are not put at risk from biological or chemical exposure. All staff undertaking duties that involve the handling of specimens must be up to date with required vaccination schedules and undergone specific infection prevention and control, health and safety training to undertake their role.

5. Packaging requirements

Whether the samples are transported on land, in-house, short haul community or long haul transport, all three have a commonality of packaging that will consist of 3 layers, that of the primary container that holds the sample, a secondary container that holds the primary container and an outer container that will withstand the rigours of the journey so as to prevent loss of specimen containment and unnecessary exposure of any individual to potentially infectious substances (**Appendix 2**).

- Infectious substances in Category A may only be transported in packaging that meets the United Nations Class 6.2 specifications and complies with Packing Instruction PI620. Only microbiology laboratories will transport this category of specimen.
- PI650 incorporates all that is needed to make a shipment for Category B infectious substances.

6. Key Points for Specimen Collection

Safe and appropriate management of specimens collected as part of PHW services reflects the Quality of care provided. Service users/patients are therefore reliant on this procedure being adhered to ensure that any specimen they provide is processed and reported on in a timely manner. To protect service users/patients and staff it is an expectation that:

- Service users/patients will have consented to the specimen collection.
- Collection techniques are safe and staff are adequately trained
- Specimens are correctly stored according to their type and carriage arrangements.
- Specimens are packed in accordance with the regulations
- Specimens are transported safely in accordance with the regulations
- All specimens and forms will be filled in correctly, to ensure that all the necessary clinical information is supplied to the laboratory processing the specimen.
- Hand Hygiene and associated SICP are applied in the collection, handling and transportation of specimen.

7. Spillages

All spills of blood and other body fluids from any source must be disinfected and removed as soon as possible, whether or not they have a known or suspected blood-borne virus in accordance with this procedure. Staff need to be trained in this procedure to ensure exposure injury is prevented. Couriers will have documented evidence that all their staff are trained in accordance with regulations stated.

In the event of a specimen spillage, please adhere to any current local standing operating procedures in place. Further guidance can also be found in the National Infection Prevention & Control Manual (NIPCM).

8. Training requirements

The dangerous goods regulations require all personnel involved in transport to undergo appropriate training.

For the transport of Category "B" infectious substances there is a requirement that clear instructions on the use of the packaging are supplied to the user; this is regarded as sufficient "training" for the shipping of these substances. However, if such specimens are consigned with other dangerous goods (e.g. flammable liquids, radioactive materials, liquefied gases, etc.), then personnel must be trained in the correct procedures for their transport and to prevent spillage and/or risk of infection.

All drivers are issues with **TREM card** (IN FULL) (see **Appendix 5**).

Training requirements for Cat "A" (Microbiology only)

Designated Laboratory staff must have undertaken required training i.e.
MDHST 010 VHF PPE Competency.
Guidance documentation is available on the Microbiology Division Quality Management System:

MDHSGUID 009 Guidance on Transportation and Packaging of Category A Specimens

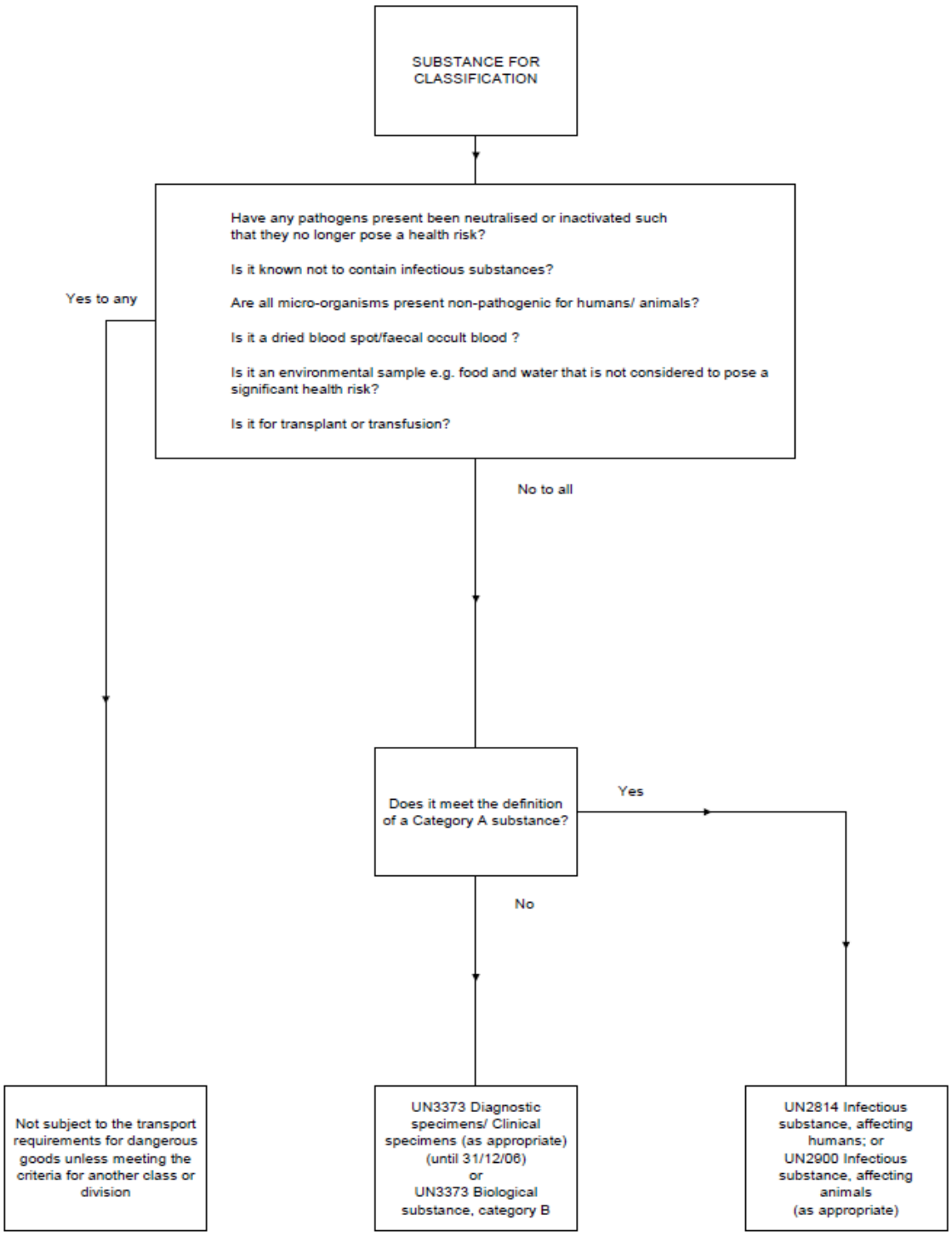
9. Monitoring compliance

Compliance will be measured using review of standard operating procedures and/or technical details procedures, observations, incident reporting and audits. The results of which will be monitored by the Public Health Wales Health and Safety and Infection Prevention Control and Standards (IPCS) Groups.

Appendix 1

Transport of Infectious Diseases - Department for Transport (DfT)

APPENDIX B: FLOWCHART FOR THE CLASSIFICATION OF INFECTIOUS SUBSTANCES



Appendix 2

Packaging of category "B" specimens

All specimen forms must be filled in correctly, to ensure that all the necessary clinical information is supplied to the laboratory processing the specimen.

- Forms must be signed by the clinician who is making the request for investigation of the sample or by the delegated appropriate nurse. The receiving laboratory may not process any sample which arrives with incomplete documentation or without a signature.
- The specimen in its primary container must be placed in a transport specimen bag (the secondary container) and sealed by means of the integral sealing strip.
- Bags must not be sealed using staples, pins, paper clips etc. Where fold over forms are used (for confidentiality purposes) they should be sealed accordingly.
- If more than one primary specimen container is placed into a secondary bag then there should be sufficient cushioning to prevent contact and possible leakage, and sufficient absorbent material to absorb the total volume of any possible liquid spillage.

For larger specimens where integral forms and bags cannot be used, the specimen should be placed into a robust plastic container (primary) which should then be placed into a large plastic bag (secondary) sealable by an integral sealing strip. The form should then either be placed in a side pocket (if present) or into a plastic envelope, which can be attached to the specimen container.

- There will be a pre-agreed, designated collection/delivery point for specimens.

- This collection/delivery point must ensure the safety of the specimens from tampering or loss.

- A specimen collection/delivery container with entire sides will be placed at each of these points.

- Containers will be sited below eye level and ideally fixed or placed to prevent contents tipping or spilling out.

- It will be the responsibility of the staff from that area to ensure that these containers are regularly cleaned or disinfected with an approved disinfectant.

- The Infection Prevention and Control team should be contacted for advice if the container has been knowingly contaminated; records should be kept of all cleaning/disinfection procedures.

- It is essential that specimen bags are segregated from postal collections.

Using SICP, the porter/courier must **transfer** the specimen bags/containers from the specimen collections container held into a specimen carrier container (the outer container) that is suitable for the purpose, prior to being removed from the department / laboratory.

Hand Hygiene must be performed before and after specimen handling.

Specimen carrier containers

For the majority of samples this should be a lockable **carrier box** such as a tool box. The outer container should also be lined with sufficient absorbent material.

Specimen **carrier containers** must be appropriate for the specimen being sent, so that they can withstand the stresses, which may be placed upon them and to avoid leakage, which could cause a potential hazard to other members of staff who will have to handle them. It should be made of a smooth impervious material with entire sides which can be easily cleaned and disinfected (ideally autoclavable) and must be able to retain any fluid in the case of a spill. The container must have a secure lid for transport purposes.

The outer carrier container should display the words "Danger of Infection", a "Biohazard" sign

UN 3373 sign in a diamond of minimum dimension: the width of the line forming the square it must be at least 2 mm, and the letters and numbers must be at least 6 mm high.

It must have a warning sign such as "If found do not open, contact XXXXX". The carriers must be cleaned or disinfected at least weekly by specimen reception staff or immediately if suspected or known to be contaminated.

Records must be kept of this procedure. These carriers should not be used for any other purpose other than carrying specimens. Routine disinfection will be done with disinfectant or wipe according to Public Health Wales policies/procedures.

However, if blood spillage has occurred then the appropriate spillage kit containing hypochlorite granules (NaDCC) must be used, or in the case of dried blood spillages liquid sodium hypochlorite.

If there are no spillage kits available, large blood spillage may be soaked up with paper towels and the area washed with a chlorine releasing agent e.g. chlorclean tablets at 10,000ppm. (Refer to *MDHS 008 Disinfection and Spillage Policy*).

NOTE: Do not use chlorine releasing disinfectants on acidic spills e.g. urine, as the two will react to release chlorine gas.

Appendix 3

Specimen Collection

It is the responsibility of the person requesting the investigation to ensure that all relevant information is completed on the specimen form and container, that an approved container is being used, it is securely closed and that it is inserted into the pocket of the specimen transport bag. Key governance points include:

- Completing the form and identifying the container - details of the service user and type of specimen **must** be completed after the specimen has been collected and not before!
- Demographics of the service user - the specimen must be clearly identified. Pre-printed patient labels/addressographs are preferred to avoid error in transcription or handwriting/spelling. Any handwriting must be printed/written in black.
- The specimen collection form must be completed in full.
- The container must be checked to ensure match with specimen form and service user record before packing.
- Documenting the specimen collected in patient record.

All the relevant clinical information required on the specimen label must be filled in so that laboratory staff can identify the source of the specimen if the need arises (e.g. in the case of a spillage/or accident).

Appendix 4

SHORT –HAUL COMMUNITY TRANSPORT/LONG-HAUL TRANSPORT BY ROAD

Transport of specimens by van/courier

It is responsibility of the sending or receiving laboratory/screening service to ensure that the courier responsible (private contractor or Shared Services driver) for the transport of clinical specimens has been adequately instructed in the transportation of clinical specimens, as stated in Department of Transport document "Transport of Infectious Substances, Revision 5, February 2011" and PI 650[2].

Evidence that the service used complies with regulations should be obtained and kept on record as part of the SLA.

- The laboratory/screening service must ensure the van driver/courier service is able to demonstrate there are:
    - Written instructions on how to deal with a spillage.
    - Have a spillage kit on board.
    - Have been issued with a list of contact emergency telephone numbers in the event of an incident/emergency or delay in transportation which may compromise the integrity of specimens- **Transport Emergency Card (TREM) (Appendix 5)**.
- It is the responsibility of the receiving laboratory accepting specimens from outside their own site, to ensure that the sender is aware of the correct procedures.
- The **sender** needs to know where a supply of the standard containers, labels and transport boxes can be accessed for this service.
- They should also receive written instructions on when and how to use them if deemed necessary.
- It will be the **responsibility** of the **courier** to ensure that they comply with their requirements as stated in the Department of Transport document "Transport of Infectious Substances," and PI 650.

[2] The Screening Division uses the Welsh Blood Service.

- Carriage of pathological specimens between hospitals and/or GP clinics and the Hospital by road comes under the remit of this guidance.

NB. The transport box must be placed in the boot of any vehicle used by the Service or Hospital or the rear compartment of a hospital van and firmly secured, and MUST NOT be transported in the same compartment as passengers.

NB. Mail must not be transported in the same carrier box as specimens. The container must also be appropriately secured in any vehicle.

Packaging – Short Haul

Packaging of short – haul community transported samples must be to the following PI 650 specifications:

The specimen must consist of 3 layers: -

1. A leak proof (liquids) or sift proof (particulate solids) primary container

2. A leak proof/ sift proof secondary container lined with sufficient absorbent material to absorb the whole of the container's content. If more than one primary container is transported in a specimen transport bag the specimens should be separated to prevent contact and possible breakage and leakage of contents. A recommended way to do this is to wrap each primary in sufficient absorbent material to absorb the whole contents of the primary.

   For such **short – haul transport** DfT interpretation of PI 650 allows that the secondary container can be a large sealable plastic bag, this bag being lined with sufficient absorbent material to absorb the whole of the contents. DfT allow that compliance with the differential required by PI 650 can be satisfied here, by a record that such a means of packaging has not resulted in a loss of containment (leakage of clinical material out of the secondary container) during transport

3. An outer container to contain the secondary container in such a manner (cushioning material) that will not allow the secondary container to move during transport. It is good practice to line the outer container with absorbent material. The outer container must be of "rigid" construction and most commonly will be the sealed carrier box used for transport.

The outer packaging must be of sufficient strength for its capacity, mass and intended use, with a minimum external dimension of 100mm.

4. Each box must display the **UN 3373** in its diamond, adjacent to which is the proper shipping name "Biological Substance Category B".

5. A warning sign must also state that the box must not be tampered with or opened and a telephone contact number included for emergency purposes.

Packaging – Long Haul by Road

The packaging should consist of three components:

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

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

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

- It is the responsibility of the receiving laboratory, which accepts specimens from places outside their own site, to ensure that the sender is aware of the correct procedures.

- The sender needs to know where a supply of the standard containers, labels and transport boxes. They should also receive written instructions on when and how to use them if deemed necessary. It will be the responsibility of the courier to ensure that they comply with their requirements as stated in the Department of Transport document "Transport of Infectious Substances, Revision 5, February 2011" and PI 650.

- Carriage of pathological specimens between hospitals and/or GP clinics and the Hospital by road comes under the remit of this guidance.

PI 650.

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Appendix 5

TREM Card

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TRANSPORT EMERGENCY CARD FOR THE TRANSPORTATION OF DIAGNOSTIC SPECIMENS

- **BIOHAZARD MATERIAL**
- **GROSS HUMAN TISSUE**

IN THE EVENT OF AN ACCIDENT OR INCIDENT WHILST TRANSPORTING PATHOLOGY SPECIMENS:

DO NOT OPEN BOX
PULL OVER WHEN IT IS SAFE TO DO SO AND CALL THE FOLLOWING NUMBERS FOR ASSISTANCE

DO NOT PANIC YOU ARE IN NO IMMEDIATE DANGER

IF THERE ARE ANY DELAYS OR OTHER INCIDENTS DURING TRANSPORTATION WHICH MAY COMPROMISE THE INTEGRITY OF THE SPECIMENS OR FOR ANY OTHER EMERGENCIES PLEASE CONTACT: xxxxxxxxxxxxxxxxxx

Normal working hours 9 am to 5 pm (Mon-Fri). Out of hours -please contact XXXXX for emergency contact numbers