

PACKAGING, HANDLING AND DELIVERY OF LABORATORY SPECIMENS POLICY

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1. Rationale

A specimen is defined as any bodily substance taken from a person for the purpose of analysis, such as blood or urine. All specimens should be regarded as potentially infectious, and all members of staff involved in collecting, handling and transporting specimens must follow infection control precautions to prevent transmission of infection.

To reduce risks, the number of persons handling specimens should be kept to a minimum.

Everyone handling specimens should be trained and should be aware of related infection control policies.

The quality of clinical specimens and the methods of collection, storage and transport can all have a significant impact on the accuracy of laboratory results. It is therefore essential that staff follow correct procedures to maximise the potential for accurate laboratory results.

2. Aim

To outline the precautions required to prevent transmission of infection to any staff involved in specimen collection, testing and transportation and the wider community from laboratory specimens, as well as measures required to ensure that high quality specimens are obtained.

3. Legal framework

Health and Safety at Work etc Act, 1974

Management of Health and Safety at Work Regulations, 1999

Control of Substances Hazardous to Health Regulations (COSHH), 2002

The Carriage of Dangerous Goods and Use of Transportable Pressure

Equipment Regulations, 2004

4. General recommendations

Everyone involved in collecting, handling and transporting specimens should be educated about standard infection control precautions and trained in:

- hand hygiene
- the use of personal protective clothing
- the safe use and disposal of sharps

This includes PCT and practice staff.

In addition, staff should be familiar with the Pathology Safety Code of Practice and Trust Waste Policies.

Patients and their carers should be given advice on the collection, storage and transportation of specimens, where appropriate.

5. Specimen collection

Success in the laboratory is dependent on correct, aseptic collection, packaging, storage and transport of specimens. Collection of most specimens is usually the responsibility of clinical staff. Please refer to Pathology Users Handbook.

5.1 Principles of specimen collection

The clinician or person taking any specimens must ensure that the following principles are followed:

- Effective hand washing is performed before and after collection of the specimen
- Appropriate protective clothing is worn when collecting the specimen i.e. appropriate gloves, aprons and, where splashing is possible or expected, goggles or visor
- Measures are taken to prevent contamination of the sample
- The specimen is taken at the correct time
- The correct specimen container is used
- The specimen container is tightly sealed to prevent leakage
- A vacuum blood collection system should be used when performing phlebotomy
- The outside of the container is free from contamination with body fluid
- The sample is appropriately labelled with patients name, date of birth, hospital number (if applicable) as well as the date and time that the specimen was obtained
- The appropriate request form is completed with details of the patient's relevant medical history, investigation required and dates of any antibiotic treatment received. Please ensure that the correct name is on the specimen container and the request slip
- The specimen container must be placed in an approved specimen bag and sealed, with the request form in the separate pouch which is attached
- The specimen is stored correctly and transported to the laboratory promptly
- The patient's confidentiality is maintained at all times
- All specimen containers should be checked by the clinician for exterior contamination and disinfected if indicated.

5.2 High risk specimens

- All clinical specimens should be regarded as potentially infectious.
- Specimens known or suspected to contain high-risk pathogens such as bloodborne viruses should be marked using a biohazard sticker on the specimen container and highlighted on the request form.
- These specimens must be double bagged in designated specimen bags.
- Please refer to infection control policy for a list of biohazard organisms
- In addition specimens from patients considered to be of high possibility of Viral Haemorrhagic Fever by CMM risk assessment should be transported to the laboratory in a UN3373 container, and the receiving laboratory notified. Transfer of specimens to referral laboratories outside of the Trust by Public Highway must be as **Category A** and the receiving laboratory notified. See GP/HS/SCOP008 Transport of 'High Possibility' VHF specimens

6. Storage of specimens

For accurate results to be obtained, specimens should be received by the laboratory as soon as possible.

If for microbiological investigation, urine and sputum specimens should ideally be examined in the laboratory within 2 hours of collection, and stool samples within 12 hours. However, where this is not possible, urine and sputum specimens must be stored within a **designated** fridge, but only for a maximum of 24 hours, at 4°C - 8°C. This will help prevent bacteria and contaminants from multiplying and giving misleading results.

However, it must be noted that samples taken for blood culture or vaginal swabs must not be refrigerated, but must be transported to the laboratory as soon as possible for incubation at 37°C. Samples obtained for non-microbiological investigation also do not need to be refrigerated.

If any clinical specimens are to be stored in a refrigerator, it is essential that:

- There is a refrigerator for the purpose of specimen storage only
- The specimen refrigerator is not accessible to the public
- The specimen refrigerator is cleaned on a weekly basis, defrosted regularly, and cleaned and disinfected after any spillage or leakage

7. Transportation of clinical specimens

Under the Health and Safety at Work Act (1974), all staff have an obligation to protect themselves and others, e.g. the public, from inadvertent contamination from hazardous substances.

All staff must therefore be aware of how to deal safely with clinical specimens and how to avoid any spillage or leakage of body fluids.

Containers designated for the transport of clinical specimens must never be used for the transportation of any other items.

Transportation of specimens by vehicle is usually by a courier service or by van to the laboratory. Vehicles used for the transportation of clinical specimens must have the following available for use in the event of an accidental spillage:

- Appropriate protective clothing (gloves and aprons)
- Spillage kit to enable removal of spillage and disinfection of area with written instructions
- Alcohol gel for hand hygiene

In addition, the vehicle must have impervious internal surfaces that can be cleaned as per policy. If other goods are transported, there must be a physical barrier between "clean" and "dirty" items.

Staff transporting clinical specimens must always keep the vehicle locked when unattended. In the event of vehicle breakdown or road traffic accident, the driver must not allow members of the public to handle clinical specimens.

7.1 Postage of specimens

The Royal Mail defines pathological specimens as any biological material sent for medical analysis, or substances which may contain living organisms, e.g. blood products, serum, vaccines and semen.

See table overleaf:

The UN Regulations (effective from 1 January 2005) make provision for:

Classification	Definition	UN assignment	Packaging code
Category A	Infectious substance transported in a form that, when exposure to it occurs, is capable of causing life threatening or fatal disease	UN2814 – infectious substance for humans (UN2900 – infectious substance for animals)	602
Category B	Diagnostic specimen with no known risk of serious human or animal disease	UN3373 – diagnostic specimen	650

Category B

Diagnostic specimens are usually assigned to **UN3373**. Specimens may be sent by the postal system provided they comply with the basic triple packaging instructions 650.

Basic triple packaging system

This consists of three layers as follows:

Primary receptacle

A labelled primary, watertight, leak-proof receptacle containing the specimen (as normally used by clinical staff). This receptacle should be wrapped in enough absorbent material to absorb all fluid in case of breakage.

Secondary receptacle

A second durable, watertight, leak-proof receptacle to enclose and protect the primary receptacle(s). Several wrapped primary receptacles may be placed in one secondary receptacle. Sufficient additional absorbent material must be used to cushion multiple primary receptacles.

Information concerning the specimen, such as request forms or letters that identify or describe the specimen and the identity of the sender and receiver should be taped to the outside of the secondary receptacle.

Outer shipping package

The secondary receptacle is placed in a rigid outer shipping package which should protect it and its contents from outside influences such as physical damage and water while in transit. The outer package must bear the UN packaging specification and be marked "Diagnostic specimens".

Specimens must always be sent by 1st class post or Datapost. The name and address of the sender (to be contacted in case of damage or leakage) must be shown on the outer cover.

"Safebox" from Royal Mail has been designed for sending diagnostic specimens (UN3373) by post and is fully compliant with packaging instruction 650. It can be ordered by telephone on: 0845 076 2000 or email:

www.royalmail.com

Category A

Diagnostic specimens from a patient who has or may have a serious disease which can be readily transmitted from one individual to another, directly or indirectly, and for which effective treatment and preventive measures are not usually available, must be assigned to **UN2814 and transported via designated courier**. This category consists mainly of Hazard Group 4 biological agents (e.g. Lassa Fever), new and emerging organisms, and concentrated laboratory cultures.

For guidance on current approved courier contact microbiology.

8. On-site testing of specimens

For specimens tested on site, such as urine or blood glucose, the clinician must decontaminate their hands before the task, wear disposable gloves and apron and wash hands after removing protective clothing.

Urine samples tested on site must be disposed of appropriately either in a sluice facility or if container sealed or contents gelled into clinical waste bin never in a hand wash basin.

Analytical equipment such as blood glucose and cholesterol monitoring must be used safely and according to manufacturer's instructions. Maintenance and decontamination of the equipment must also be carried out according to manufacturer's instructions.

Failure to follow safe practices can put staff at risk of infection and can result in incorrect diagnosis for the patient.

9. References

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