

Pathology - Quality Management

Specimen Packaging and Transport

PATH.PROC.013

Version: 2.0

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Document Information

Target Users

All Staff who take, package or transport samples for pathology investigations

Responsibilities

All Staff must follow this SOP.

It is the responsibility of the Department Manager to ensure that this policy is adhered to.

Change Control

All change control data is held on the QMS system (iPassport).

References

ISO 15189:2012 – Medical laboratories – Requirements for quality and competence (clause 5.4 - Pre-examination processes)

Biological agents: Managing the risks in laboratories and healthcare premises – 2005

Health Technical Memorandum 07-01: Safe management of healthcare waste – 2013

The Approved List of Biological Agents – HSE 2013

Blood-borne viruses in the workplace - HSE 2001

Safe working and the prevention of infection in clinical laboratories - HSE 2003

Management of Hazard Group 4 viral haemorrhagic fevers and similar human infectious diseases of high consequence - Advisory Committee on Dangerous Pathogens - HSE Nov 2015

Guidance Note 17/2012 - Transport of Infectious Substances UN2814, UN2900 and UN3373

Guidance Note 24/2014 - Carriage by Road of Wastes and Contaminants from Category A Pathogens

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Procedure

Introduction

Pathology testing plays a key role in the diagnosis and treatment of disease in both primary and secondary care (it is estimated that 70-80 per cent of all health care decisions affecting diagnosis or treatment involve a pathology investigation (Report of the Review of NHS Pathology Services in England 2006)); to enable this we must safely transport samples from various locations to the laboratory.

Specimen collection and transport extends to all areas of the hospital and into the community. The Trust must ensure that every reasonable measure is taken to prevent individuals being exposed to potentially hazardous material.

Responsibilities under the Control of Substances Hazardous to Health (COSHH) regulations require the Trust to ensure that systems are in place which enable all employees exposed to substances hazardous to their health to be provided with sufficient, appropriate information to allow them to take all precautions necessary for their protection. Any person responsible for handling specimens or other potentially hazardous material has duties under the Health and Safety at Work Act (HSWA) and the COSHH Regulations to conduct work safely.

Where specimens are to be transported by road, the Carriage of Dangerous Goods and Transportable Pressure Equipment Regulations 2009 applies.

Hazard Categories

Classification of Organisms/Specimens

For the purposes of transport, microorganisms are classified as being in either Category 'A' or 'B' according to the 'Carriage of Dangerous Goods and Transportable Pressure Equipment Regulations 2009' as amended. These are separate to the Advisory Committee on Dangerous Pathogens (ACDP) hazard groups but in general ACDP group 3 and 4 organisms correlate with Category A organisms

Category A

Category A is defined as:

'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. See Table 'Category A infectious agents' for an indicative list. This includes all agents classified as HG4 in the Approved List of biological agents, many HG3 agents and two HG2 agents (*Clostridium botulinum* and poliovirus). Those that can cause disease in humans or animals are assigned to UN 2814. Those that affect animals only are assigned to UN 2900 (additional requirements are in place for animal pathogens in the UK – see the DEFRA website for further details). Exposure occurs when an infectious substance is released outside of the protective packaging, resulting in physical contact with humans or animals.'

It is unlikely that healthcare workers will come into contact with Category A organisms, the most likely area for this to happen would be in the Emergency Department where there are policies and procedures in place for the actions to be taken if a patient suspected of being infected with one of these agents was to be admitted.

Transport of Category A samples

A specific transport box and materials are available from the laboratory in case of a suspected Category A infection – please see specific guidance or contact the laboratory for further guidance

Category B

Category B is defined as:

'Any infectious substance that does not meet the criteria for inclusion in Category A and must be consigned/shipped as UN3373.

In general, clinical samples can be regarded as being under Category B unless there is reason to believe that they are Category A for whatever reason. Samples under UN 3373 can be sent (appropriately packaged) by routine postal service.

Collection

When collecting samples; please follow local procedures and best professional practise.

- All staff who handle specimens must ensure that any cuts or abrasions on their skin are covered with an appropriate water proof dressing.
- All staff must ensure they understand and use the correct swab or sample pot (for example) prior to taking a sample.
- Staff who have eczema, psoriasis, dermatitis or any other skin condition affecting the hands must wear disposable gloves when collecting / handling specimens
- Medical / nursing students, trainee phlebotomists, clinical support workers etc. must not be allowed to 'bleed' high risk patients until experienced in venepuncture.

Information and Request Form and Specimen Labelling

Staff are directed to the *Pathology Specimen Guide* for a quick reference to completion of specimen labels and request forms

All disciplines except Transfusion

| ON THE TUBE | ON THE FORM |
|-----------------------------------------|-----------------------------------------|
| Patients full name (surname & forename) | Patients full name (surname & forename) |
| Date of Birth | Date of Birth / Gender |
| RMP Number or NHS Number | NHS or RMP Number |
| Date of Collection | Location of report |
| | Consultant or GP |
| | Clinical information |

Transfusion

| ON THE TUBE | ON THE FORM |
|----------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Patients full name (surname & forename) | Patients full name (surname & forename) |
| Date of Birth | Date of Birth / Gender |
| NHS or RMP Number | NHS or RMP Number |
| Date & time sample was taken | Location of report |
| Signature of member of staff | Consultant or GP |
| Location | Clinical information |
| Transfusion samples must be hand labelled, not using a Lorenzo label and the request form must be signed | |

The definitive document with regard to specimen labelling is the *Trust Specimen Acceptance Policy*.

All these documents are available on the Trust intranet.

High risk samples

The laboratory do not require samples to be labelled as 'High Risk' as all samples are handled as if they are potentially infectious (the only exception to this is the case of Category A pathogens which have separate procedures to this one).

Packaging of samples

Discipline specific requirements

Microbiology

One sample per bag only, this is in case the sample leaks in transit and has to be discarded – this way only one sample is lost.

Biochemistry, Haematology & Transfusion

Multiple samples (for the same patient) will be accepted in a single bag

Within the Trust

Lorenzo requests

Whenever possible Lorenzo should be used to place pathology requests as the patient demographics and requests are transmitted electronically to pathology

All specimen containers must be placed in a Lorenzo bag, the Lorenzo form firmly attached to the bag and the bag should be sealed firmly.

Non-Lorenzo requests

Whilst Lorenzo should ideally be used for all requests, it is acknowledged that this is not always possible; in this case complete a manual form and place the sample in the ziplock part of a kangaroo bag and seal firmly and place the request form in the pouch; **DO NOT** place the form in the sealed bag with the sample.

GP Surgeries

tQuest requests

Whenever possible tQuest should be used to place pathology requests as the patient demographics and requests are transmitted electronically to pathology. The sample must be placed into a tQuest bag, sealed and the request form stuck to the bag

Manual requests

These should only be used when tQuest is unavailable. The sample must be placed into either a tQuest bag or a kangaroo bag and sealed with the request form outside the specimen compartment (either stuck to the bag or in the open pouch of a kangaroo bag).

Prior to collection

The samples should be placed a large sealable plastic bag (these are supplied by pathology) prior to collection by the hospital transport service drivers.

Community

Manual request forms and kangaroo bag are available from pathology. Once taken and labelled, the sample must be placed in the kangaroo bag which is then securely closed, the completed request form must then be placed in the open pouch of the kangaroo bag.

The sample must then be placed in a rigid container that meets the requirements of 'Packing Instruction 650' to meet the legislative requirements of the Carriage of Dangerous Goods and Transportable Pressure Equipment Regulations 2009 as amended. The following items listed are compliant with the requirements of this legislation and are available on NHS Supply Chain.

| Item | Link ¹ |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Transport Systems and Mailing Containers Red lid bio-bottle 0.5ltr UN3373 / IATA(diagnostic & infectious) transport container - holds up to 4 samples | https://my.supplychain.nhs.uk/Catalogue/product/kfd169 |
| Transport Systems and Mailing Containers Blue lid bio-bottle 0.85ltr UN3373 / IATA(diagnostic & infectious) transport container - holds up to 6 samples | https://my.supplychain.nhs.uk/Catalogue/product/kfd178 |
| Transport Systems and Mailing Containers Orange lid bio-bottle 2.5ltr UN3373 / IATA(diagnostic & infectious) transport container - holds up to 18 samples | https://my.supplychain.nhs.uk/Catalogue/product/kfd170 |
| Transport Systems and Mailing Containers Yellow lid bio-bottle 3ltr wide neck UN3373 / IATA(diagnostic & infectious) transport container - holds up to 22 samples | https://my.supplychain.nhs.uk/Catalogue/product/kfd171 |

Please note: - Pathology do not supply these containers

Once the specimen has been taken and bagged, place it in the container, firmly replace the lid on the container and place it in the box. The sample can now be transported safely and in compliance with the law. Once at its destination the specimen can be removed from the outer packaging for transfer to e.g. GP collection bag. So long as the container is not contaminated it can be reused (unless there are signs of significant wear in which case it should be discarded (in a safe manner) and replaced).

¹ Links were valid on 13-May-2019

Transport of samples

Temperature sensitive samples

Further details of which tests are temperature sensitive are contained in the Pathology User Guide. These sample usually need to be brought to the pathology directly after they have been taken.

Cold samples

These need to be transported on wet ice to ensure that the analyte of interest does degrade. These should be transported by hand to the laboratory

Warm samples

These should be transported (suitably packaged) in an inside pocket direct to the laboratory.

Within the Trust

Specimens must be collected and transported in the appropriate container/medium. Details are available in the Pathology User Guide and the Lorenzo Patient Administration System is set up such that each requestable item is tied to the correct container type.

From Ward/Department Collection points via porters etc:-

All specimens should be in appropriate bags and these should be “double-bagged” for transport to the laboratory reception using sealable pathology diagnostic specimen bags – available from pathology reception and the supplies department.

Un-sealable bags e.g. plastic carrier bags/patient possession bags should NOT be used for transporting specimens, but we do supply carrier bags (unsealed) for 24hr urines.

Leaked samples/spillages should be dealt with following the appropriate guidelines.

Using the Air Tube System

See Air Tube System SOP (available on the intranet) for complete details

All specimens should be in appropriate bags and NEVER placed loosely inside the air-tube pod container. Ensure that the air-tube pod is not overfilled with specimens and that the pod lid can be closed securely and firmly. Overfilling of the pods can cause sample containers to crack and leak, and the pod lid to distort and not close properly.

Contaminated air-tube containers should be dealt with following the appropriate guidelines

DO NOT send histology samples (including semen), blood products or blood gases through the air tube. Sending samples from patients who are suspected to suffering from one of the diseases included in Category A (see Category A infectious agents (human infectious agents only) page 11) is absolutely forbidden. These must be transported in the carrier specifically provided for this purpose (available from Pathology).

Urgent Samples

For urgent samples both during and after the working day, it is the responsibility of the originator of the request to make arrangements for the transport of the sample to the laboratory.

During the working day, samples should be brought direct to the laboratory. Outside working hours specimens should be brought to the Pathology Department. Access to Pathology out of hours is restricted and the on duty staff must be contacted by the buzzer at the door.

Use of the Air tube system for urgent samples is not recommended as samples can be delayed or can get stuck in the system

Outside Trust Premises

The transport of (potentially) infectious substances and diagnostic specimens from and to UK premises is subject to strict regulation the main legislation is the "Carriage of Dangerous Goods and Transportable Pressure Equipment Regulations 2009' as amended" (see references).

For transport in vehicles all samples must be contained in secure and sealable transport containers to comply with packing instruction 650 and labelled as UN 3373 (see previous sections). For the quantities involved there is no requirement for marking vehicles.

The hospital transport service drivers are supplied with leak-proof sealable rigid specimen boxes; these are designed to withstand the shocks and loadings normally encountered during carriage. This packaging meets the requirements of Packing Instruction 650 required for the transport of biological samples

Emergency Procedures

Sample leakage within the Trust

Please see Appendix 7 of the trust Decontamination Policy for instructions on dealing with spillages within the Trust.

Sample leakage at other than Trust locations

Please refer to local guidance for advice on dealing with spillages that occur in e.g. primary care.

Incidents when transporting specimens by road

Please refer to PATH.CD.025 – Transport of Samples outside Trust Premises (available on request from the Pathology Quality Manager).

Appendix

Definitions of the ACDP Hazard Groups

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazard group definitions When classifying a biological agent it should be assigned to one of the following groups according to its level of risk of infection to humans. | |
| Group 1 | Unlikely to cause human disease. |
| Group 2 | Can cause human disease and may be a hazard to employees; it is unlikely to spread to the community and there is usually effective prophylaxis or treatment available. |
| Group 3 | Can cause severe human disease and may be a serious hazard to employees; it may spread to the community, but there is usually effective prophylaxis or treatment available. |
| Group 4 | Causes severe human disease and is a serious hazard to employees; it is likely to spread to the community and there is usually no effective prophylaxis or treatment available |

Category A infectious agents (human infectious agents only)

The following list is not definitive as there are new/emerging pathogens which are not listed but meet the same criteria – please seek advice from Infection Control or the Consultant Microbiologist if in any doubt (or transport as Category A).

| | |
|-----------------------------------------------------------|---------------------------------------------------------|
| <i>Bacillus anthracis</i> (cultures only) | <i>Brucella abortus</i> (cultures only) |
| <i>Brucella melitensis</i> (cultures only) | <i>Brucella suis</i> (cultures only) |
| <i>Burkholderia mallei</i> (cultures only) | <i>Burkholderia pseudomallei</i> (cultures only) |
| <i>Chlamydia psittaci</i> – avian strains (cultures only) | <i>Clostridium botulinum</i> (cultures only) |
| <i>Coccidioides immitis</i> (cultures only) | <i>Coxiella burnetii</i> (cultures only) |
| Crimean-Congo hemorrhagic fever virus | Dengue virus (cultures only) |
| Eastern equine encephalitis virus (cultures only) | <i>Escherichia coli</i> , verotoxigenic (cultures only) |
| Ebola virus | Flexal virus |
| <i>Francisella tularensis</i> (cultures only) | Guanarito virus |
| Hantaan virus | Hantaviruses causing hantavirus pulmonary 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) | Nipah virus |
| Omsk hemorrhagic fever virus | Poliovirus (cultures only) |
| Rabies virus | <i>Rickettsia prowazekii</i> (cultures only) |
| <i>Rickettsia rickettsii</i> (cultures only) | Rift Valley fever virus |
| Russian spring-summer encephalitis virus (cultures only) | Sabia virus |
| <i>Shigella dysenteriae</i> type 1 (cultures only) | Tick-borne encephalitis virus (cultures only) |
| Variola virus | Venezuelan equine encephalitis virus |
| West Nile virus (cultures only) | Yellow fever virus (cultures only) |
| <i>Yersinia pestis</i> (cultures only) | |