

Cellular Pathology Laboratory Services

User Handbook

A UKAS accredited medical laboratory No.8987 for those tests detailed on the [Schedule of Accreditation](#) which can be accessed by clicking the link



8987

Non-Accredited tests offered by the laboratory

In-house documented procedures using manual methods in conjunction with Manufacturer's Instructions.

Gallyas, Solochrome Cyanin, Von Kossa

Automated Immunohistochemistry (IHC) incorporating the following antibodies

CD1a, ATRX, BAP1, Caldesmon, CA125, C4d, CD2, CD3, CD5, CD20, CD38, CD45 (LCA), CD68, CD123, Chromogranin A (CgA), CK7, Cyclin D1 (CyD1) (CCND1), EBER, EBV (LMP), FSH, GATA3, GFAP, GH, HHF35 (pan SM), ICOS, IDH-1, INI-1, MOC3, MNF116, MPO, MYOD1, Myogenin, NF, NKX 3.1, Oct3/4, p40, P63, PAX5, PAX8, PD1, PDL1 (22C3 and 28-8), PROLACTIN (PRL), SOX10, STAT6, TSH, TTF1

Contents

1. Introduction, laboratory locations	3
2. Laboratory hours	4
3. Tests referred to external centres	5-6
4. Telephone numbers	7-8
5. Request forms and sample labelling	9-10
6. High risk specimens and urgent investigations	10-11
7. Transport – (Internal)	12-14
8. Referral of material to UHW	14
9. Specimen containers and collection	14-15
10. Frozen sections and urgent paraffin section service	15-16
11. Result Reporting and result enquiries	17-18
12. Special Investigations/Requirements	19-30
• Fetal pathology Unit	19-20
• Cytopathology Unit	21-24
• Neuropathology	25-26
• Fresh Specimens	27
• Renal biopsies	27
• Pancreatic biopsies	27
• Cardiac biopsies	27
• Rectal section biopsies for Hirschprung's disease	28
• Paediatric Tumours	28
• All Wales Lymphoma Panel	28
• Electron Microscopy	29
• Immunocytochemistry	29
13. Uncertainty of measurement	30
14. Mortuary Services	31-34

N.B. This USER HANDBOOK is available on the Cardiff and Vale clinical portal.

1. Introduction

The Cellular Pathology department of Cardiff and vale UHB provides a wide range of diagnostic services to hospitals, general practitioners and other agencies. In addition to the general surgical and post mortem diagnostic services, the department provides specialist services including:

Immunocytochemistry,
Renal pathology
Neuropathology
Paediatric pathology
Electron microscopy

The department also hosts the:

All Wales Lymphoma panel

All laboratory services are provided from the University Hospital of Wales (UHW) site.

Mortuary services are provided on both the UHW and University Hospital Llandough (UHL) sites, with post mortem examinations occurring on the UHW site only.

Cellular Pathology is responsible for the processing of personal data held both manually and on a computer and is compliant with the General Data Protection Regulation (GDPR).

Any complaints/concerns or dissatisfaction with the Cellular Pathology department will be managed in accordance with the UHB guidance to concerns/complaints and will be dealt with promptly.

Location

Cellular Pathology Department
University Hospital of Wales
Heath Park
Cardiff
CF14 4XW

The Department is located at rear of hospital site across two floors. The Consultant and Support offices are located on the 1st floor. From the main (concourse) entrance: Take the main B block lift to the 1st floor and follow signposts to "Laboratory medicine". Travel along the corridor to the security doors where there is a telephone and list of contact numbers to ring for entrance. From the rear (University) entrance. Take one flight of stairs up to security doors where there is a telephone and list of contact numbers. Ring appropriate number for entry.

The laboratory is on the ground floor room GTB2-5.

From main entrance follow signs to Y-Gegin Restaurant, pass through the restaurant and take the third door on the right. Take one flight of stairs down to security doors on the left. Ring the bell or appropriate number for entry.

From rear (University) entrance. Take the first door on the left and one flight of stairs down to security doors on the left. Ring appropriate number, listed by the telephone for entry.

2. LABORATORY HOURS

Normal hours of service:

Monday to Friday 07:00 -18:00 hrs (excluding bank holidays)
Saturday and Sunday 07:00 -16:00 hrs

Out of hours (on-call):

Outside normal hours (as above), technical staff may be contacted via the hospital switchboard using the radio pager.

This facility is to cover emergency, clinically urgent or critical work only.

Contact with Consultant Pathologists is also made using this system.

3. TESTS REFERRED TO EXTERNAL CENTRES

When tests requested are not part of the laboratory repertoire these may be referred to a suitably accredited (ISO 15189:2012) laboratory.

External Referral of Neuropathology Specimens

Currently all muscle biopsies, peripheral nerve biopsies and ophthalmic biopsies are diagnosed at external centres appropriate to the nature of the specimen and differential diagnosis.

Adult muscle biopsies are referred to:

Department Neuropathology
Pathology Science Building (Phase II)
Southmead Hospital
Bristol

A UKAS accredited medical laboratory No.8191 for those tests detailed on the [Schedule of Accreditation](#) which can be accessed by clicking the link

Approximate turnaround time 14 - 21 days

Paediatric Muscles are referred to:

Dubowitz Neuromuscular Centre
National Hospital for Neurology and Neurosurgery
Institute of Neurology
Great Ormond Street Hospital
Queen Square
London

A UKAS accredited medical laboratory No.8116 for those tests detailed on the [Schedule of Accreditation](#) which can be accessed by clicking the link

Turnaround time: 50% reports are received by Cellular Pathology UHW in 31 days.

Muscle biopsies can only be sent to the referral centres on Monday – Wednesday due to their being sent snap frozen. This can unavoidably increase the turnaround times.

HER2 FISH and 1p19q genetic analysis of brain tumours is undertaken at:

All Wales Genetics Laboratory
Institute of Medical Genetics
University Hospital of Wales
Cardiff and Vale UHB
Cf14 4XW

A UKAS accredited medical laboratory No.8988 for those tests detailed on the [Schedule of Accreditation](#) which can be accessed by clicking the link

HER2 FISH and 1p19q are currently not included on the schedule of accreditation

HER2 has a turnaround time of 10 days

External referral of Immunocytochemistry

Where a requested antibody does not form part of the departments' Immunocytochemical repertoire slides are referred for staining to:

HSL (Health Services Laboratories) Advanced Diagnostics,
19 Fitzroy St,
Bloomsbury, London,
W1T 4BP, UK

A UKAS accredited medical laboratory No.9007 for those tests detailed on the [Schedule of Accreditation](#) which can be accessed by clicking the link

Test that are sent referred and are Identified as not appearing on the schedule of accreditation accredited medical laboratory No.9007 are:

FOXP3	Glycophorin A	ICOS	HHV8
CD103	CXCL13	TCR Beta	IgG4

Approximate turnaround time 7- 10 days.

4. TELEPHONE NUMBERS

Switchboard 029-2184-7747

		Extension
Cellular Pathology Services		
Laboratory Director	Dr Thomas Hockey	UHW 41986
Cellular Pathology Services Manager	Mr Scott Gable	UHW 44277
HTA Compliance Manager	Mrs Louise Rich	UHW 47526

Cellular Pathology Quality Management team

Quality Manager	Mrs Sally Jones	UHW 44067
Quality Manager	Mr Adam Sotero	UHW 44067
Quality Officer	Ms Nicola Parks	UHW 44067
Quality Admin Support	Ms Nichola Hooper	UHW 44067

Consultant & Clinical Academic & Staff in Pathology

Dr M. Abdollahi	Cellular Pathology	UHW 41895
Dr R. Asher	Dermatopathology	UHW 47178
Dr. R. Attanoos	Cellular Pathology & Lymphoma	UHW 41898
Dr. A. Boyde	Gynae Pathology	UHW 48943
Dr. A. Christian	Cellular pathology	UHW 44278
Dr O.Curran	Neuropathology	UHW 47469
Dr. A. Daniels	Neuropathology	UHW 40945
Dr. T. Hockey	Cellular Pathology & Cytopathology	UHW 41986
Dr. A. Joshi	Cellular Pathology and lymphoma	UHW 44279
Dr. K. May	Dermatopathology	UHW 48040
Dr. M. Morgan	Gastro Intestinal Pathology	UHW 41988
Dr. S. Popov	Paediatric Pathology	UHW 42703
Dr M. Prance	Dermatopathology	UHW 41674
Dr A. Richards	Cellular Pathology	UHW 47427
Dr K. Robinson	Cellular Pathology	UHW 41894
Dr G. Rowlands	Gynae Pathology	UHW 44049
Dr. M. Sanders	Renal Pathology	UHW 47166
Dr J. Sutak	Lymphoma	UHW 44273
Dr. D.H. Thomas	Urological Pathology	UHW 43578
Dr. J. Tremlett	Cellular Pathology	UHW 47470
Dr. M. Varma	Urological Pathology	UHW 44273

Cytology

Lead Biomedical Scientist	Ms Sian Norris	UHW 41897
Laboratory		UHW 41875

Sensitive Services (Including Neuropathology, Foetal Pathology, Paediatric Pathology and Post Mortem Pathology)

Lead Biomedical Scientist Fetal Pathology/Paediatric pathology Specialist BMS	Mrs Lydia Llewellyn	UHW 45983
Neuropathology / PM Pathology Specialist BMS	Mrs Claire Roberts	UHW 44025
	Mr Mark Francis	UHW 45983

Specialist Services (Including Immunohistochemistry, Molecular Pathology, Electron Microscopy)

Lead Biomedical Scientist Immunohistochemistry	Mrs Alison Griffin	UHW 48617
Lead Biomedical Scientist Immunohistochemistry	Mrs Hussana Thomas	UHW 48617
Lead Biomedical Scientist Electron Microscopy	Mrs Karen Maharg	UHW 42216

Operational Services (Including Surgical Histology)

Lead Biomedical Scientist (Dissection)	Mrs Alison Griffin	UHW 48617
Lead Biomedical Scientist (Paraffin)	Mrs Hussana Thomas	UHW 48617
Laboratory		UHW 42710/42709

Mortuary/Body store

Mortuary Manager	Mr Scott Gable	UHW 44277
UHW Mortuary Office		UHW 44269

5. REQUEST FORMS AND LABELLING

Supply of forms:

Forms are also available to print on the UHB Cellular Pathology intranet page.

Request forms should be downloaded from the intranet to ensure the current version is used. **DO NOT COPY AND STOCK PILE FORMS**

There is a general request form used for surgical histology and tissue specific request forms that should be used for:

- Barrett's
- Breast resection
- Cervical Biopsy
- Colorectal tumour
- Cytology Lung tumour
- Cytology
- Dermatology
- Endoscopy
- Hysterectomy for endometrial cancer
- Lung Tumour
- Muscle/nerve biopsy
- Non-Gynaecological Cytology'
- Muscle/Nerve biopsy
- Neuropathology
- Prostate biopsy
- Suspected Barrett's Oesophagus endoscopic biopsies
- Trans-rectal prostate core biopsies
- Renal biopsy – transplant and native biopsy
- Vulval biopsy/resection.

In addition:

There is a specific Immunohistochemistry referral form for use by external organisations referring cases to UHW.

There is a specific neuropathology referral form for use by general pathologists to refer PM specimens for dissection and reporting by the Neuropathologist.

All forms are available from Cellular Pathology reception, GTB2-5 (ext 42709) and on the departmental intranet page.

Completion of request forms:

When completing request forms and labelling samples, please take note of the "Labelling of Specimens Submitted to Medical Laboratories" UHB Policy

- Complete all sections of the request form with clear, concise and legible clinical details. An accurate interpretation of the pathology depends on precise clinical information.
- Each sample taken from the same patient must be clearly labelled. If multiple biopsies are taken then each individual specimen container (**not the bag used to**

hold the containers) must be clearly labelled to indicate the site of each biopsy. An identifying serial number or letter indicating site or nature of specimen should be allocated to each sample by the referring clinician.

- The requesting clinician must sign each form and print his/her full name and bleep number.
- If a request is urgent then this must be clearly indicated and a contact name, bleep or telephone number must be given.
- Date and time specimen is taken (AM/PM is not sufficient)
- Use addressograph labels whenever possible to label the request form and sample container(s). Addressograph labels do not include the ward/clinic or consultant's name, both of which must be clearly printed on the request form with a ballpoint pen.
- When an addressograph label is not available, the patient's name, address, date of birth and NHS number or Hospital number (CRN) must be included on the request form and sample(s).
- The computer system will identify small variations in details as separate patients (e.g. differently spelt names, different dates of birth, and different case record numbers.). Accordingly, care must be taken to spell every item relating to the patient correctly. Errors in request forms can cause confusion when seeking historical results or producing cumulative records and may even result in misidentification of samples.
- Incorrectly or insufficiently labelled specimens / request forms may result in specimen rejection. See the Laboratory medicine directorate specimen rejection policy

6. HIGH RISK SAMPLES AND URGENT INVESTIGATIONS

Specimens classed as High Risk include all those received from patients who are;

- suffering from infective or suspected infective diseases; in particular, those who are suspected or known to have Creutzfeldt-Jakob disease (CJD), Human Immunodeficiency Viruses: -HIV 1 & HIV 2, M.R.S.A., Hepatitis, Tuberculosis or Legionnaire's disease.
- in *at risk* groups e.g. drug addicts.
- associated with radiation hazards.
- suspected of suffering from meningitis (C.S.F.)

The decision as to whether or not to identify a patient as "High Risk" is the responsibility of the clinician in charge of the patient.

In 'high risk' cases:

- Request forms and specimens should have yellow labels attached to indicate High Risk status.
- The accompanying request form should ***not*** be placed inside the plastic bag with the specimen pot, but in a separate pocket on the outside of the bag or in a second bag also containing the bagged specimen.
- Specimens must be transported to the laboratory inside sealed bags or leak-proof containers. The bags must be marked "BIO HAZARD" If these bags are not available, the bag must be clearly marked with a yellow label indicating a high risk specimen.

In exceptional circumstances and only after prior consultation with a consultant pathologist will the laboratories accept high risk samples from which the fixative has been omitted.

The potential hazard must be stated on the request form, this may dictate the way material is processed and handled

Urgent Investigations.

- Requests for urgent investigations must only be made by the clinician responsible for the patient.
- The request form must be marked “URGENT” and a contact telephone number or bleep number given on the form.
- If these procedures are not followed, the specimens will be treated as non-urgent and processed as a routine case.
- The clinician is responsible for organizing the delivery of the urgent specimen to the laboratory.
- If a report becomes urgent please inform the relevant pathologist/laboratory section as soon as possible

Out of hours (on-call):

Outside normal hours (as above), technical staff may be contacted via the hospital switchboard using the radio pager.

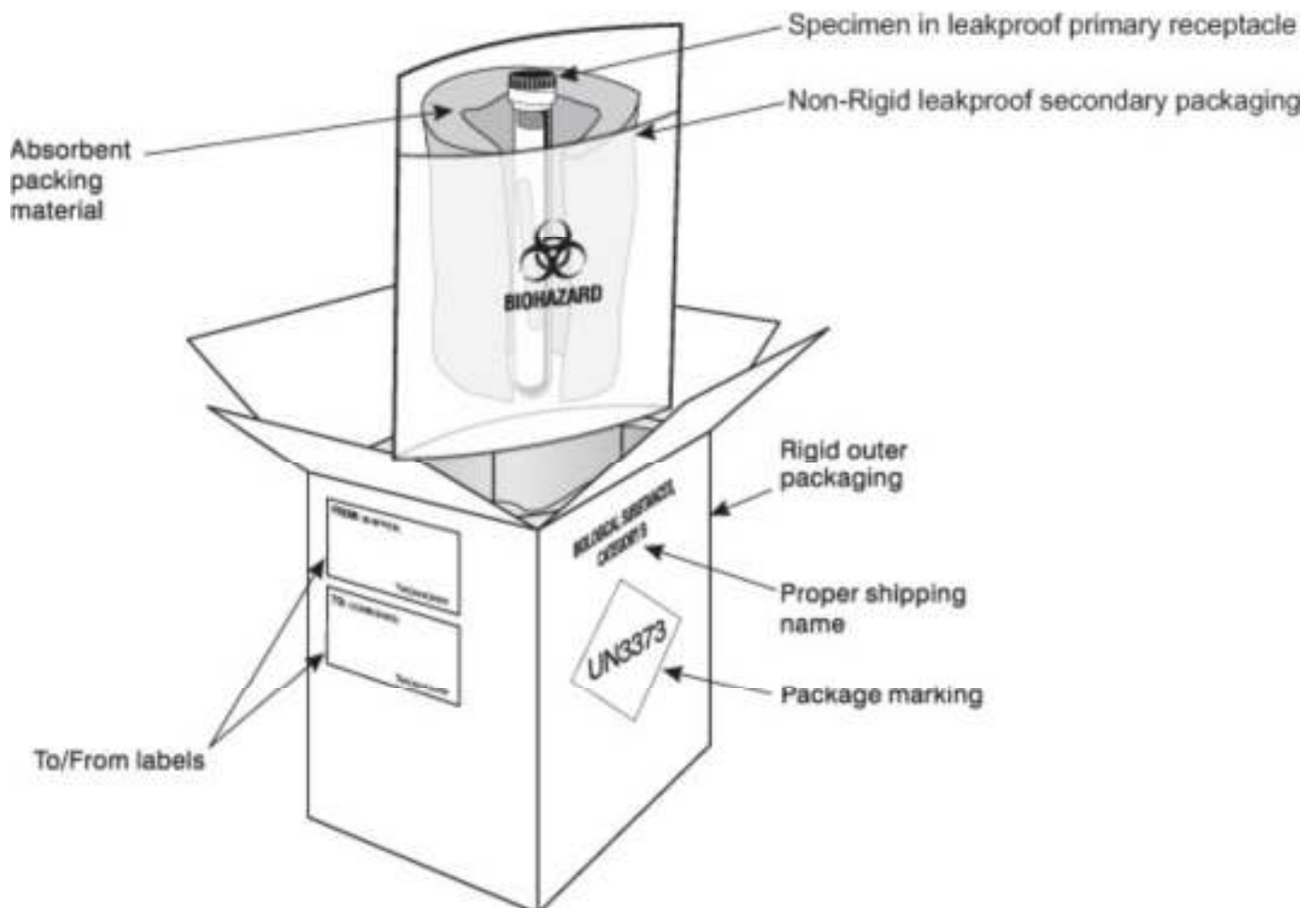
This facility is to cover emergency, clinically urgent or critical work only.

Contact with Consultant Pathologists is also made using this procedure.

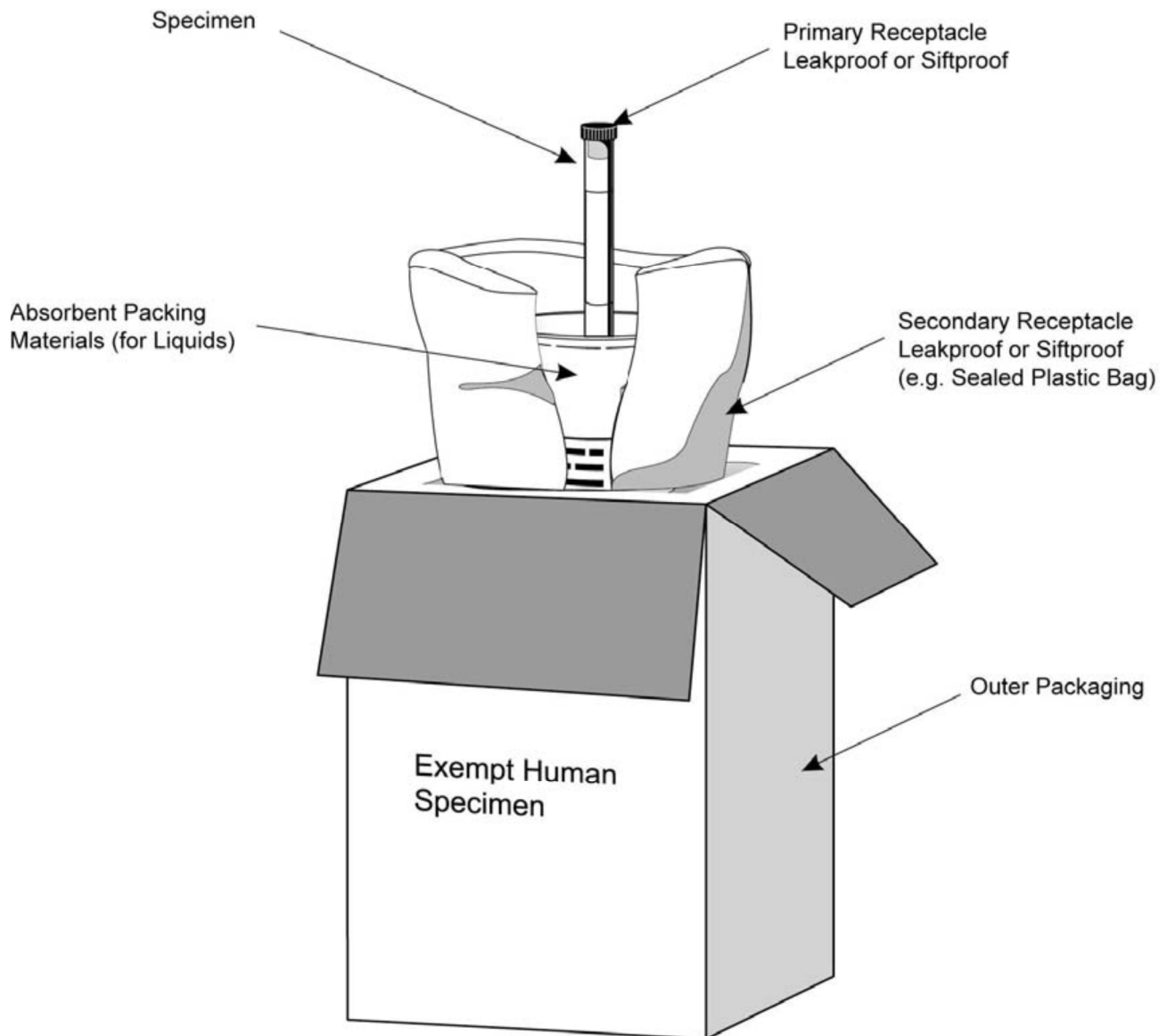
7. TRANSPORT

All specimens must be transported according to UN3373 packaging regulations. The full regulations are available by clicking on this link [UN3373 regulations](#)

'Wet tissue' could be considered as potentially carrying infective agents and should be packed in full compliance with the P650 (UN3373) packaging regulations as depicted in the graphic:



Blocks and slides which have been fixed and processed would be considered as an Exempt patient specimen and could be packaged in accordance with the guidance as depicted in the graphic



- Internal

Specimens must be contained within leak proof containers validated for histology specimen transport. These containers are supplied by the Cellular Pathology department. All fixed specimens must be labelled with a formalin hazard label. A chain of custody form should be completed in theatres documenting the cases and specimens to be transported and the time of specimen collection.

Multiple specimens must be transported in a waterproof, closed, rigid outer container dedicated for this use and validate for the purpose by the user. This outer container must be labelled with the UN3373 biological substances category B diamond and a formalin hazard label. Spillage instructions, including contact telephone numbers for the Cellular Pathology department, must be carried with any fixed specimen.

Specimens must be transported at ambient temperature, without exposure to extremes. i.e. frozen.

Transport containers should be visually checked for damage before each use. Any damage renders them inappropriate for use pending re-validation by user.

8. REFERRAL OF MATERIALS TO UHW

All sections of the department of cellular pathology are happy to receive the referral of tissue organs, samples, blocks and/or slides for specialist opinion, specialist staining or reporting. These materials must be carefully packaged according to current postal packaging regulations P650 (UN3373) [UN3373 regulations](#) when applicable as described on page 12 of this handbook.

Material may be sent via hospital transport, recorded delivery or courier and should be addressed to the relevant Consultant Pathologist.

Post Mortem samples must be addressed to the Neuropathology Laboratory and must be accompanied by the relatives' wishes forms where available. Materials shall be held in compliance of the wishes and will be returned to the referring organisation.

A UHW reference number will be assigned on receipt and this will appear on the report together with the name and reference number of the referring centre

Supplied tissue, blocks and slides and any additional slides prepared, will be returned after reporting.

Requests for the retention of any slides at UHW should be made in writing to the referring pathologist.

Turnaround times for referrals will vary depending on the complexity and nature of the case.

All referrals should be discussed in advance with the appropriate Consultant Pathologist and/or laboratory staff as appropriate please see list of telephone numbers on page 7-8.

9. SPECIMEN CONTAINERS

- 1) Specimen containers are available from the Cellular Pathology Laboratory Reception on request. They vary from 60 ml biopsy pots to large 10l buckets, in exceptional circumstances larger containers may be provided on request. Where buckets are used, labels must be placed on the bucket and its lid but **never** on the lid alone.
- 2) Biopsy pots and slightly larger pots are supplied containing fixative solution, 10% Neutral Buffered Formalin. This fixative is subject to C.O.S.H.H. regulations and care
- 3) **Supplied fixatives must not be diluted or changed in any way.** Special fixation requirements must be discussed with laboratory staff before the biopsy is undertaken.
- 4) Specimens should be placed carefully into appropriate sized containers to allow free movement of the sample. Whenever possible, five times the volume of fixative should be used in relation to the size of the tissue sample. Fixation is compromised by putting large tissue samples into small containers or, by using plastic film to wrap or contain the tissue within the specimen container. This can delay and sometimes compromise, diagnosis.
- 5) Fixative solution is also supplied to main theatres to dispense into larger containers as required. For theatre use at UHL, fixative is delivered to the green porter cabin next to the Pharmacy department by Genta. The key is obtained from the Mortuary. Please note the Mortuary is only staffed in the afternoon.

Specimen Collection

Tissue samples

Prompt fixation is essential for all specimens with the exception of those listed in “*SPECIAL INVESTIGATIONS*” (section 12).

Specimens should be maintained within the temperature range specified for sample collection and handling (room temperature (18-25°C) unless otherwise stated and be transported within an agreed timeframe to preserve the integrity of the specimen. Delays in fixation will impair tissue integrity, jeopardise accurate diagnosis and will result in longer reporting times.

Non-gynaecological cytology specimens.

Collect into Universal containers and send as soon as possible to laboratory.

Direct smearing onto slides may also be appropriate especially when the volume of material is small. Smears made in this way must be placed immediately into alcoholic fixative (available from the laboratories). Smears must be labelled with three points of identification i.e. first name, surname, date of birth and Hospital number **using pencil before smears are made**. Ballpoint pens must **not** be used to label slides.

Ensure that smeared material is on the labelled side of slide.

Fine-needle aspirates

Supplies of slides and ‘spray fix’ are available from the laboratory on request (phone ext. 42710).

Slides should be sent directly to laboratory.

10. FROZEN SECTIONS / URGENT PARAFFIN PROCESSING

Notification should be given to laboratory staff or the consultant’s secretary **24hrs. prior to surgery**, (see telephone list). Details should be entered onto the theatre list for the following day. This will ensure cover from duty Consultant Pathologist. Ad-hoc frozen section cases must be discussed and arrangements made via the duty pathologist before sending to laboratory.

The duty pathologist will only disseminate results to suitable clinicians.

N.B.

- 1) All tissues for frozen section must be sent fresh.**
- 2) High risk specimens should not be sent for frozen section.**
- 3) Under normal circumstances, results will be available within 30 minutes.**

For inter-operative smears see Neuropathology page 25-26

URGENT PARAFFIN SECTION SERVICE

1). In circumstances where an emergency frozen section would be inappropriate, a same-day paraffin section service is offered. This takes approximately four hours from receipt of specimen(s) to the communication of a provisional report.

2). This service will only be undertaken after consultation between laboratory staff and clinicians as to the suitability of this procedure as it is only suitable for small biopsies.

3). Under normal circumstances, specimens should be received before 12 noon.

11. RESULT REPORTING

TURNAROUND TIMES

Appropriate turnaround times for Cellular Pathology requests are predicated by demonstrable clinical need and must not equate to the most rapid turnaround that is possible to achieve.

At present the department is experiencing significant operational pressures which is adversely affecting all specialties. This is multifactorial in reason but includes Covid-19 recovery, absences and staff turnover across all areas of our service. The department has implemented a number of processes to mitigate delays in turnaround times these include, but are not limited to, changes to workflow, extending our working days to 07:00-18:00 Mon-Fri and 07:00-16:00 Sat-Sun and outsourcing as required.

We are currently requesting that if a report is required for an MDT or urgently, we receive three working days' notice to escalate cases. This will ensure that we are able to move the case through the lab and provide a report. Only cases that fall into the above category should be expedited using Enquiries.CellularPathology@wales.nhs.uk

To discuss specific turnaround time concerns please contact the Laboratory Director or Service Manager.

Turnaround times are monitored and recorded and both targets and performance form part of the annual management review.

TATs for Neuropathology specimen referred to external centres for diagnosis see section 3 "Tests Referred to External centres"

RESULT ENQUIRIES

Authorised results are available on the hospital computer system using the Patient Management Results Reporting Module (P.M.S.) and the clinical portal. Velindre staff can look up results on ISCO. General Practitioners can view results on their systems.

If access to a computer is not available during normal working hours, please contact the Cellular Pathology Enquiry email – **enquiries.CellularPathology@wales.nhs.uk**
Outside these hours, please contact the duty Biomedical Scientist (B.M.S.) on-call but only if results are urgent.

Telephoned Results

Due to the possibility of human errors, the reporting of results on the telephone is strictly discouraged for staff other than Clinical Pathologists. Telephoned authorised, completed results will only be given to the Clinicians responsible for the management of the case. Cellular Pathology Consultants may be available to discuss incomplete investigations, to give an indication of when the authorised result is likely to be available.

The recipient of the results will be asked to repeat the results given to ensure accuracy. Telephoned results will be followed by a written report as soon as possible.

A record of verbal reports should be kept including who reported and to whom, when and why it was considered necessary.

E-mail

The UHB E-mail policy does not allow patient identifiable data to be sent via E-mail outside the NHS Wales network. Therefore the department does not E-mail reports to these destinations. Authorised reports are available to UHB users on the Patient Management System; results reporting module, thus e-mail is not required.

12. SPECIAL INVESTIGATION REQUIREMENTS

FETAL PATHOLOGY UNIT

Fetal Pathology undertakes the investigation of non-viable fetus where the fetus gestational age at delivery is less than 24 weeks and where the fetus has shown no evidence of life at delivery.

The laboratory is open for the receipt of specimens Monday to Friday 09:00 – 17:00 (excluding Bank Holidays).

Please call 02921 844025 in advance of sending the fetal material. Out of hours specimens must be refrigerated between 2-8°C and stored until the next working day.

Sample Requirements

Fetus and placenta

Please secure unfixed fetal material in a tightly sealed clear plastic bag. Use a second bag for the placenta if appropriate. Clearly label using an addressograph label or give mother's surname, mother's forename, mother's date of birth and mother's hospital number.

The plastic bag should be sealed in a dedicated tissue sample container with a tightly fitting lid and labelled with the same demographic information. The label must be attached to the side of the container and not the lid.

Documents Required

'Request for Investigation of Fetal, perinatal or infant post mortem examination' form
'Consent to a Hospital post Mortem Examination on a Fetus, Baby or Child'
'Certificate of Medical Practitioner in Respect of Fetal Remains' where appropriate i.e. where disposal is undertaken by FPU staff.

All forms must be fully completed and signatures obtained and witnessed where indicated. Incomplete or incorrectly completed forms will delay examination and thus reporting.

Ensure any personal items to accompany the fetus have been clearly labelled with patient identification.

The laboratory must be informed when a high risk specimen is being sent and the potential hazard to staff should be identified in the clinical history.

These materials must be carefully packaged according to current postal packaging regulations P650 (UN3373) [UN3373 regulations](#) when applicable as described on page 12 of this handbook.

For external referrals and collection, the services of dedicated hospital transport, funeral director or courier should be used for the transfer of fetal material.

The *'Fetal Pathology Unit Tissue Transfer Chain of Custody Form'* must be completed. The referring hospital will complete Part A, the transport driver will complete Part B and

the FPU staff will complete Part C on receipt. The form will be faxed back to the referring hospital to confirm receipt.

Reports will be issued to the referring Consultant.

After examination all fetus are returned to the originating hospital for disposal. The Fetal Pathology unit will contact the referring hospital when the fetus is ready to be returned. Collection is arranged by the referring hospital and the fetus collected from the mortuary, and contacting 44025 on arrival.

There is a monthly hospital cremation service available for internal cases with documented consent. The contract Funeral Directors collect these cases.

Turnaround time for a fetal post mortem examination report is 12 weeks, this is dependent on case complexity and the use of additional investigations, some genetic analysis may take more than 12 weeks.

N.B. This only refers to cases submitted with the correct paperwork.

CYTOPATHOLOGY UNIT

The Cytopathology unit is located in the Cellular Pathology department UHW

The department is open for receipt of specimens and issuing of reports from 8.00am to 5.00pm Monday to Friday.

Please note that specimens should arrive by 4.30pm weekdays to allow time for their preparation.

Turnaround time for in-patients and urgent cases is within 48hrs and for routine cases within 7 working days. The turnaround time may be extended if additional work is necessary in order to provide a more definitive diagnosis.

Senior staff

Dr. T. Hockey	Lead Consultant Pathologist	UHW 41986
Dr. A.Joshi	Consultant Pathologist	UHW 44279
Dr G.Rowlands	Consultant Pathologist	UHW 44049
Dr. M.Varma	Consultant Pathologist	UHW 44273
Mrs S. Norris	Lead Biomedical Scientist	UHW 41897

Cytopathology Clinical Advisory Service

The Consultant Pathologists are available for discussion of individual cases, reports and advice on the interpretation of results via the telephone numbers listed above

Meetings

The department of Cytopathology is happy to participate in clinico-pathological meetings and discuss the cytopathology in cases relevant to current clinical practice and to post graduate education.

The Consultant Pathologist should be given adequate notice of cases to be discussed at any particular meeting. The patients name, unit number and nature of specimen should be provided.

If you have any queries or want advice please contact the department on 41897

Non-Cervical cytology specimens

Non-Cervical cytology is primarily for the detection of benign or malignant neoplasms. Requests for Culture and Sensitivity should be sent direct to microbiology.

Specimens processed include: FNAs from any site, pleural and ascitic fluids, urines, sputum, bronchial washings etc., gastric and oesophageal brushings and washings, bronchial alveolar lavages (BAL) and bronchial washings. For further details see below.

It is essential that unfixed specimens reach the laboratory in the shortest possible time before the cells have chance to degenerate and break down any delay may result in an unreliable assessment of the sample. If specimens cannot be delivered to the laboratory by 5.00pm they must be stored in a refrigerator overnight.

The specimens should be labelled with the following information:

Patient's full name and date of birth
Patient's address
Ward and hospital number

A Non-Cervical Cytology Request form should accompany each specimen. These are available from the cellular pathology laboratory reception or the intra/inter net site

This form must be completed and signed by a Registered Practitioner with his/her full name printed in capital letters. It is important that the request form be completed in its entirety and should include the patient's full name, date of birth, NHS no, address, hospital number if applicable, the name of the referring consultant, ward or practice, the address to which the report should be sent, site/nature of specimen together with brief clinical details and any other information which may be relevant to the investigation. A full interpretation of the specimen depends to a considerable extent on precise clinical information.

The request form and the specimen should be sent to the laboratory in a plastic bag with separate compartments for form and specimen.

Specimen Collection

SPUTUM

PLEASE NOTE:

Sputum samples should be requested by respiratory physicians and only from patients unfit for bronchoscopy.

Ref: Royal College of Pathologist Guidance on 'Histopathology of Limited or no clinical value' December 2005.p4.

The specimen should be a deep cough specimen collected into a plastic universal container first thing in the morning before breakfast and oral hygiene. A minimum of three specimens on consecutive days are required.

BRONCHIAL WASHINGS

Collect in plastic 30ml universal containers, add at least the equivalent of cytolyt and send to the laboratory as soon as possible.

DO NOT ADD CYTOLYT TO BAL's IF A DIFFERENTIAL WHITE CELL COUNT IS REQUESTED AND DO NOT ADD CYTOLYT TO SAMPLES COLLECTED FOR MICROBIOLOGY AND VIROLOGY

BRONCHIAL BRUSHINGS

Use frosted ended slides and label in pencil with the patient's name and hospital number. Make smears and immediately fix in an alcohol fixative (spray fix or wet fix). It is important that the specimen is not allowed to dry out before fixation. The brush should then be placed in a universal container of a preserving agent (cytolyt Solution). Slides, transport boxes and fixative are available from the laboratory.

GASTRIC AND OESOPHAGEAL BRUSHINGS & WASHINGS

Collect specimens into plastic 30ml universal containers of 50% alcohol (obtainable from the laboratory).

SEROUS FLUIDS

Send specimens in plastic 30ml universal containers. A minimum of 50ml (2 full universal container) is required with preferably up to 120ml (up to 4 universal containers), should immunocytochemistry be required.

CSF

PLEASE NOTE:

Cytological examination should only be performed on cases with a suspicion of malignancy, or aseptic meningitis; the possibility of multiple sclerosis is not an indication for CSF. Ref: Royal College of Pathologist Guidance on 'Histopathology of Limited or no clinical value' December 2005.p5.

?Meningitis specimens should be sent to microbiology and biochemistry. However, if Cytology is also required the sample should be divided into three.

Specimens of CSF should be received in the laboratory within an hour of collection and before 16:00 as the cells deteriorate very quickly. Please ring the laboratory on extension 41897/41875 if you intend to take a sample so we are aware that it is being dispatched to us.

CSF samples from patients with suspected CJD should not be sent for cytological analysis.

URINES

Avoid taking early morning and mid-stream samples. Ideally, the sample should be the first part of a voided stream of mid-morning urine.

This should be collected into a 30ml container and sent to the laboratory as quickly as possible to avoid degeneration of the cells.

FINE NEEDLE ASPIRATE SERVICE

PLEASE NOTE:

Fine-needle aspirations (FNAs) should only be undertaken by those skilled in each area.

Breast cyst fluid should only be examined if bloodstained or if there is a residual lump after aspiration.

Ref: Royal College of Pathologist Guidance on 'Histopathology of Limited or no clinical value' December 2005.p5.

Evenly spread rapidly air dried smears are required for breast aspirates, for other types of FNA fixed smears may be required. Please consult the laboratory on extension 41875 before taking the smear. Laboratory staff are happy to assist in the preparation of the smears. We actively encourage the use of this service, as good preparation is vital for final diagnosis.

Plastic transport boxes and frosted ended slides are available from the laboratory.

JOINT FLUIDS

Joint fluids for the detection of crystals can be sent to the laboratory in a plastic 30ml Universal Container. If urgent please telephone the laboratory on 41875/41897. The specimen needs to be brought to the laboratory or podded on pod number 193.

If in doubt about the collection and preparation of any specimens please ring the laboratories. Advice on the collection of these specimens is available from experienced BMS staff in the department by telephone.

NEUROPATHOLOGY

Neurosurgical biopsies

Neurosurgical resection and biopsy specimens for delivery to the laboratory during normal working hours should be submitted to the laboratory fresh.

All neurosurgical specimens delivered out of hours should be fixed in 10% buffered formalin except medulloblastomas. In the case of an out-of-hours medulloblastoma please notify the on-call BMS and submit fresh tissue so that a sample can be snap frozen for genetic analysis.

Temporal arteries should be sent in 10% buffered formalin

Cases requiring frozen section, smear or snap freezing for tissue banking must be submitted fresh. Prior notification is essential to ensure the Neuropathologist is available as there may be occasions when intra-operative diagnostic frozen section/smear service is not available.

Notification can be made to either Neuropathology secretary ext 48421 or Neuropathology ext 45983

UHW Neurosurgical turnaround times are as stated in section 11 above. When diagnosis is undertaken at an external specialist centre see section 3.

For referral of blocks and slides see section 12 below.

Muscle biopsies undertaken at UHW

24 hours' notice is required by the laboratory and the specimen must reach the laboratory before 3pm to ensure that a competency trained BMS is available to prepare the biopsy on receipt.

A muscle biopsy 15x10x5mm should be taken from an affected muscle or in the case of severe disease, the muscle nearest to the affected muscle. The biopsy should be placed onto a piece of glossy, non-absorbent card which should be put into a labelled (see the "labelling of Specimens Submitted to Medical Laboratories" UHB policy) specimen container. This should immediately be sent to the Cellular Pathology laboratory. No fixative or other fluid should be added. A request form and, if possible, a referral / clinic letter containing as much clinical information as possible should accompany the specimen.

Muscle Biopsies undertaken at External Hospitals

If the biopsy is undertaken at an external hospital, the above procedure should be followed. The container holding the biopsy should be placed inside a larger pot containing cold water during transport to UHW **following the packaging instructions on page 12 of this handbook**. Coolant materials may be packed around this outer container but ice must never be allowed to come into contact with the biopsy. Specimens should be sent immediately by taxi/courier and not by hospital transport. Please notify the Neuropathology Section of the specimens' departure and estimated time of arrival at UHW (ext. 45983). Specimens must arrive before 3pm.

Note: The mitochondrial DNA analysis is compromised if the sample cannot be snap frozen within 1 hour of being taken. Thus, in cases of mitochondrial myopathy consideration should be given to referring the patient for biopsy at UHW.

Advice and a printed laboratory procedure are available on request (ext 45983).

Referral centre and Turnaround times – see section 3

Nerve biopsies

24 hours-notice is required by the laboratory and the fresh specimen must reach the laboratory before 3pm to ensure that a competency trained BMS is available to prepare the biopsy on receipt.

A length of (usually sural) nerve, at least 30mm long should be removed and placed in a labelled, dry, sterile, universal container. The nerve should not be folded or wrapped.

Send the fresh specimen promptly to the Cellular Pathology Reception with a completed Cellular Pathology request form. This should contain the time of biopsy and as much clinical information as possible, together with the results of any EMG studies.

If the nerve is coming from an external hospital, please use the system of transport described for muscle biopsies **following the packaging instructions on page 12 of this handbook**.

Post Mortem Brain Referral

Brain specimens should be suspended from the basilar artery in 10% buffered formalin for 3 weeks prior to referral to UHW. In urgent cases, and only following discussion with neuropathologist, earlier referral of the specimen may be possible.

Prior to transportation the formalin should be decanted and the brain placed in a sealed plastic bag. This bagged specimen should be placed in a prelabelled 5 litre bucket, with surrounding absorbent material (restricting the movement of the specimen within the bucket) and a closely fitting lid. This bucket should be placed in a cardboard box or hospital transport box.

All specimens must be transported and labelled according to UN3373 packing regulations. Specimens should be delivered to the Cellular Pathology reception
Delivery address is:

Neuropathology
Department of Cellular Pathology
University Hospital of Wales
Heath Park
Cardiff
CF14 4XW

Specimens must be accompanied by a chain of custody form, a preliminary post mortem report and a copy of the consent form or coroner's disposal instructions.
After analysis brain specimens will be returned to the referring centre for disposal

FRESH (UNFIXED) SAMPLES

Biopsies to be received unfixed include the following:

- a) Rectal suction biopsies for Hirschsprung's disease.
- b) Cardiac biopsies.
- c) Lymph nodes (for the diagnosis of haematological malignancies.)
- d) Paediatric tumours.
- e) Large organs i.e. mastectomy, gastro-intestinal resections, spleens, uteri, kidneys, thyroids, ovarian cysts and amputations.
- f) Muscle biopsies
- g) Nerve biopsies
- h) Brain biopsies (except out-of-hours, see above)
- i) Specimens for frozen section
- j) Specimens for tissue banking

Arrangements to receive unfixed specimens must be made directly with the laboratory

Renal biopsies

A renal biopsy collection service is offered by the department for native and transplant kidneys. The Renal biopsies are collected by competency assessed BMS's by prior arrangement from the following areas;

- Main ultrasound department UHW
- Paediatric ultrasound in Children's Hospital for Wales
- Intensive Care Unit in UHW and Children's Hospital for Wales
- Main Theatre, Theatre in Children's Hospital for Wales, Children's Radiology and wards as required in UHW

Collection of routine renal biopsies is available from 8am-5pm Mon-Fri by contacting the laboratory at UHW (ext. 42710). Twenty-four hours' notice is required for biopsy collection/diagnosis.

Attendance outside of these hours can be arranged with prior notice or by contacting the Duty BMS via the hospital switchboard.

This service ensures liaison between the clinician and BMS with regard to quality and adequacy of the sample/s taken and minimises the impact on the patient from over sampling. The samples are examined under a stereomicroscope by the BMS and assessed for adequacy.

Diagnostic Biopsies	15-18 Glomeruli (minimum)
Long Term Transplant	15-18 Glomeruli (minimum)
Indicated Transplant Biopsy	6-8 Glomeruli

If the sample is very small with limited numbers of glomeruli, dividing it may be detrimental to the diagnosis. The BMS will inform the clinician taking the biopsy to check if EM is necessary or will discuss with the renal pathologist their preference in processing the sample on return to the department.

'Failed' biopsies, when no renal tissue is collected only fat, muscle etc. are processed and reported by the renal pathologist.

Urgent biopsies may be reported on the same day of collection provided collection is completed by 13:00hrs. In exceptional circumstances, biopsies collected later in the afternoon may be reported that evening by prior arrangement with the duty Cellular Pathology Consultant.

Pancreatic biopsies

For information on and collection of pancreatic biopsies during working hours contact the laboratory at UHW (ext. 42710). Twenty-four hours' notice is required for biopsy collection/diagnosis. Urgent biopsies may be reported on the same day of collection provided collection is completed by 13:00hrs. In exceptional circumstances, biopsies collected later in the afternoon may be reported that evening by prior arrangement with the duty Cellular Pathology Consultant. For out-of hours emergencies, contact Duty B.M.S. via hospital switchboard.

Non-emergency samples turnaround time is as per section 11

Cardiac biopsies

Wherever possible, give twenty-four hours' notice of requirement to the laboratory at UHW (ext 42216) and also a confirmatory call the morning of the procedure.

Cardiac biopsies must not be fixed.

Technical staff will attend the Catheter room with appropriate collection equipment.

A completed Cellular Pathology request form must be made available to accompany the biopsies.

Turnaround time is as per section 11

Rectal Suction biopsies (for suspected Hirschsprung's Disease)

Please send promptly and unfixed directly to Cellular Pathology Reception at UHW indicating on universal containers and the request form. Where more than one biopsy has been taken, please record and label with anatomical sites.

Turnaround time is as per section 11

Paediatric Tumours

Tissues must be sent as fresh as possible i.e. unfixed and by prior arrangement with Paediatric Pathologist (UHW ext. 42703). For referral of blocks and slides see section 12 below.

Turnaround times are as per section 11

All Wales Lymphoma Panel Referrals

Fresh specimens should be supplied wherever possible. For external referral, formalin fixed paraffin processed (FFPP) blocks maybe supplied and will be returned via recorded delivery. Referrals should be addresses to:

All Wales Lymphoma Panel
Cellular Pathology

University Hospital of Wales
Heath Park
Cardiff
CF14 4XW

Turnaround time: 85% of cases are reported within 30 calendar days

ELECTRON MICROSCOPY

The Electron Microscopy department is located within Medical Microscopy Sciences on Link Block 5 Room 71 (UHW ext. 42216)

EM undertakes the investigation of a variety of samples using a transmission or a scanning electron microscope. Most samples can be delivered directly to the EM Unit or via cellular pathology reception.

Please give 24hrs notice of requirement to EM staff or as much notice as possible.

Sample Requirements

Most samples must be fixed in 2.5% Glutaraldehyde in phosphate buffer, pH7.2. This fixative can be collected from the EM Unit. Electron Microscopy can be requested on any fresh tissue sent to cellular pathology.

Blood Samples

Blood samples for EM investigation should be collected into tubes containing anticoagulant:

- Vacuettes for adults
- EDTA paediatric blood tubes for children

Blood samples must be delivered to the laboratory before 1500 hours to allow time for EM procedures.

External Referral Guidelines

Electron microscopy welcomes referrals for both transmission and scanning electron microscopy from external users. We offer full technical support ranging from processing samples, analysing and digital photography, to supplying written reports by a senior biomedical scientist experienced in Electron Microscopy. Reports and images are made available using a secure file sharing system.

Detailed referral guidance is available at: <https://cavuhb.nhs.wales/our-services/laboratory-medicine/cellular-pathology/electron-microscopy/electron-microscopy-services-and-referrals/>

Samples should be kept to approximately 1-2mm in size for best preservation of ultrastructure and ideally fixed in 2.5% glutaraldehyde in phosphate buffer (pH 7.2) If this is not possible please fix in neutral buffered formalin and state on the request form.

For detailed information about individual specimen preparation please see the guidance on sending samples safely at: <https://cavuhb.nhs.wales/our-services/laboratory-medicine/cellular-pathology/electron-microscopy/electron-microscopy-services-and-referrals/em-send-sample/>

The specimen should be sent to the unit along with a referral form with all relevant information. A referral form is available at: <https://cavuhb.nhs.wales/files/services/cellular-pathology/request-for-electron-microscopy-referral/>

The laboratory will also accept hospital specific referral forms as long as EM Requested is noted on the referral forms.

Current turnaround times for specimens are 10 working days.

For further guidance, pricing and questions external users are welcome to contact the laboratory on 02920742216 and em.uhw@wales.nhs.uk

IMMUNOCYTOCHEMISTRY

Immunocytochemistry should be requested via the UHW Immunocytochemistry request form and is available on the intranet.

The 'tests' requires the submission of an appropriate number of 'fresh cut' 4um paraffin wax processed sections mounted on adhesive coated slides i.e. Flex slides, dried overnight at 37 ° C or for 1 hour at 60 ° C

DO NOT USE POLY-L-LYSINE COATED SLIDES

LYMPHOMA

FISH for Epstein Barr Virus is available exclusively on request to the Lymphoma panel. Requests are made on the Lymphoma Panel request form

Poly-l-lysine coated slides must not be used

13. UNCERTAINTY OF MEASUREMENT

Uncertainty of measurement is the doubt that exists about the result of any measurement.

The documented departmental approach and estimation of uncertainty of critical measurements, which have a direct or indirect impact on examination results, is available on request.

14. MORTUARY SERVICES

Normal hours of service:

UHW

08:30 – 16:00

UHL (body store)

13:00 -16:00 (Monday, Wednesday, Thursday)

UHW

UHW mortuary staff are available to receive and release the deceased from and to internal and external agencies and to undertake those procedures that require the handling and storage of bodies on UHW premises between the hours of 08:30-13:00 and 14:00-16:00. Hospital and Coroner's post-mortem examinations are undertaken between the hours of 08:30 and 16:00. Deliveries, post mortem examinations and viewings outside these hours must be arranged in advance with the duty Anatomical Pathology Technologist (APT) – if out of hours, via the on call system.

At UHL staff are available to receive and release the deceased from and to funeral directors and within the hospital only between the hours of 13:00 and 16:00.

Viewing the Deceased at the Mortuary

It is advisable to inform relatives that it might not always be possible for the mortuary staff to arrange a viewing and that the funeral home might be a more appropriate environment.

UHW

Viewings can be accommodated between 8.30 and 16.00 contact must be made with the mortuary staff to arrange an appointment before informing the relatives.

To arrange a viewing

- All requests for viewing of the deceased should be made via the mortuary staff on Tel: 029 21844269.
- The mortuary staff will advise relatives if they consider that viewing may be distressing.
- Each viewing will be approximately half an hour.
- Mortuary staff will advise relatives of where to arrive in the hospital and who will meet them.

Viewing the deceased outside core hours

- Viewings can be accommodated but only by prior arrangement with the mortuary staff.

To arrange a viewing

- All requests to view should be made via switchboard to the On Call APT
- The On Call APT will advise relatives where to arrive in the hospital.
- Mortuary staff will escort relatives to the viewing room. They will either offer to stay or allow the relatives privacy as required.

UHL

Viewings at UHL can be accommodated between 13:00 and 16.00 Monday, Wednesday and Thursday. Contact must be made with the mortuary staff at either UHW or UHL to arrange an appointment **before** informing the relatives. Outside of these hours the Site Practitioner at UHL will arrange and undertake all viewing out of normal hours. The site Practitioner can be contacted via switchboard.

To arrange a viewing

- All requests for viewing of the deceased should be made via the mortuary staff on Tel: 029 21825314 (UHL) or 029 21844269 (UHW)
- The mortuary staff will advise relatives if they consider that viewing may be distressing.
- Each viewing will be approximately half an hour.
- Mortuary staff will advise relatives of where to arrive in the hospital and who will meet them.

Viewing the deceased outside core hours

Out of hours viewings by Mortuary staff are not possible at UHL. Outside of these hours the Site Practitioner at UHL will arrange and undertake all viewing out of normal hours. The site Practitioner can be contacted via switchboard.

Coronial / Police Post mortem Examination

Coronial /Police identification

Identification of the deceased for HM Coroner/Police is arranged directly with the mortuary departments and “on call APT”

Consent post mortems

Before a post mortem, can be undertaken without coronial jurisdiction, consent must be obtained from a qualifying person. The qualifying person must be able to give appropriate and valid consent. The person taking consent must have undertaken appropriate training and understand the obligations of the Human Tissue Act 2004.

Consent taken by untrained individuals will be deemed invalid and post mortem examination will not be undertaken. Access to the training package is available from the following link:



Adult Consent
Training Package.ppt

Procedure

- 1: Ensure that it is possible to issue a medical certificate of cause of death that is acceptable to the registrar of births and deaths; if the death is referred to the coroner it is possible to request a post-mortem if the coroner has decided he or she does not require post-mortem and has issued for Form A to enable death certification to take place.
- 2: The case should be discussed with the duty pathologist to ensure the request is appropriate and to determine if a limited post-mortem might achieve the aims, if it will be helpful to retain an organ and to determine when the examination can take place. The Bereavement office and cellular pathology department will have a roster of duty pathologists
- 3: Complete a post-mortem request form.
- 4: Identify an appropriate person from whom consent can be taken (nominated representative; or an individual in an appropriate qualifying relationship)
- 5: It is UHB policy that only a registered medical practitioner, nurse or midwife who has been trained to take consent for a post mortem may take such consent. The individual taking consent must have received training in the past 3 years. Or the individual must undergo "Lean" training. Access to the training package is available from the Designated Individual, Person Designate or bereavement lead nurse).
- 6: Make arrangements to take consent for the post-mortem- the bereavement office may assist with this. Consider requesting the attendance of a pathologist and the bereavement officer as appropriate. Arrange consultation: this can usually take place in the quiet room in the bereavement suite or should be in other suitable surroundings.
- 7: Ensure person giving consent has access to 'guide to the post-mortem on an adult' in good time before the consultation. Appropriate translation services can be made using the C&V UHB Internal Translation Unit or by making use of the External Welsh Language Translation Service, Bilingual Cardiff.
- 8: In exceptional circumstances taking consent over the telephone is satisfactory provided that the consultation is witnessed over speakerphone by a bereavement nurse or other professional. The consent form is appropriately annotated and the individual giving consent has access to the 'guide to the post-mortem on an adult'. This may be e-mailed or faxed.
- 9: Complete and annotate the "post mortem consent check list", place in medical notes.
- 10: The completed consent form, request form and medical notes should be delivered to the pathologist undertaking the post-mortem as soon as reasonably practicable.

Post Mortem Results

The clinician(s) may discuss informally Post Mortem findings on the day of the autopsy. Should the referring Clinician wish to be present at the Post Mortem examination, arrangements should be made via Cellular Pathology offices. (UHW 41601). Clinicians should acquaint themselves with local safety rules within the mortuaries.

Clinicians are reminded that written autopsy reports are not issued in those Coroner's cases at which an inquest is expected, and that any enquiries should be directed to the Coroner's Office.

Reporting times:

6 – 9 weeks for uncomplicated hospital port mortems.