Manchester University
NHS Foundation Trust

Laboratory Medicine

OPHTHALMIC PATHOLOGY USER GUIDE

Cellular Pathology

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1 INTRODUCTION

The Ophthalmic Pathology Service forms part of the Adult Histopathology department (ORC Oxford Road Campus) and provides a diagnostic service in Ophthalmic Histopathology and Cytopathology. It is one of four laboratories within England that make up the National Specialist Ophthalmic Pathology Service (NSOPS).

NSOPS laboratories are designated Highly Specialised Services and are centrally funded by NHS England. This means that NHS cases submitted to NSOPS laboratories for examination are seen without charge to the referring clinician for patients in England.

The laboratory aims to provide a high quality and efficient service with provision of expertise in diagnosis using a range of techniques including histology, cytology, immunofluorescence, immunohistochemistry, and electron microscopy as appropriate.

The NSOPS team consists of two Consultant Histopathologists (one full-time and one part-time), a Lead Biomedical Scientist in Ophthalmic Pathology and a PA.

This user guide has been developed to meet the needs and requirements of our users, and includes useful information, guidance and advice to enable you to make the most efficient use of our service.

2 CONTACT US (7.2.2 a)

Ophthalmic pathology forms part of Adult Histopathology, Clinical Sciences Building 1(CSB1)

2.1. POSTAL ADDRESS (7.2.2 a)

For correspondence and specimens:
Ophthalmic Pathology Service (NSOPS)
1st floor Clinical sciences building 1
Manchester University NHS Foundation Trust
Oxford Road
Manchester
M13 9WL

2.2. LABORATORY OPENING TIMES (7.2.2 a)

07.00 – 17.00 hours
Monday - Friday, excluding Public/Bank Holidays (England)
We do not have an on-call service.

2.3. KEY CONTACTS (7.2.2 a)

General Enquiries:

Specimen Reception:
(Inc. Frozen section requests)
Tel: 0161 276 8808

Histology Reports:
Tel: 0161 701 1615
Email: mft.adult.histosecs@nhs.net

Technical Enquiries:
Miss Anna McEwen
Lead BMS Ophthalmic pathology
Tel: 0161 276 5806
Email: anna.mcewen@mft.nhs.uk

Clinical Enquiries:

Dr Luciane Irion
Consultant Ophthalmic Pathologist
Tel: 0161 701 1614
Email: luciane.irion@mft.nhs.uk

3. QUALITY (5.4.2, 5.5)

Our Cellular Pathology Service across all sites is fully accredited by UKAS in conformance with ISO 15189:2022. Our UKAS Medical Laboratory Reference Number is 8648. The department participates in regular exhaustive assessments to maintain its accreditation status. The department is licensed by the Human Tissue Authority (HTA). The department is committed to deliver a quality service to our users and continual improvement. A quality management system is utilised to ensure all documents, processes, quality records and clinical material are controlled to DLM (Division of Laboratory Medicine) policy. Processes and systems are regularly audited to identify non-conformities and quality improvements.

For further information regarding quality, including technical EQA schemes that the department participates in please see the Adult Histopathology User guide via https://mft.nhs.uk/the-trust/other-departments/laboratory-medicine/histopathology/

4. REQUESTING OF INVESTIGATIONS (7.2.4.4)

The Division of Laboratory Medicine (DLM) guidelines for specimen acceptance must be followed to ensure that all samples are correctly and unambiguously identified. The policy provides an overarching process to specimen rejection to help balance the requirement to process against the risk to patient safety. Clinical governance issues may arise from errors in specimen identification and/or insufficient clinical information being given with a specimen. To ensure that specimens are linked to the correct patient, adequate identifiers are essential. Due to the difficulty in repeating a tissue specimen, different criteria are used in Adult Histopathology.

All urgent and specimens on a cancer tracking pathway/diagnostic for malignancy (HSC205) should be clearly labelled as such. The date and time the specimen was taken is important information that should be included on all requests to determine the length of fixation of the tissue specimen.

4.1 SPECIMEN ACCEPTANCE POLICY (7.2.6.2)

All Ophthalmic specimens sent for histology and /or cytology **must** comply with our specimen acceptance requirements. If the correct information is not present then the specimen may be unnecessarily delayed.

- All test requests ordered on the HIVE Electronic Patient Record (EPR) system must have a request form print out submitted with the sample.
- For non- HIVE requests or paper requests raised during HIVE down time see acceptance criteria below.

The following mandatory information must be provided for us to accept the specimen:

Essential Patient Identifiers:

- **Surname**
- **Forename**
- **Unique identification number** – NHS number, MRN number, external reference
- **Date of birth**
- **Address**

Essential Clinical Details:

- **High risk status** – to ensure health and safety of all staff
- **Specimen site** – must match on specimen pot and request card
- **Relevant clinical information**
- **Reconstruction date if urgent processing required**
- **Date/time taken** – essential to ensure proper fixation of high risk specimens

Essential Sender Details:

- **Ward/department** – required for return of reports
- **Consultant or GP** – required for return of reports and contact in case of any errors/discrepancies
- **Contact number/bleep** – for verbal reports, and frozen section

N.B The only exception to the above policy is donor cornea samples from an Eyebank. When these are sent for investigations for quality assurance purposes only we do not require all the information above. In these circumstances the unique donor number, donation number and D.O.B will be accepted.

Each specimen container, no matter how small, must also be labelled with the appropriate patient identification data (minimum of 3 identifiers e.g. first and last name, date of birth/age, gender and preferably patient's NHS/MRN No). The information must be consistent with the request form, to prevent errors in specimen and patient identification. Multiple specimens from the same patient should also identify the specimen type/site. HIVE generates histology labels for both the requisition form and each sample pot each pot. Please ensure the correct label is

attached to the correct container. HIVE labels must be attached to the specimen container and not to the lid of the container.

Unlike some of the other pathology disciplines, Ophthalmic Pathology still require a request form for all specimens requested on HIVE.

ALL SAMPLES FOR OPHTHALMIC PATHOLOGY MUST BE ORDERED ON HIVE USING OPHTHALMIC PATHOLOGY OR ADULT HISTOLOGY SELECTION AND NOT PAEDIATRIC HISTOLOGY OR CYTOLOGY.

Specimens that do not contain the required information or have discrepancies between the request card and specimen pot will not be processed in the laboratory until the necessary information has been obtained. The sender will be contacted to attend the laboratory to complete any missing information or correct any mistakes. The person correcting the patient or specimen details should be of appropriate seniority and able to take responsibility for the labelling of the specimen. This will result in a delay to specimen processing and reporting.

For some external users we will accept corrections to patient detail discrepancies via email.

4.1.1 PATIENT CONSENT (4.3 f, 7.2.4.3)

Prior to submitting a sample for testing, consent must be obtained from the patient. If specimens are received from another trust, it is the responsibility of the referring Trust to ensure that patient consent for testing is in place, please be aware that evidence of consent may be required prior to sample testing.

4.2 SPECIMEN STORAGE (7.2.7)

Prior to transport to the laboratory, it may be necessary to temporarily store specimens. All specimens that are placed into Formalin should be kept at room temperature until transported to the laboratory. Specimens in Formalin should not be placed into the fridge as this will have a negative impact on fixation and therefore preservation of the tissue.

Specimen	Storage
Formalin	Room temperature
Dry/unfixed	Fridge
Transport medium eg Zeus	Fridge

Dry/unfixed samples such as Vitreous/aqueous specimens and frozen sections must be brought immediately to the Adult histology specimen reception urgently.

Specimens for immunofluorescence that are in transport medium such as zeus or Michel's medium must be brought to the department as soon as possible but it will not be an issue if they are received 1-2 days after being taken.

4.5 TRANSPORT OF SPECIMENS (7.2.5)

All specimens should be transported in the relevant fixative or transport medium. All specimen pots should be tightly sealed and transported using specimen bags, where appropriate. The request card/HIVE request should be placed in the pocket of the specimen bag, and the pot inside the sealed bag to ensure the safety of all staff.

Specimens can be delivered to the Adult histopathology specimen reception throughout the day.

If a porter brings specimens from MFT theatres and clinics from internal departments samples will be signed for. For samples from external users any confirmation of receipt forms will be filled in and faxed back.

Please can all HSC and urgent specimens be clearly labelled as such to ensure that they are dealt with in the appropriate manner. This is particularly important for temporal arteries and specimens requiring urgent processing for delayed reconstruction.

All specimens sent in the post should adhere to the packaging guidance available on the Royal Mail website. It is the responsibility of the sender to ensure that specimens are appropriately labelled and packaged.

4.6 REQUESTING FORMALIN POTS/TRANSPORT MEDIUM (7.2.4.4)

Any requests for formalin pots or zeus for immunofluorescence specimens should be made to Adult histopathology specimen reception on 0161 276 8808 (68808 internal).

4.7 FORMALIN SPILLAGES

Formalin should be handled with care and sent in appropriately sized containers with secure lids to minimise the risk of a spillage. Specimen pots should be secured in a sealable plastic specimen bag.

Each sender who handles formalin should have their own policy or procedure and equipment for handling formalin and dealing with a spill,and should have sourced from a reputable supplier. Spillages should be dealt with as soon as it safe to do so. Salvage of any specimen should be of the highest importance as it is likely to not be repeatable. Specimens must not be discarded.

The sender must inform the laboratory of any spillage where the specimen may have been lost, partially lost or its integrity compromised. This should be reported as an incident and the sending clinician should be informed as soon as possible.

In the event of a spillage please follow local spillage protocols. The Histology laboratory can be contacted for advice Mon-Fri 07:00-17:00 on 0161 276 8806

Our formalin supplier, CellSolv, has issued the following guidance on spillages.
Spillage volumes:

- Minor spillages (up to 200ml) – usually can be dealt with by 1 or 2 staff using simple procedures
- Large spillages (200ml - 5 litres) – require the use of a formaldehyde spillage kit
- Major Spillages (over 5 litres) – should be dealt with by Fire Service

For more information on Formalin and spillages please see the Adult Histopathology User guide via https://mft.nhs.uk/the-trust/other-departments/laboratory-medicine/histopathology/

5. SPECIMEN REQUIREMENTS (7.2.2, 7.2.4.4)

The NSOPS service examines specimens either diagnostic or excisional, of any tissue from the eye or its adnexal structures. Specimens for cytological investigations are also accepted which include surface impression cytology and cytology of fluid such as tears, aqueous, vitreous, or fluid from cystic lesions.

Guidance on which specimens should be submitted for examination may be found at:

Ophthalmic-Pathology.pdf (rcophth.ac.uk)

Some specimens may be referred to other departments/centres for expert opinion or for techniques not performed here such as PCR (on tissue sections), molecular studies, and impression cytology. For a list of our main referral centres see section 7.

The department does not arrange or provide any other pathology services e.g microbiology, or fresh virology samples. If these investigations are required, the requesting clinician must submit a separate specimen to an appropriate service.
It is not possible for this laboratory to split a specimen under sterile conditions.

5.1 HIGH RISK SPECIMENS/DANGER OF INFECTION (7.2.2, 7.2.4.2)

It is the responsibility of the requesting clinician to indicate on the request card if the patient is known or suspected to be within a “High Risk/Danger of Infection” category eg HIV, TB, Hepatitis B, Hepatitis C, (this list is not exhaustive) to facilitate appropriate handling. These specimens need to be formalin fixed for a longer period of time to ensure the health and safety of the staff.

Frozen sections (including specimens for immunofluorescence) will NOT be carried out on high risk specimens.

5.2 ROUTINE HISTOPATHOLOGY (7.2.2, 7.2.4.4)

Specimens for routine histological investigation are required to be placed into 10% neutral buffered Formalin, which is available on request from the laboratory. Formalin is used to fix the specimen and preserve the tissue in as life-like state as possible. If there is a delay between the removal of the tissue and fixation in Formalin, this can adversely impact the specimen integrity and therefore report. **NB:** In cases where sebaceous carcinoma is suspected specimens should still be submitted in formalin.

The choice of methodology and appropriateness of the investigation are at the discretion of the consultant pathologist who is guided by details on the clinical request form and knowledge of laboratory methods and current "best practice". Ophthalmologists are free to discuss the methods employed for any given specimen, but the final decision remains the remit of the Consultant Pathologist.

5.2.1 URGENT PARAFFIN PROCESSING (7.2.2, 7.2.4.4)

In urgent MFT cases (often eyelid tumour surgery where a lesion is being excised, and subsequent reconstruction depends on knowledge of whether the margins are tumour free) an urgent paraffin processing service is available.

Ensure the proposed date of reconstruction is on the HIVE request form and order as an urgent request. Ensure any sutures have been described and the orientation stated on the HIVE request also to avoid delays in processing.

Deliver the specimen to the laboratory as soon as possible after surgery.

We will process as urgently as is possible and ensure that a report is available for the reconstruction date wherever possible.

Please email the Ophthalmic team in advance if possible so they are aware to expect the specimens and to ensure there is someone available to report.

5.2.2 FROZEN SECTIONS (7.2.4.4, 7.2.5)

Unfixed histology specimens may be sent for frozen section if other forms of rapid diagnosis are not appropriate. **Please note frozen sections cannot be performed on samples received in formalin or saline**. This service is only available to MFT ophthalmologists. Every attempt will be made to provide a frozen section service during working hours. Users are requested to adhere to the following requisites:

Requests for frozen sections should be booked 24 hours in advance wherever possible. Bookings can be made by contacting the Laboratory on **0161 276 8808**. Patient information, clinical information, Clinician's name and the theatre number where the surgery will be taking place will be required at this time.

Frozen sections WILL NOT be undertaken on high-risk specimens. Such information MUST be disclosed to the Laboratory and included on the request card.

The sample MUST be accompanied by a completed request card/HIVE request which must clearly indicate the contact number and name of the person to whom the result is to be conveyed.

Before sending the sample ring **68808** to warn the laboratory it is on the way.

Samples for frozen sections should be transported to the Laboratory in an appropriately labelled dry pot and handed directly to the technical staff as quickly as possible and arrive before 4.30pm.

5.2.3 IMMUNOFLUORESENCE (7.2.2, 7.2.4.4)

Conjunctival biopsies sent for investigations into possible Ocular Mucous Membrane Pemphigoid for immunofluorescence need to be labelled clearly as such on HIVE . One biopsy should be taken from the lesion and placed in formalin to rule out malignancy. Another biopsy should be taken from an area adjacent to or away from the lesion and this should be placed in Zeus transport medium or Michel's medium if Zeus is unavailable. It is extremely important that this specimen is NOT placed in formalin as the technique cannot be carried out on fixed tissue. The sample in transport medium must also be labelled fully with relevant patient identification details.
These samples need to be sent to the laboratory as soon as possible. If they cannot be sent by 5pm please ensure they are delivered first thing the next morning.

Immunofluorescence is not available on high risk specimens.

5.3 CYTOLOGY INVESTIGATIONS (7.2.2, 7.2.4.4)

Cytology is the investigation of small samples of dispersed or dissociated cells and other tissue components devoid of natural tissue architecture.

Specimens for cytological investigations include surface impression cytology and cytology of fluid such as tears, aqueous, vitreous, or fluid from cystic lesions.

Cytological investigation provides a preliminary diagnostic impression and should not be regarded as providing a definitive diagnosis. If there is uncertainty about its use in a particular case, it is preferable to discuss the case with the consultant pathologist prior to obtaining the specimen.

5.3.1 VITRECTOMY SPECIMENS (7.2.2, 7.2.4.4)

Please contact the laboratory prior to sending vitrectomy specimens. We prefer to receive a formal pars plana vitrectomy in a cassette or bag. If samples are required for microbiology, virology or PCR please ensure separate samples are taken and they are sent to the appropriate department. Samples from MFT should be sent fresh immediately to the laboratory. Fresh samples should be delivered by 2pm. Samples taken on a Friday afternoon can be fixed in an equal volume of 10% neutral buffered formalin. Samples from external hospitals sent by post should be fixed in an equal volume of 10% neutral buffered formalin.

Small volume cytology specimens: The syringe used in the collection of the sample may be submitted with the fluid inside. **Needles must be removed and the syringe capped.** MFT specimen should be sent fresh as soon as taken. Samples taken on a Friday afternoon should be fixed using an equal volume of 10% formalin drawn up into the same syringe. Indication should be made on the request form as to whether the specimen is fixed or not.

Please do not send unfixed specimens from external hospitals unless by same day courier.

If microbiological investigation is required, the requesting clinician must submit a separate specimen to an appropriate microbiology service. It is not possible for this laboratory to split a specimen under sterile conditions.

5.3.2 IMPRESSION CYTOLOGY (7.2.2, 7.2.4.4, 6.8.2)

These samples should be submitted in a pot containing formalin in a manner similar to histology specimens. These samples will be referred by us to the NSOPS service within the UCL Institute of Ophthalmology London.

6. SAMPLES FROM OUTSIDE ENGLAND/PRIVATE PATIENTS (7.2.2, 7.2.3)

The department is happy to accept specimens or second opinion referral cases from users outside of England or Private Clinics. For these specimens a charge will be made to the referring clinician/hospital.

For information about our charges please contact Anna McEwen anna.mcewen@mft.nhs.uk

7. RESEARCH (7.2.2)

The ophthalmic pathology department is happy to actively support researchers.

Cellular pathology research offers the following services:

- Processing, paraffin embedding and sectioning of fixed tissue
- Electron microscopy (subject to requirements)
- Frozen sectioning of fresh tissue samples
- Immunohistochemistry (IHC) including single and dual staining
- Antibody optimisation for IHC
- Chromogenic in-situ hybridisation (CISH)
- Silver in-situ hybridisation (SISH)
- Standard H&E and special staining techniques
- Pathological review

Please contact the department if you wish to discuss a project.

8. TRAINING (7.2.2)

Both ophthalmologists and histopathologists are welcome to spend time in the department if they wish to learn about ophthalmic pathology, either in preparation for examinations or to develop a subspecialist interest.

Please contact the laboratory if you wish to arrange a training placement.

9. REFERRAL CENTRES (6.8.2)

Below is a list of the departments we refer work to:

NSOPS, Department of Eye Pathology
UCL Institute of Ophthalmology
11-43 Bath Street
London
EC1V 9EL

NSOPS, Department of Histopathology
E-Floor
Royal Hallamshire Hospital
Glossop Road
Sheffield
S10 2JF

NSOPS
Level 3 CSSB
Royal Liverpool Hospital
Liverpool University Hospitals NHS Foundation Trust
Mount Vernon Street
Liverpool
Merseyside
L7 8YE

The Christie NHS Foundation Trust
Department of Histopathology
Wilmslow Road
Manchester
M20 4BX

10. COMMUNICATION OF RESULTS (7.4.1)

The department aims to provide a timely as well as a high-quality service. Reports will be available on HIVE (within MFT) once they have been authorised by the Consultant Pathologist.

Typed reports will also be available when all necessary tests have been completed, reviewed and authorised by a Consultant Pathologist. Paper copies of reports will be posted to external users or can be emailed to a secure NHS.net account. Verbal reports or clinical discussions can only be provided to qualified medical staff by Consultant Pathologists. All report enquiries should be directed to the secretarial office in the first instance. The scientific staff in the laboratory cannot give out any information regarding results/reports.

Histology Reports

Telephone	**0161 701 1615**
Email	mft.adult.histosecs@nhs.net

Users are requested to check if final reports are available on HIVE, in hospital notes, clinics or wards before making enquiries. Please note that clerical staff will not give report details over the telephone, but on request, authorised reports can be emailed to NHS.net addresses.

Advice to clinicians is readily available at all stages of the diagnostic process, from deciding what material to submit for examination to guidance on interpretation of the final report. Please feel free to contact the consultant pathologist or the Lead BMS with any queries.

10.1 TURNAROUND TIMES (7.2.2)

Ophthalmic Pathology works to RCPath Key Performance Indicators (KPI). The target is to report 80% of diagnostic biopsy cases within 7 days, and 90% of all specimens within 10 days (except those requiring decalcification). Workload figures and turnaround times are reported to NHS England regularly.

Reporting times for all specimens, including urgent and HSC205, may be extended if they are high risk specimens, large resection specimens or calcified or bony samples. Any case requiring specialist techniques such as immunohistochemistry or electron microscopy will also likely have extended reporting times. Some cases may require referral to a specialist referral centre, which can prolong reporting times. However, a preliminary report would be issued beforehand. An appropriate frozen section request will aim to be reported by telephone within 60 minutes. Frozen sections should normally be booked with the laboratory beforehand.

11. ENQUIRIES AND COMPLAINTS (7.7)

It is our aim to continually provide, maintain and improve the services of our department so that they most suit the needs and requirements of our users and benefit patient care.

Feedback questionnaires are issued regularly but, in the meantime, we appreciate any comments or suggestions that you consider would improve the quality of services provided. Feedback can be given using any of the contact details above.

The department is committed to fully investigating all complaints regarding the standard and quality of services that we offer. Please contact Lead BMS or Cellular Pathology Manager and we will deal with your complaint as soon as possible.

Lead BMS Ophthalmic Pathology		
Anna McEwen	0161 276 5806	anna.mcewen@mft.nhs.uk

Lead Healthcare Scientist Histopathology		
Katherine Congdon	0161 276 6138	Katherine.congdon@mft.nhs.uk