

CELLULAR PATHOLOGY USERGUIDE

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GENERAL INFORMATION

Introduction

The Department of Pathology is part of Diagnostics, Cancer and Buckland Care Group of the East Kent Hospital University NHS Foundation Trust (EKHUFT). The Trust provides services to a population of over 750,000 from its three main hospital sites and two community Hospitals.

The hospitals covered by the Trust are:

- Buckland Hospital (B / land), Coombe Valley Road, Dover, Kent, CT1 3LP Tel: 01304 201624
- Kent and Canterbury Hospital (K&CH), Ethelbert Road, Canterbury, Kent, CT1 3NG Tel:01227 766877
- Queen Elizabeth the Queen Mother Hospital (QEQMH), St Peters Road, Margate, Kent, CT9 4AN Tel: 01843 225544
- Royal Victoria Hospital (RVH) Radnor Park Avenue, Folkestone, Kent, CT19 5BN Tel: 01303 850202
- William Harvey Hospital (WHH), Kennington Road, Willesborough, Ashford, Kent, TN240LZ Tel: 01233 633331

The Discipline of Cellular Pathology is centralised on a single site at the William Harvey Hospital, Ashford. It provides diagnostic Histopathology, Cytopathology and Andrology. Our Cellular Pathology laboratory is UKAS ISO 15189; 2012 accredited certificate. Tests listed on our current scope of practice can be found on the UKAS website <https://www.ukas.com/> or <http://www.ekhufft.nhs.uk/pathology/>. Cellular Pathology has 12 consultant pathologists and a total staffing of 13 whole time equivalents.

CLINICAL SERVICES PROVIDED**Services provided:**

- Breast pathology
- Endocrine pathology
- Genitourinary pathology
- Gynaecological histopathology
- Head and neck pathology
- Haematopathology
- Oral pathology
- Respiratory and chest pathology
- Skin pathology
- Upper and lower gastrointestinal pathology, including liver
- Non-gynaecological cytology samples
- Andrology (Vasectomy and Sub fertility)
- Immunohistochemistry
- Immunofluorescence
- Videoconferencing
- Digital macro and microphotography
- The examination of fetal material, retained products and placentas
- Post mortem examination (WHH and QEQMH)

Type of test available:

- Routine diagnostic histopathology
- Rapid frozen section
- Rapid processing for urgent histopathology
- Immunofluorescence for skin and oral mucosa
- Lymph node analysis
- Mohs section
- Muscle biopsies – These are sent for neuropathological opinion. Please contact the Department of Neuropathology at King's College Hospital directly. Please see p13.
- Thyroid rapid on site evaluation (ROSE) clinic

LOCATION

Cellular Pathology laboratory

William Harvey Hospital, Kennington Road, Ashford, Kent, TN23 0LZ Tel no: 01233 616016

OPENING HOURS

Histology	Monday- Friday	08:00 – 18:00
Cytology	Monday – Thursday	08:00 - 16:00
	Friday	08:00 - 17:00

OUT OF HOURS

The laboratory is not open outside of normal hours. There is an on call BMS for technical issues out of hours, available out of hours via the hospital switchboard, but clinical advice from a consultant pathologist is not available out of hours. The on call BMS can be contacted via the switchboard to give immediate out of hour's advice. The switchboard also holds the contact numbers of key staff.

PROTECTION OF PERSONAL INFORMATION

Cellular Pathology complies with EKHUFT's policy on protection of personal information.

Patients' health information is protected within the department through a number of measures:

- All staff, contractors and volunteers are at all times fully aware of their responsibilities regarding confidentiality
- Patient information is recorded accurately and consistently
- Patient information is kept confidential
- Patient information is kept physically secure
- Care is taken over the disclosure and use of information
- Measures are taken to ensure that disclosure of information passed outside the Trust is in accordance with the Caldecott Principles and the Data Protection Act 1998.

COMMENTS, COMPLIMENTS & COMPLAINTS

EKHUFT Cellular Pathology service is committed to offering high quality specialist service that meets and responds to the needs of all service users. If you are not happy with any aspect of our service then please do let us know. Alternatively if there is something we have done well we would be grateful for your feedback. There are several ways that you can raise a compliment, complaint or concern:

- I. Contact the laboratory directly between 08:00-16:00 Mon – Fri by:
Telephone the Laboratory - 01233 616016
Ask to speak to the HoS, Head BMS or Chief biomedical scientist.

Write to the Laboratory at:

Head of Service
East Kent Cellular Pathology Laboratory
William Harvey Hospital
Kennington Road

Ashford
Kent
TN24 0LZ

- I. Contact the Patient Advice and Liaison Service (PALS)
Phone: 01227 783145 9:00am to 4:00pm, every Monday to Friday (excluding bank holidays, please leave a voicemail if we are busy or closed

Or via e-mail: ekh-tr.PALS@nhs.net

Write to:
PALS
First Floor, Trust Offices
Kent and Canterbury Hospital
Ethelbert Road
Canterbury
CT1 3NG

CONTACTS AND KEY PERSONNEL

The main hospital switchboard number is: 01233 633331

If calling from outside the hospital, dial the main switchboard number and then once prompted add the appropriate extension number as below.

If calling from within the hospital then dial the extension number directly.

Name	Role	Contact details
Dr Nicola Chaston	Associate Medical Director	01233 616015 (Ext: 723-6015)
Dr Doraline Phillips	Head of Service (HoS)	01233 616604 (Ext:723-6604)
Kareem Aboualfa	Designated Individual (DI)	01233 618058 (Ext: 723-8058)
Stuart Turner	Head Biomedical Scientist (HBMS)	01233 616129 (Ext: 723-6129)
Joana Vara	Chief Biomedical Scientist, Histology	01233 616253 (Ext:723-6253)
Shirley Moses	Lead Biomedical Scientist, Cytology	01233 651857 (Ext: 723-1857)
Sophie Coales	Quality Officer Cellular Pathology and Mortuary	01233 616253 (Ext: 723-6253)
	Cellular Pathology Enquires	01233 616016 (Ext: 723-6016)
	MDM Co-ordinator	723-4136
	Andrology	01233 616145 (Ext: 723-6145)
Marcus Coales	Pathology General Manager	01233 616232 (Ext: 723-6232)
Patrick Ruffle	Pathology Deputy Manager	01233 618066 (Ext: 723-8066)
Naomi Rogers	Head of Quality, Governance and Risk Management	01233 616288 (Ext:723-6288)

Name	Role	Phone number
Dr Nicola Chaston	Consultant Pathologist	723-6015
Dr Doraline Phillips	HoS and Consultant Pathologist	723-6604
Dr Aminu Abdulkadir	Consultant Pathologist	723-6184
Dr Kareem Aboualfa	Consultant Pathologist and HTA DI	723-8058
Dr Nipin Bagla	Consultant Pathologist	723-6605
Dr Thiwanka Karawita	Consultant Pathologist	723 8284
Dr Matthias Koslowski	Consultant Pathologist	723-8035
Dr Eranga Nissanka-	Consultant Pathologist	723-1801
Dr Saira Khan	Consultant Pathologist	723-6822
Dr Konstantinos Skendros	Consultant Pathologist	723-6187
Sarah Reeves	Consultant Biomedical scientist	723-6014

Please call 01233 616016 (Cellular Pathology Enquires) if unable to reach consultants:

PARTICIPATION IN EXTERNAL QUALITY ASSURANCE SCHEMES

The laboratory participates in an EQA scheme for all of its scope wherever possible.

REPORTS

Histopathology and Cytopathology reports are available as soon as they have been finalised by the Pathologist, Consultant Biomedical Scientist and BMS. Reports are electronically available within half an hour after authorisation through Dart OCM. If there is a need for a printed report, these are sent to the requesting clinician the following working day after authorisation by the reporting consultant. If you are unable to see a report and there is a clinical urgency, please contact the department office number for the relevant discipline.

MULTIDISCIPLINARY MEETINGS

A provisional list of cases to be discussed should be emailed to the MDM team (ekhuft.mdmpathteamwhh@nhs.net) a minimum of two working days before the meeting and a final list should be submitted a minimum of one working day before the meeting. Additions later than this may not be available. The MDM team can also be contacted on 01233 616016 (Ext: 723-4136). Pathologist representation at every meeting is provided via videoconferencing or by a pathologist attending in person.

HISTOLOGY

Fixation

Fixation is a time-limiting stage that takes approximately 24 hours for completion. Please write the time of collection on the request form to help determine the optimum time for subsequent processing to begin. Failure to use sufficient fixative, in a suitable container for the correct length of time may affect the quality of the sample and therefore the value of the final report

The following fixative is also available on request:

- Bouin's fixative for testicular biopsies
- Michel's medium for IMF

Rapid Frozen Section Service

This service offers an immediate diagnosis on specimens from patients who are under anaesthetic and must be booked at least 24 hours in advance with a consultant pathologist. Please contact the cellular pathology office on 723-6016.

When booking a frozen section you will be asked to provide the following information:

- Name and hospital number of the patient
- Date and time the specimen is to be expected
- Site of operation
- Theatre name and telephone extension number
- Surgeon performing operation
- What tissue is to be sent and reason for sending
- Name of clinician making the booking.

Due to laboratory opening hours and the time it takes to process frozen sections, specimens for frozen sections must reach the laboratory no later than 5.30pm in order to have sufficient time to process them before the laboratory closes.

If at the time of surgery, it is decided not to proceed with the frozen section, please inform the pathologist / laboratory as soon as possible.

These specimens must not be stored before collection as it may affect the histological interpretation; send immediately in a dry container to the laboratory and inform the laboratory when dispatched.

Do not place in formalin – this destroys them for subsequent investigations.

The cryostat is used to cut sections from fresh (unfixed) frozen tissue.

Samples which are from patients known to be infected with hazard group 3 or 4 pathogens will not be cut as frozen sections in this laboratory.

Immunofluorescence

Immunofluorescence is undertaken on skin and oral mucosal biopsies only.

Biopsies for immunofluorescence must be sent to the laboratory in Michel's medium which can be obtained from histology. Please also send a second sample from the lesion in formalin for routine processing as immunofluorescence is only an adjunct to the assessment of paraffin sections (routine histology)

Samples must be received on the same working day. These specimens must not be stored before collection as it may affect the histological interpretation.

Lymph Node Analysis

Lymph nodes biopsy may be required to establish a diagnosis in cases of:

- Infection or Pyrexia of Unknown Origin (PUO)
- Unresolved lymphadenopathy
- Suspected lymphoma or haematological malignancy
- Metastatic disease

In cases of suspected infection or PUO, an appropriate serological work up must be completed before biopsy of unresolved lymphadenopathy typically to exclude EB virus (monospot), toxoplasma, viral screening and HIV if appropriate. A fresh sample may be sent to microbiology if appropriate. The lymph node sample should be divided in theatre and part sent fresh to the microbiology department (typical sample size 0.5 cm³) with the remainder being placed in formalin and sent for histological examination.

Mohs Sections

This service is provided by the laboratory in co-operation with the consultant dermatologist and must always be arranged at least one week in advance at K&CH Dermatology unit between 08:00 and 16:00 hrs. Requirement for service beyond this time requires arrangement with the Head BMS.

Fetal material, retained products and placentas

The clinician / midwife must discuss with the Guys Hospital Regional Genetics Centre as to what are the appropriate samples required from a fetus for cytogenetic investigation. The standard samples are usually cord blood and skin which must be taken by the clinician / midwife and dispatched to the regional genetics centre. The fetus can then be sent to the appropriate area dependent on gestation.

In the case of suspected infection, the clinician / midwife must take a swab of placenta and send promptly to microbiology. Depending on gestational age, the fetus and placenta must promptly be sent via porter to the appropriate area.

Fetuses and placentas not requiring post mortem, fetuses <16 weeks and retained products (suspected or clinically diagnosed products of conception, labelled POC) are sent directly from the EPAU, or gynae ward, in an appropriately sized specimen container with sufficient 10% formalin to cellular pathology via the pathology specimen reception at any site. This must be accompanied by a completed histology request form, a signed consent form and a form 5 clearly stating whether an external examination of the fetus is required, / or histopathological examination of the placenta.

The form must clearly state:

- Patient's Name
- NHS / Hospital Number
- Time event took place and Date

- Signature of Doctor
- Ward
- Consultant Name
- Date of Specimen
- Clinical Details
- The form must also state “For examination” or “For sensitive disposal only”

The pot must also bear a completed label included patient’s name, DOB, hospital number, what the specimen is (labelled e.g. POC if retained products), the date the event took place. A certificate must accompany the specimen that includes:

- Name of Patient
- NHS / Hospital Number
- Time event took place and Date
- Signature of Nurse or Doctor certifying products of conception < 24 weeks gestation

This certificate must accompany the specimen until final collection for sensitive disposal. If the specimen consists of retained products from a live birth it must be stated in the clinical details as “post-partum” and therefore does not require a certificate. Inform the porters who will transfer the specimen in a pot with formalin to pathology reception.

Specimens from QEQM and KCH will be transported to Cellular Pathology at WHH in a secure transport container via the pathology specimen transport system.

The laboratory staff will allocate a histology specimen number to the request form and specimen pot(s). A signed duplicated POC certificate must accompany products of conception.

For further information please refer to: East Kent Hospitals NHS Trust Procedure for the Management of Early and Mid-Term Pregnancy Loss (Under 24 Weeks Gestation) Policy which is available on Policy Centre.

Muscle Biopsies

Contact the Neuropathology Laboratory at King’s College Hospital on **020 3299 1957** the day before the procedure and give a rough time when the biopsy is being taken and the patient’s name. If there is no answer, then phone the department office on **020 3299 1955** and leave a message. The department is open from 8.30am to 5pm, Monday to Friday.

The sample should be placed in a universal container without anything else added. Please do not:

- submerge the specimen in any liquid (for example, saline)
- wrap the sample in gauze
- freeze the sample or transport it on dry ice, unless instructed to do so (call the laboratory on **020 3299 1957** if unsure)

It is the sender’s responsibility to comply with these regulations.

Mark the package as:

‘Urgent sample for Department of Clinical Neuropathology, 1st Floor, Academic Neuroscience Centre, King’s College Hospital, Denmark Hill, London SE5 9RS. Telephone: 020 3299 1957’

Videoconferencing

This service provides microscope images from Cellular Pathology to other locations including Queen's Centre for Clinical Studies, QEQMh, K&CH and Maidstone and Tunbridge Wells NHS Trust. Use of this equipment is arranged at least a week in advance (contact 723-6237).

Digital Macro and Microphotography of Surgical Specimens.

This facility is available to clinicians for clinically important cases. This can be arranged through liaising directly with the relevant sub speciality pathologist.

SAMPLE COLLECTION

The patient must be appropriately informed about the procedure before taking a specimen and their informed consent is presumed upon receipt of sample.

Where it has been indicated to use formalin as a fixative; cellular pathology recommends at least ten times the volume of formalin as the volume of the specimen is used to fully cover the specimen. Ensure that the specimen is free to move in the container and that it is not stuck to the sides of the container. Once fixed, these specimens can be stored at room temperature before transportation to the laboratory.

Before sending specimens

- Ensure all specimen pots and request forms are clean externally before sending.
- Ensure that the specimen is in an adequately sized specimen pot with appropriate fixative.
- Check the container is sealed properly with adequate packaging of the specimen. Please ensure a proper seal by closing the lid completely. Please do not then tape lids in place as this does not prevent spillage and can damage specimen labels.

Smaller pots (e.g. 60ml specimens) must be placed in a sealable specimen bag for transport to the laboratories with the request form placed in the pocket. For larger specimen pots and buckets, please ensure that the specimen pot lid is securely fastened. The request form must be placed in a sealable specimen bag and then place both this and the specimen pot into a polythene bag

Specimen Containers

The department is able to supply a variety of sized containers and fixatives to users as required ranging from 60ml – 20l buckets. Please ensure that an appropriate sized container is used.

SAMPLE AND REQUEST FORM LABELLING

All specimens must be accompanied by a Cellular Pathology request form CELPTHY FRM-KPN-CEL-004 which is PRINTED CLEARLY AND PROPERLY COMPLETED. ALL mandatory fields must be completed and are indicated with * .Sample type effects the requisite specimen container, but the labelling criteria remains consistent:

Labelling criteria for all histology samples

All Histology samples sent to cellular pathology MUST have the patient's full name, date and time of collection site of sample and a minimum of two out of three patient identifiers included on the pot/container:

- Date of Birth

- Hospital number or NHS number
- Patients' address (including postcode)

Labelling criteria for different sample types:

- Histology samples should be labelled 10% formalin container showing appropriate hazard warning.
- Histology frozen section samples must be sent to Histology ASAP in a dry labelled container.
- Histology skin samples for immunofluorescence must be sent to Histology ASAP. One sample in a labelled histology container. One sample in Michels medium (cryotube to be placed in a clean 60ml sterile container).

If applicable please add high risk indicator

Please endeavour to provide as full a clinical history as possible, failure to do this may result in delay in diagnosis.

Please note: - Accepted printed adhesive labels must NEVER be placed on the container lid.

Breast biopsies / resections performed on contralateral sides SHOULD ALWAYS BE SENT TO PATHOLOGY ON SEPARATE REQUEST FORMS.

Unlabelled or incompletely filled in requests that do not meet the department's acceptance criteria will be rejected. All histology samples are, for practical purposes, regarded as unrepeatable. Samples and request forms that do not fulfil the minimum acceptance criteria will be returned or the requesting clinician asked to come to the department to correctly relabel samples.

TRANSPORT

BioClinic transport boxes that meet the requirements of UN 3373 are provided by Cellular Pathology for porters and drivers to transport specimens in which contain an absorbent sheet to absorb any spillage within the box. Each van used to transport specimens contains a biological / chemical spillage kit with drivers trained on using this.

For the transfer of specimens using post or a courier it is essential to comply with relevant National Postal and Health and Safety legislation and IATA regulations, to ensure the integrity of the specimen and protect postal workers, couriers, porters and laboratory staff. For all specimens sent by post or courier the following packaging must be used:

- The specimen container must be wrapped in enough absorbent material to absorb all fluid in case of breakage.
- A second durable, watertight leak-proof receptacle must be used to protect the specimen container. The secondary receptacle is placed in an outer shipping package.
- The outer packaging must include both the recipient's and the sender's name and address so that contact can be made in the event of a leakage.

- Packages must be clearly labelled as containing a pathological specimen and must meet the requirements of UN 3373.

HEALTH AND SAFETY

Safety Guidance for porters and drivers handling histology specimens

Histology specimens contain 10% formalin (4% formaldehyde gas in solution).

Formalin is a clear liquid with a noticeable odor which is harmful if inhaled or absorbed through the skin, it causes irritation to skin, eyes and respiratory tract, and is a strong sensitizer. When adhering to the following safety measures, the risk of harm is low and limited.

- Do not open transport containers.
- Do not collect specimens that show any signs of leakage.
- Transport containers with specimens inside must be kept upright at all times.
- Take special care in handling containers in and out of a van / on and off of a trolley.
- Ensure containers are secured in back of van to prevent movement before driving off.
- BioClinic transport boxes are heavy, especially when full. Use trolleys if transporting several containers.
- Do not accept specimens which are not placed in either:
 - Double plastic bags (usually GP specimens)
 - Bagged and packed securely in BioClinic boxes

If there is evidence of leakage, the department / surgery sending the specimen is responsible for cleaning and re-packing it before transport.

What to do if there is a formalin Spillage

If formalin has leaked outside the transport box and there are formaldehyde fumes contact:

- Histology BMS Staff 01233 616016 (direct extension 723-6016) or
- On-call BMS for cellular pathology via switchboard

REPORTS

Cellular pathology reports are electronically available almost immediately after authorisation by pathologist on Dart OCM. If the requesting clinician is an established service user and registered for electronic alerts, an email alert informing the user that a new report is available will automatically be sent to the registered email address. If a printed report is required it will be issued the following working day after authorisation. Revised reports may be issued upon referral for a second opinion to a specialised consultant and the report will indicate that this has been amended. Details regarding the referral consultants and laboratories used are available on request from the Cellular Pathology quality lead.

Cellular Pathology works to the Royal College of Pathologists recommended turnaround times, including the aim that 90% of histology specimens are to be reported within 10 working days from collection date. Compliance to achieving this turnaround time is measure monthly within pathology; non-compliance is escalated through the governance routes to all users.

If there is a clinical need and a specimen is yet to be reported please contact the cellular pathology office by ekhuft.cellpathchases@nhs.net or on 01233 616016 ext. 723-6016 and one of the clerical staff will arrange for the pathologist concerned to give a preliminary report and / or a

differential diagnosis. If the final report is delayed an interim report may be issued, or the consultant pathologist may discuss the case with the referring doctor, this may occur for the following reasons:

- Specimens where the tissue requires decalcification e.g. bone
- Specimens being held to discuss at MDTM before issuing a report
- Specimens received with little or no clinical details where discussions may be required with the clinical team before a report can be authorised. There is no time limit on requesting further examinations in histology; any requests must first be discussed with the consultant reporting the case.

FACTORS THAT MAY AFFECT THE HISTOLOGICAL INTERPRETATION OF RESULTS

- Crushing small biopsies with forceps before placing them in fixative.
- Diathermy
- Allowing the tissue to dry out once it has been removed.
- Prolonged storage at room temperature or above before fixation.
- The type and concentration of fixative.
- An inadequate volume of fixative.
- Fresh tissue delayed before arriving at the laboratory.

CYTOLOGY

GYNAE CYTOLOGY (NHS Cervical Screening Programme)

Gynae cytology services are no longer provided by EKHUFT as part of NHS England transformation to HPV primary screening. The service is now provided by Berkshire and Surrey Pathology Services (BSPS) and all samples are being tested at:

St Peters Hospital
Guildford Road
Chertsey, KT16 0PZ

Samples are still transported to Pathology at the William Harvey Hospital where they will be sorted and sent onto BSPS.

Information and advice (including clinical advice) can be accessed via the HPV Helpdesk, contactable on 01932 726622, or by email at asp-tr.bspshpv@nhs.net

The Helpdesk is available Monday to Friday (excluding bank holidays) between 7 am – 7 pm

NON-GYNAECOLOGICAL CYTOLOGY

Non-gynaecological cytology specimens are collected from a variety of sites into a labelled sterile container (25ml or 60ml) for the detection of malignant and benign processes. The site from which the specimen is collected dictates the method of collection. The method of collection affects the morphology of the cellular specimens. The importance of proper specimen collection and submission is essential. Each specimen must be accompanied by a completed and matching specimen request form. Fixative, special containers and transport boxes are obtainable from the laboratory upon request.

Please use the guidance in this user handbook on sample collection; if there are any doubts in regard to this, or please contact the laboratory before collecting the specimen.

Rapid On site Evaluation Clinic (ROSE)

This is a service provided by the laboratory in co-operation with the Radiology department. This allows for the adequacy assessment of thyroid FNA samples only and is not a diagnostic service.

Bile Duct Brushings

This is a service is provided by the laboratory at WHH in co-operation with the endoscopy department to produce slides from the bile duct brush. This allows for specimen adequacy and is not a diagnostic service.

Sample and request form labelling

Any samples or forms which do not meet the acceptance criteria listed below can result in delay and possibly the return of the sample to the requesting clinician for re-labelling.

Sample labelling

All Non-Gynae Cytology Fluids, Non-Gynae slides and Non-Gynae boxes MUST have the patient's full name and a minimum of two out of three patient identifiers:

- Date of Birth
- Hospital number or NHS number
- Patients' address (including postcode)

Non-Gynae Cytology fluids MUST have:

- Signature / Initials of individual obtaining sample
- Date / Time of collection
- Site of sample

Non-Gynae slides MUST be:

- Clearly labelled with details of site if they have been taken from multiple sites.
- Labelled in pencil

Accepted printed adhesive labels or handwritten labels must never be placed on the container lid. Clinics may utilise data trace or addressograph labels which must be created at the time and location of the procedure. Samples identified with either acceptable printed labels or legible handwritten container labels must be clearly dated, signed or initialled by the person who took the sample

Request form labelling

All specimens must be accompanied by a Cellular Pathology request form **EKH776 11 / 18** with the following information provided:

- Full name
- Full postal address (including postcode)

- Date of Birth
- NHS / Hospital number- note the NHS number may not be available for certain individuals (e.g. new born, unregistered, overseas visitors)
- Site of sample
- Clinical history
- Responsible consultant and department
- Clinician Signature / Initial
- Date / Time of collection
- Priority High Risk sticker (if applicable) - this must not cover patient details The request form accompanying a High Risk specimen must show a biohazard sticker and the precise hazard must be clearly stated (e.g. Hepatitis B, HIV, TB, etc).

Note: Certain patients' identity will be anonymous (e.g. GUM clinic, blind clinical trials): these patients will have a coded identifier, and will not have name, address nor NHS / hospital number.

Sample types and specimen containers

Storage Conditions

All specimens must be delivered to the laboratory as soon as possible after being taken. If a delay is anticipated the specimen must be kept in a refrigerator at 2-8°C. If collected out of hours, store at 2-8°C

Sample type	Specimen container	Sample Volumes	Other information
Effusions	60ml aseptically produced container (not catheter drainage bag)	20 – 80ml	Less than 20mls will be accepted if sample is limited. Samples of 10 ml or less will have the low volume noted in the report.
Urines	25ml aseptically produced container (not boric acid preservative)	20 ml max	The second voided urine sample of the day is the most appropriate sample for cytological assessment. Early morning or catheter derived specimens are not suitable due to degenerative changes in cells. State how the specimen has been obtained i.e. voided, catheter, post cystoscopic or ileal conduit. This must be clearly stated on the request form. Please send into the laboratory as soon as possible after collection as samples are prone to bacterial contamination.

Sample type	Specimen container	Sample Volumes	Other information
Sputum Samples	60ml aseptically produced container	5 ml	Early morning specimens must be sent fresh to the laboratory. Specimens must be collected on three consecutive days if carcinoma is suspected. Check the quantity is adequate and sputum is not contaminated with food, saliva, tobacco or toothpaste. A specimen after physiotherapy or postural drainage is very useful if the patient is not fit for bronchoscopy. Sputum is advised if patient is not fit for bronchoscopy and carcinoma is suspected.
Bronchial Brush / Touch Preparation	Direct smears made from bronchial brushing / biopsies must be spread evenly and quickly on a clean glass slide. The slides must be immediately sprayed with Cytofixx spray, allowed to air dry flat for 15 minutes before being placed into the slide transport box	1 slide	Slides that are not fixed with Cytofixx spray are not optimally prepared and therefore this may impact on the preservation and subsequent reporting of the sample.
Broncho alveolar lavages / induced sputum	60ml aseptically produced container	5 ml	Not applicable
Fine Needle Aspirates (FNA)	The sample must be spread thinly and evenly onto clean glass slides. Allow slides to air dry before sending to the laboratory in a slide transport box. Contact the laboratory for more advice.	1 slide	Appropriate for palpable lumps in breast, thyroid, salivary gland and superficial lymph nodes, subcutaneous skin nodules and for imaging guided non-palpable lesions.

Sample type	Specimen container	Sample Volumes	Other information
Aspirates of Breast Cysts	60ml aseptically produced container	0.5 ml	If less than 0.5 ml collected, place this directly onto a glass slide labelled in pencil with the patient details
CSF	25ml aseptically produced container	0.5ml	Avoid where possible taking samples late in the day as this may lead to delays in processing and potential sample deterioration. If delay is unavoidable, please inform the laboratory. Cytology are only able to process CSFs for Cytology investigations. Please note that if the sample is to be referred for additional tests at other sites the courier must be arranged by the requesting clinician. CSF investigations for Leukaemia must be suitably marked
Joint Aspirates	60ml aseptically produced container	5 ml	Not applicable
Endo Bronchial Ultrasound scan (EBUS)	60ml 10% formalin container for needle washings. Each lymph node station must be clearly marked.	1 x 10% formalin container for needle washings for each node	Each node must be clearly identified.
Bile duct brushings	Direct smears made from bile duct brushings must be spread evenly and quickly on a clean glass slide.	1-4 x slides depending on available sample	Preparation service only available by prior arrangement at WHH

Receiving an adequate volume of fluid optimises potential investigations.

If tests are required for additional departments and the sample yield allows, best practice would be to send each department a specimen and a separate paper request form for cytology. Cytology requesting is not available on Sunrise therefore this allows more sample to be available should additional tests be requested by individual departments rather than splitting samples and on occasion receiving the guide minimum of 20 mls.

Cellular Pathology will carry out adhoc visits to clinics to review practice for sample collection and labelling to standardise and improve the pre-examination processes specimen labelling throughout EKHUFT.

If any advice on sample preparation is required please contact the Cytology.

Specimen transportation

Specimens should be sent to the laboratory without delay. Specimens are collected from the EKHUFT wards and clinics and delivered directly to the Cellular Pathology specimen reception area with GP specimens transported via the transport service.

Reports

- Urgent samples: In cases of clinical urgency a report may be available on the same day upon receipt of the sample, depending on sample type and by prior arrangement with the laboratory.
- Non urgent samples: The department works towards the RCPATH KPI of 80% of results are available within 10 days.

Non-gynaecological samples are kept for 2 weeks before disposal.

ANDROLOGY

The Andrology service at EKHUFT is available for sub fertility, vasectomy reversal and post vasectomy investigations.

PLEASE NOTE THAT FACILITIES ARE NOT AVAILABLE TO PRODUCE SEMEN SAMPLES AT HOSPITALS WITHIN THE EAST KENT HOSPITALS UNIVERSITY TRUST

Approximately 1 in 6 couples have difficulty conceiving and are referred for infertility investigations. The single most common cause of infertility is sperm dysfunction, which is apparent in approximately 30% of the men referred for analysis; a high quality Andrology service is therefore essential for appropriate infertility investigations.

Sperm tests to confirm the success (or otherwise) of a vasectomy operation are absolutely essential with patients required to produce a sample of seminal fluid at 16 and 20 weeks and possibly an additional test at 28 weeks following vasectomy if non-motile spermatozoa persist

Semen Analysis for Sub Fertility / Vasectomy Reversal Post vasectomy	
Requesting a test	<p>Please provide the patient with the following:</p> <ul style="list-style-type: none"> • A Cellular Pathology request form containing patients full name, address with postcode, date of birth, partners name (infertility only), NHS number (if known) clinical information and reason for request (infertility / reversal of vasectomy / post vasectomy) and date of vasectomy (if applicable). <p>Please indicate requesting clinician's name and location</p> <p>Patients must be advised that they must bring this request form with them when delivering their sample to the laboratory or it will be rejected</p>

	Semen Analysis for Sub Fertility / Vasectomy Reversal Post vasectomy
	<ul style="list-style-type: none"> The appropriate patient instruction sheet Subfertility / Vasectomy reversal (CEL IP 001) Post Vasectomy instruction (CEL IP 002) Patients must be advised that they will need to complete the patient declaration form on the last page before the sample will be accepted. Completion of this declaration form by the patient prior to delivering the sample means that the handover of the sample at reception is much quicker and their partner or another designated individual can deliver the sample for them.
Appointments required	ALL PATIENTS MUST CALL THE BOOKING LINE ON 01233 616145 BETWEEN THE HOURS OF 8 AM – 4 PM ON MONDAY TO FRIDAY. A LABORATORY APPROVED SAMPLE POT WILL BE SENT TO THE GP SURGERY FOR THE PATIENT TO COLLECT ONCE THE APPOINTMENT HAS BEEN MADE.
Availability of service	ALL SEMEN SAMPLES MUST BE DELIVERED DIRECTLY TO PATHOLOGY AT THE WILLIAM HARVEY HOSPITAL FOR THE APPOINTMENT TIME PLEASE ADVISE PATIENTS THAT SAMPLES DELIVERED MORE THAN 20 MINUTES EITHER SIDE OF THEIR APPOINTMENT TIME MAY NOT BE ACCEPTED FOR TESTING. PATIENTS WHO ARE RUNNING LATE FOR AN APPOINTMENT MUST CONTACT THE LABORATORY TO INFORM THEM OF THE DELAY.
Sample collection	Prior to producing the sample the patient must have abstained from sexual intercourse / masturbation for at least 2-3 days and no more than 7 days. For post vasectomy analysis the patient must have had 20 ejaculations prior to the first analysis at 16 weeks. The patient must wash their hands and genital area ensuring all soap is washed off as this will kill sperm. Check that the pot is free of cracks as leaking samples will be rejected. Please only use the specimen container supplied by Cytology as inappropriate pots will be rejected. The sample must be produced by masturbation directly into the specimen container. It is important that the entire sample is collected in order that an accurate analysis can be carried out. The use of lubricants such as K-Y jelly must be avoided. Samples produced by the withdrawal method or into an ordinary condom are unsuitable for analysis. Ensure that the pot lid is tightly screwed up as if the pot leaks in transit it will not be analysed. PLEASE ADVISE PATIENTS THAT SAMPLES MUST BE PRODUCED AT HOME AS THERE ARE CURRENTLY NO FACILITIES AT THE WILLIAM HARVEY HOSPITAL
What if the patient has problems collecting the sample?	Be re-assured that when the initial embarrassment is overcome, patients usually manage to provide a specimen. However, for those who still can't, or have some religious or cultural objection, we can provide a non-spermicidal condom for specimen collection. If the patient needs to request one of these condoms please ask them to ring 01233 616145 and ask for the Lead BMS for Cytology or individual deputising for this role in their absence.
Sample and request form labelling	It is essential that the following information is written in ink on the label of the pot by the patient. <ul style="list-style-type: none"> Full name of patient (first name and surname).

Semen Analysis for Sub Fertility / Vasectomy Reversal Post vasectomy	
Please do not add labels to the pot as it has been pre-weighed in the laboratory to facilitate accurate estimation of semen volume.	<ul style="list-style-type: none"> • Date of birth • Date of collection • Time of collection • Home postcode (as a patient identifier) • The patient must fill in the patient declaration form located at the back of the instruction sheet to confirm that the complete sample has been collected and that the appropriate period of abstinence (sexual intercourse / masturbation) has been carried out. This section must be torn off and attached to the request form
Transportation of samples	<p>All patients must be advised that it is essential that semen samples are analysed as soon as possible after ejaculation to ensure that any motile spermatozoa can be identified. This is especially important for post vasectomy samples. The WHO 2010 guidelines state that semen samples for subfertility must be analysed within 1 hour of production, but due to the distance travelled by some patients we appreciate that this is not always possible. All reports will detail the time of emission, time received and the time examined, which will help with the interpretation of the motility status of the sperm. It is essential that all patients are informed that the sample must be kept as close to body temperature as possible when transporting it to the hospital. This can be achieved by carrying it in an inside pocket.</p>
Rejection of samples	<p>Semen samples will be rejected if:</p> <ul style="list-style-type: none"> • Not produced into a laboratory approved container • Produced into an unlabelled container. • Found to have leaked in transit • The patient hasn't booked an appointment or comes in on the wrong day. • Received without a request form. • Delivered to any hospital other than the WHH or sent via the hospital or GP transport). • Produced earlier than 16 weeks after vasectomy (unless received from a clinic).

	Subfertility Samples	Post Vasectomy Samples
Semen analysis test	<p>The semen sample is examined for a number of important factors according to the World Health Organisation Guidelines 2010 including:</p> <ul style="list-style-type: none"> • Sperm Concentration. Sperm count in millions per ml of semen. Normal samples have over 15 million per ml or 39 million for the whole ejaculate. • Sperm Motility. Sperm are graded according to their ability to swim. Sperm that swim in a progressive manner are graded as having rapid or sluggish motility. Normal samples contain at least 32% progressive sperm and at least 40% motile sperm (progressive and non-progressive) at 1 hour. <p>Sperm Morphology. The shape and size of the sperm are assessed on a stained preparation. The normal value in a fertile population is 4% or above.</p> <p>Vitality Test: this test is included in results where the number of immotile sperm are greater than 60%. It is a staining technique that will identify if the immotile sperm are dead or just immotile and is reported as a percentage vitality. The normal value is 58% or above.</p>	<ul style="list-style-type: none"> • The semen sample is examined in a large volume fixed depth slide. Any spermatozoa present in a 25ul aliquot are counted and the count / ml of sample is calculated. • The test will be based on the numbers of spermatozoa. The presence of large number of spermatozoa may indicate a failed surgical procedure or recanalisation. This is an infrequent event which must be confirmed by a sample delivered to the laboratory within 1 hour. The laboratory will advise the need for a repeat sample or re referral to the surgeon.
Results	<p>A written report is sent back to the referring practitioner within 7 – 10 working days. If further copies are needed to forward onto other practices / clinics please make a note on the original request form.</p> <p>Patients must be made aware that they cannot receive the result directly from the laboratory.</p> <p>If a report is required for a specific appointment date, this must be stated on the request form to allow the report to be fast tracked.</p>	<p>Reports will record the absence of sperm as:- No spermatozoa seen</p> <p>Reports will record the presence of sperm as:- SPERM CONCENTRATION – i.e. Number of sperm per ml TOTAL COUNT – i.e. Number of sperm per ml x volume of semen</p> <p>Only sperm concentrations greater than 100,000 spermatozoa per ml are significant.</p>

	Subfertility Samples	Post Vasectomy Samples
Interpretation	<p>Although there are strict guidelines for the measurement and quality control of semen variables they are not an absolute guide to a man's fertility and no one parameter must ever be considered in isolation unless he has no sperm at all. Procedural errors are minimised by standardised methods of collection, analysis and reporting, therefore it is essential that the patient understands the instructions prior to production of the sample. The overall balance of the sample is much more indicative of fertility potential and must be considered alongside any investigations of the female partner. For example the term low sperm count is ambiguous and can be misinterpreted by the patient; the count may be low but an increased motility may be sufficiently high enough to compensate for any shortfall.</p> <p>Please refer to table below for distribution of values.</p> <p>Repeat Tests If any of the factors tested are below the normal range it is advisable to repeat the semen analysis test. Abnormalities in the sample can occur for a number of reasons e.g. patient did not collect the whole sample. In addition illness, stress or medication can also affect sperm quality. Confirmation of a true sperm problem may require a second test.</p> <p>References: WHO 2010 Examination and processing of human semen</p>	<p>The laboratory will request a repeat in 4 weeks after the first sample and a repeat at 28 weeks post vasectomy if spermatozoa are still present at 20 weeks.</p> <p>Please note that clearance / special clearance must be given by the GP surgeon who carried out the vasectomy. The laboratory will NOT give clearance, but will advise if the sample is not suitable for clearance / special clearance.</p> <p>Clearance Will require either 2 samples with 'No spermatozoa seen' or 1 sample with less than 100,000 spermatozoa per ml followed by a sample where no spermatozoa are seen.</p> <p>Special Clearance Evidence based studies have shown that in a small minority of men non-motile spermatozoa persist after vasectomy. In such cases special clearance may be given if less than 100,000 non-motile spermatozoa per ml are seen in a sample examined at least 28 weeks after vasectomy. If all three samples (at 16, 20 and 28 weeks) show the presence of non-motile sperm in concentrations of less than 100,000 spermatozoa per ml special clearance can be given to the patient by the vasectomy surgeon. In these cases the report will read:– PERSISTENT RARE (< 100,000 spermatozoa / ml) SPERMATOZOA PRESENT. If you have any further queries or have any problems regarding the production and delivery of your semen sample please contact us on 01233 616145</p> <p>References: 1.2016 Laboratory guidelines for post vasectomy semen analysis: Association of Biomedical Andrologists, the British</p>

	Subfertility Samples	Post Vasectomy Samples
		<p>Andrology Society and the British Association of Urological Surgeons .Hancock P et al. J Clin Path 2016 Jul;69(7):655-60</p> <p>2. Use of large-volume, fixed-depth, disposable slides for post-vasectomy semen analysis. Hancock et al Br J Biomed Sci 2014;71(1):1-5</p> <p>3. Male and Female Sterilisation. Faculty of Sexual & Reproductive Healthcare Sept 2014</p>