

Manchester University NHS Foundation Trust
Laboratory Medicine (ORC and T)
Department: Cytology

Copy Number: Electronic Q-Pulse
Edition Number: 009
Q-Pulse identifier: CYQUALPRO13

Previous identifier: **CYT GEN 030**

Date of issue: 01.02.21
Page 1 of 26

Author: Ambriene Irshad
Authoriser: Rosebina Zafar

Division of Laboratory Medicine

Non Gynaecological Cytology User Manual 2021

Controlled Document

Table of contents

1.0 About us	3
1.1 Opening hours	5
1.2 Services available at MFT	5
1.3 Services available at TGH	5
1.4 Services provided to the Christie Hospital	5
2.0 Find or contact us at MFT	6
2.1 Telephone enquires	7
2.1 key contacts at MFT	8
2.2 Find or contact us at the Christie Hospital	9
3.0 Specimen acceptance policy	10
4.0 Package and transport of samples	11
5.0 Turnaround time	12
5.1 Reports	13
6.0 Current practice and research activity	14
6.1 Molecular testing	14
7.0 Non gynaecological cytology sample collection	15
7.1 Serous fluid samples (pleural/ascitic/peritoneal/pericardial fluids & peritoneal washing)	15
7.1.1 Cyst fluid samples	15
7.2 Respiratory tract samples	16
7.2.1 Endobronchial ultrasound fine needle aspiration samples	16
7.2.2 Sputum samples	16
7.2.3 Bronchial aspirate/trap/lavage & bronchoalveolar lavage samples	17
7.2.4 Bronchial brush samples	18
7.3 Gastrointestinal tract brush samples (including bile duct brushes)	18
7.4 Urinary tract samples (including voided, catheter, ileal conduit, ureteric and urethral)	19
7.5 Cerebrospinal fluid samples	20
7.6. Fine needle aspiration cytology samples	21
7.6.1 Use of fine needle aspiration	22
7.6.2 Equipment required for fine needle aspiration	22
7.6.3 Performing a fine needle aspiration	22
7.6.4 How to perform a fine needle aspiration	23
7.6.5 Making spreads from fine needle aspiration	24
8.0 Requesting a non gynaecological cytology test via ICE at MFT	25
8.1 Download a non gynaecological cytology request form	26

1.0 About us

The non –gynaecological (NG) cytology service at Manchester University NHS Foundation Trust (MFT) is located on the 1st Floor of the Clinical Sciences Building 2 at the Oxford Road campus (ORC). We report approximately 4000 samples per annum and offer a comprehensive specialist service, reporting on a wide range of samples including serous fluids, urine, cerebrospinal fluid, bronchoscopically obtained respiratory samples and fine needle aspirates (FNAs). FNAs are taken from a wide variety of sites including thyroid, lymph nodes, salivary glands, deep tissues and organs, and may be performed freehand, under radiological guidance or by endoscopic ultrasound (EUS) and endobronchial ultrasound (EBUS).

We are staffed by approximately 3.85 WTE consultant cytopathologists, 7.0 WTE BMS with MLA support and provide a diagnostic service to MFT, Trafford General Hospital, the Christie Hospital, other NHS Trust and general practices. We have a consultant led service which provides on-site provisional diagnosis at EBUS clinics and BMS assistance at a wide range of FNA clinics, including adequacy assessment at head and neck clinics at the ENT and Ultrasound department at MFT and Trafford General Hospital as well as all types of clinics at the Christie Hospital.

The department serves many specialised services at MFT including gynaecological, respiratory, head and neck, urological and hepatopancreaticobiliary diagnostic services. This unique department is at the forefront of personalised medicine due to our close working relationship with the Manchester Centre for Genomic Medicine based at MFT (ORC) and

preparation of a wide range of non-gynaecological cytology samples for molecular testing.

The NG cytology department is fully ISO 15189:2012 accredited and is an IBMS approved training centre. We are closely associated with The North of England Pathology and Screening Educational Centre (NEPSEC) and provide training to medics and scientific staff and are fully committed to maintaining this accreditation by an established quality management system and standards determined by the Royal College of Pathologists together, with scheduled clinical and quality audits and national guidelines.

Reports generated by the Department of Cellular Pathology including Cytopathology are, in the main, qualitative rather than quantitative. Uncertainty of measurement is considered and controlled throughout the sample pathway by employment of a robust quality management system and continued accreditation to national standards. Where direct clinical impact measurements are made, assessments of uncertainty of measurement are made and are available on request. The laboratory adheres to MFT's policies on data protection and disclosure.

1.1 Opening hours

The department is open from 08:00 hrs – 17:00 hrs, Monday to Friday (except bank holidays).

Non-gynaecological samples should be received in the department by 16:45 hrs.

1.2 Services available at MFT

1. Exfoliative cytology
2. Biomedical Scientist (BMS) assistance at radiological and ad hoc FNA clinics
3. BMS assistance and on site specimen adequacy assessment at dedicated Head and Neck clinics, including thyroid – usually Tuesday mornings and Thursday afternoons
4. BMS assistance and on site adequacy assessment at a dedicated Ultrasound clinic- on Wednesday mornings.
5. On site consultant led provisional diagnoses/adequacy assessment of endobronchial ultrasound (EBUS) FNA samples.

1.3 Services available at TGH

1. Exfoliative cytology
2. FNA without BMS on-site assistance.
3. BMS assistance and on site specimen adequacy assessment on Wednesday afternoons.
Samples are transported to the MFT (ORC) site 3 times per day.
4. On site consultant led provisional diagnoses/adequacy assessment of endobronchial ultrasound (EBUS) FNA samples.

1.4 Services provided to the Christie Hospital

1. Exfoliative cytology
2. FNA cytology, including BMS assistance in slide preparation and on site specimen adequacy assessment. The BMS assistance service is available Monday, Wednesday, Thursday, Friday from 09:00 to 12:30 hrs and Tuesday 09:00 to 16:30 hrs.

2.0 Find or contact us at MFT

The cytology department is located on the first floor of Clinical Sciences Building 2 Oxford Road campus. All visitors must access the department via the reception area of Clinical Sciences Building 1.

Please also contact us if you have any complaints or service improvement suggestions.

'If you wish to make a formal or informal complaint please contact the Patient Advice and Liaison Service (PALS) at www.mft.nhs.uk

Many verbal complaints will be easily and quickly solved by the clinical lead, laboratory Manager or a cyto/histopathologist and will be recorded by the department.

It is the discretion of the Laboratory Manager to forward any complaints onto the Directorate of Laboratory Medicine team for recording if appropriate

Address:  Cytology Department
First Floor
Clinical Sciences Building 2
Manchester Royal Infirmary
Oxford Road
Manchester
M13 9WL

Email: cyto.pathology@mft.nhs.uk

2.1 Telephone enquires

	Telephone	Note
General	0161 276 5115/5116	
Non gynaecological cytology results	0161 276 5115/5116	Please provide full name and date of birth for patient when calling for a result
Booking an FNA (at MFT)	0161 276 5110 0161 276 5115 0161 276 5116 or Bleep 07623 916611	
Advice on non gynaecological cytology sample collection	0161 276 5110	

2.1 key contacts at MFT

Name	Position	Telephone	E- Mail address
Dr D N Rana	Consultant Cytopathologist	0161 276 5108	durgesh.rana@mft.nhs.uk
Dr M Holbrook	Consultant Cytopathologist	0161 276 6475	miles.holbrook@mft.nhs.uk
Dr D A Shelton	Consultant Cytopathologist Clinical Lead	0161 276 5109	david.shelton@mft.nhs.uk
Katie Knapman	Medical Secretary	0161 276 5116	katie.knapman@mft.nhs.uk
Helen Wilson	Medical Secretary	0161 276 6727	helen.wilson2@mft.nhs.uk
Jennifer Bradburn	Medical & The North of England Pathology and Screening Educational Centre Secretary	0161 276 8804	jennifer.bradburn@mft.nhs.uk
Nadira Narine	Clinical and Biomedical Scientist	0161 276 7570	nadira.narine@mft.nhs.uk
Rosebina Zafar	Lead Biomedical Scientist	0161 276 5110	rosebina.zafar@mft.nhs.uk
Jacquelyn Medlock	Cytology Laboratory Manager	0161 276 5120	jacquelyn.medlock@mft.nhs.uk

2.2 Find or contact us at the Christie Hospital

We are located in the Bereavement Suite at the Christie Hospital and are available between the hours of 09:00 hrs to 12:30 hrs, Monday, Wednesday, Thursday and Friday, and 09:00 to 16:30hrs on Tuesdays (except bank holidays). One staff member is available for FNA services and to answer queries relating to non-gynaecological cytology only.

	Telephone	Note
General	0161 446 3643	
Non gynaecological cytology results	See MFT contact above as no results are issued at the Christie Hospital	Please provide full name and date of birth for patient when calling for a result
Booking an FNA (at Christie)	0161 446 3643 or 0755 411 6250	
Advice on non gynaecological cytology sample collection	0161 446 3643	

E mail: cytology@christie.nhs.uk

3.0 Specimen acceptance policy

All samples must be accompanied by a completed and matching sample request form. **This includes samples requested via ICE at MFT.**

Please ensure all fields of request forms are completed. See page 25 for help on completing ICE requests at MFT and page 26 for downloading request forms at all other sites including MFT.

Alternatively, we can supply bulk request forms on request.

It is not acceptable for multiple tests to be requested on a single sample/form, thus, if cytology, biochemistry and microbiology are required then each department must be sent a separate sample (with cytology also receiving a request form). Guidance can be obtained via the DLM sample acceptance policy mft.nhs.uk/laboratorymedicine

All specimen containers must be clearly labelled with:

1. Patient's full name
2. Date of Birth
3. NHS &/or Hospital/District number
4. Specimen type (non-gynaecological)

4.0 Package and transport of samples

Samples taken at central site must be sent with the porter and not via the pneumatic tube.

Non-gynaecological cytology samples requiring transport on the public road must be packaged and transported in compliance with “The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (ADR Regulations) 2011”. Specimens must be packaged according to P650 instructions with a UN3373 diamond point label – Biological Substance, Category B.

Please note instructions P650 requires three layers of packaging:

- Primary container (e.g. universal tube, vial)
- Secondary container (e.g. specimen bag)
- Outer packaging (e.g. rigid transport box).

The primary sample must be individually bagged in a secondary bag and sealed. If the sample is liquid, enough absorbent material must be added to the secondary bag to absorb a potential spillage of the sample. The request form must be placed in the specimen bag’s separate pouch.

Specimens must then be placed in a rigid box and closed. The box must comply with Transport Regulations. The outside must be clearly labelled Biological Substance Category B, with a UN3373 diamond label.

If a sample is sent by post, please note that Royal Mail will only carry UN3373 Diagnostic specimens if they are packed following Packaging Instruction P650 and:

- Are sent by first class post or Special Delivery and to inland addresses only
- The packet is marked with the sender’s name, telephone number and address.

All specimens must be delivered to the laboratory as soon as possible in order to provide the best service possible and keep turnaround times to a minimum.

5.0 Turn around time

The NG cytology department is guided by the guidelines of the Royal College of Pathologists (RCPath) on turnaround times (TAT), that is, 80% of cases are to be reported within seven calendar days of sample being taken whilst 90% are to be reported within ten calendar days – www.rcpath.org. TAT relates to the final local report and excludes cases sent for external opinion and those that require molecular biology analysis and the department is required to publish monthly audit reports. This information is available on request.

However, sometimes a sample may be deemed urgent by the requesting clinician for a variety of reasons, including patients being of the HSC205 pathway. In these instances, the reporting cyto/histopathologist will aim to give at least a verbal report to the requesting clinician within 1 to 3 working days provided the request form is clearly marked urgent/HSC205. Any verbal report is usually provisional pending assessment of all material and/or ancillary testing. In these instances, the clinician should telephone the laboratory in advance and provide a contact name and phone or bleep number.

Additionally, due to the nature of the sample, all cerebrospinal fluid (CSF) samples are deemed urgent regardless of any indication by the requesting clinician. It is strongly recommended that the clinicians inform the laboratory prior to aspirating any CSF samples so that transport instructions may be conveyed and the laboratory is prepared for receipt of the sample.

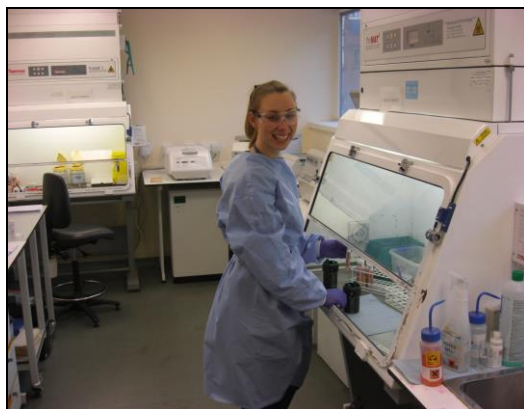
5.1 Reports

- Non-gynaecological cytology reports for external patients are printed and sent out daily, addressed to the consultant or GP who requested the test
- Results for MFT patients are available via ICE and Chameleon
- Results for Trafford General Hospital patients are available via ICE/EPR
- Reports of any malignancy are faxed to safe haven faxes
- To discuss any cytology report with the Consultant cyto/histopathologist, contact the department between 08:00 hrs and 17:00 hrs on 0161 276 5115/5116.

6.0 Current practice and research activity

We currently use a mixture of direct spreads, cytopins and SurePath® Liquid Based Cytology (LBC) technology using the Totalys slide prep machine in our sample preparation. All samples are prepared in a Containment level 3 room with Class 1 microbiological safety cabinets. Our research activity includes:

- Precision Pancreas study – Primus 002 Phase 2
- Protector study- Preventing Ovarian cancer through early excision of tubes and late Ovarian Removal
- DETECT –Research project to screen women presenting with post-menopausal bleeding for evidence of endometrial carcinoma



6.1 Molecular testing

The NG cytology department can facilitate a number of molecular tests on cytology samples due to our close working relationship with the Manchester Centre for Genomic Medicine, The Christie Hospital NHS Foundation Trust

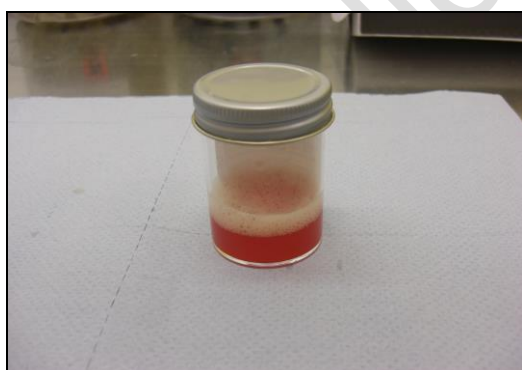
and the Patterson Institute. We strongly recommended that the clinicians convey any requests for molecular tests to the attending BMS for any FNA cytology samples or to the consultant cyto/histopathologists for any exfoliative cytology samples, either by indication on the request card or by telephone.

7.0 Non gynaecological cytology sample collection

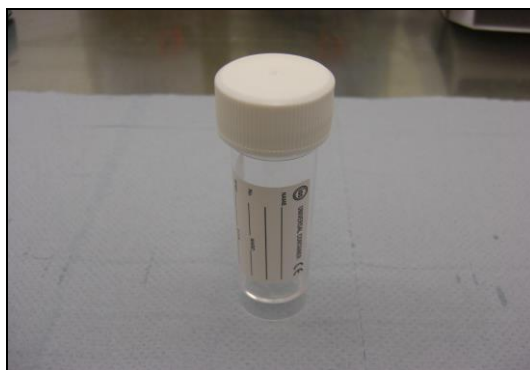
7.1 Serous fluid samples (pleural/ascitic/peritoneal/pericardial fluids & peritoneal washing)

- 50 -100 mls fluid should be sent in a clean dry container with screw cap (**Note: no formalin or alcohol should be added to the sample as both of these can cause interference with adherence to slide and quality of staining**)
- The fluid should be submitted as soon as possible to minimise cell deterioration, so that cell preservation is not compromised
- If there is a delay in delivering the sample to the laboratory, the sample should be kept refrigerated at 4°C (Note – the sample should NOT be frozen).

Serous fluid



Cyst Fluids



7.1.1 Cyst fluid samples

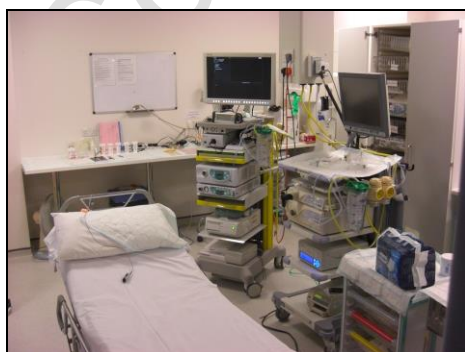
- Cyst fluid samples should be put into a clean dry container with screw cap.
- The fluid should be submitted as soon as possible to minimise cell deterioration, so that cell preservation is not compromised
- If there is a delay in delivering the sample to the laboratory, the sample should be kept refrigerated at 4°C (Note – the sample should NOT be frozen)

7.2 Respiratory tract samples

For any respiratory samples, please ensure details of smoking (never/ light smoker/ current smoker/ ex smoker) and performance status (WHO 0, 1, 2, 3) are recorded on the request form in the clinical details section

7.2.1 Endobronchial ultrasound fine needle aspiration samples

We are one of the few NHS Trusts that provide a consultant led endobronchial ultrasound fine needle aspiration (EBUS FNA) service which started in October 2013. A Consultant Cyto/histopathologist is on site to provide preliminary diagnoses with technical assistance provided by a biomedical scientist. This has proved extremely successful in terms of preliminary diagnosis, specimen triage and reflex molecular testing.



7.2.2 Sputum samples

- Best results are achieved with freshly obtained sputa following chest physiotherapy, with an early morning sputum before the patient has eaten
- Contamination with large amounts of saliva or food leads to inadequate specimens
- Multiple specimens (usually x 3) may be necessary, but these should be sent on 3 separate days, not all taken at the same time
- Send in clean, dry container with screw cap
- If examination for eosinophils is required please indicate this on the request form.

7.2.3 Bronchial aspirate/trap/lavage & bronchoalveolar lavage samples

- Fresh specimen should be placed in a clean dry container and an equal volume of CytoRich® Red preservative fluid added immediately for fixation
- The time of this fixation should be indicated on the label of the container
- If CytoRich® Red preservative fluid is not available, fresh specimen should be placed in clean dry container. Delay in receipt unfixed samples can lead to deterioration of specimen
- If differential cell count is required, split the sample and send half unfixed and the other half fixed in CytoRich®
- **DO NOT USE FORMALIN FIXATIVE**



Fresh Specimen



Specimen with an equal volume of CytoRich® Red preservative fluid

- Please note: When the stock of CytoRich® Red preservative fluid is running low or close to its expiry date, please contact the cytology department on 276 5110/5115 for replacement.

7.2.4 Bronchial brush samples

- Place brush into clean screw capped container with CytoRich® Red preservative fluid. Ensure brush is fully immersed in preservative
- The time of this fixation should be indicated on the label of the container.
- **DO NOT USE FORMALIN FIXATIVE**
- Please note: When the stock of CytoRich® Red preservative fluid is running low or close to its expiry date, please contact the cytology department on 276 5110/5115 for replacement of stock.

7.3 Gastrointestinal tract brush samples (including bile duct brushes)

- Place brush into clean screw capped container with CytoRich® Red preservative fluid. Ensure brush is fully immersed in preservative
- The time of this fixation should be indicated on the label of the container
- **DO NOT USE FORMALIN FIXATIVE**
- Please note: When the stock of CytoRich® Red preservative fluid is running low or close to its expiry date, please contact the cytology department on 276 5110/5115 for replacement of stock.

7.4 Urinary tract samples (including voided, catheter, ileal conduit, ureteric and urethral)

- Collect urine in a clean, dry container with a screw cap. A 20ml to 50ml container, preferably with yellow lid (below) is suitable
- Please do not send urine for cytology in Sarstedt Monovette
- An adequate urine sample is the second voided of the day, preferably mid-morning.
- **Please note: The first sample voided in the morning is unsuitable for cytological analysis**
- Urine can be collected from catheters as well as washings from the bladder or upper urinary tract. The request form must state the method of collection
- If there is a delay in delivering the sample to the laboratory, the urine sample should be kept in a fridge at 4°C
- The preferred method for the collection of industrial urine samples is the same as above (preferably in 25ml Universal tube). Please contact the cytology department in advance when sending large number of samples.



7.5 Cerebrospinal fluid samples

- A clean, dry container with screw cap should be used
- CSF samples are liable to degenerate rapidly and as such must be prepared immediately. **Please contact the laboratory to inform staff of imminent arrival of a CSF sample, and leave a bleep or contact number**
- **Latest processing time for samples is 15.30 hrs Mon-Fri. CSF samples must be received at least half an hour before this time**
- If out of hours sampling is unavoidable, storing the sample in refrigerator at 4°C may help preserve cells for up to 24 hours.



7.6. Fine needle aspiration cytology samples

The non-gynaecological cytology department provides biomedical scientist (BMS) assistance at fine needle aspiration cytology (FNAC) clinics to prepare direct spreads and needle rinses.

Please note the BMS staff do not perform the aspirations.

We do provide BMS on site rapid specimen adequacy assessment at Head and Neck clinics, including thyroid, every Tuesday and Thursday afternoons at MFT (ORC) and Wednesday afternoons at Trafford General Hospital. We also provide adequacy at the Ultrasound clinic in Radiology (ORC) on Wednesday mornings.

At the Christie Hospital NHS Foundation Trust, the BMS provides FNA assistance and on site specimen adequacy assessment of all types of FNA samples. The staff in the laboratory will be pleased to advise and assist on any aspect of sample collection. Please contact the department at:

- Cytology Department (ORC site), Monday to Friday between 08:00 hrs and 17:00 hrs on 0161 276 5110/5115/5116. We may also be contacted by bleep on 0762 391 6594
- Please note calls must be received by 16:15 hrs for FNA attendance.

In the absence of Cytology staff assistance, a guide to performing aspirations and making spreads is given on pages 23 and 24 respectively.

Please also see our series of short videos on the Cytology homepage or via the link

mft.nhs.uk/laboratorymedicine

- Christie hospital FNA clinics:
 - Monday, Wednesday, Thursday, Friday 09:00 hrs to 12:30 hrs
 - Tuesday 09:00 hrs to 16:30 hrs

Contact: 0161 446 3643 or 0755-411-6250 (mobile no.)

It is recommended that the support of a BMS be utilised for optimal sample preparation

7.6.1 Use of fine needle aspiration

- Patients presenting with palpable lesions in clinics (ENT, maxillofacial), outpatients and wards.
- Deep seated lesions sampled by radiologically guided techniques (Ultra Sound, CT)
- Endoscopic, endobronchial and transbronchial guided specimens

7.6.2 Equipment required for fine needle aspiration

- Standard disposable 23-25 gauge needles. A 25 gauge (orange) needle is suitable for most lesions
- Disposable 10 ml plastic syringe
- Clean container with tight lid (preferably universal) containing CytoRich® Red preservative fluid
- Standard microscopic glass slides onto which aspirate is to be spread.

7.6.3 Performing a fine needle aspiration

The non-gynaecological cytology department in collaboration with the Christie Hospital NHS

Foundation Trust has produced a series of short videos demonstrating the techniques of performing FNAs and making direct spreads. Please see our home page for these videos or follow the link

mft.nhs.uk/laboratorymedicine

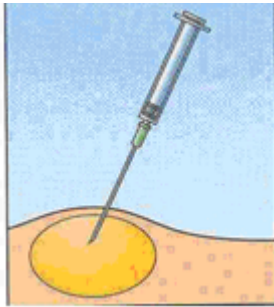
If you are unable to open the videos, please see diagrammatic representation of the above on pages 23 and 24.

See page 26 for a request form

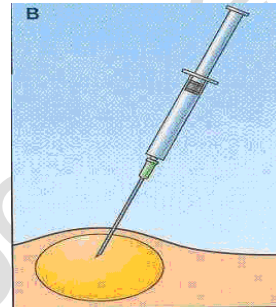
7.6.4 How to perform a fine needle aspiration

Figure taken from Fine Needle Aspiration. (2005), 4th Edition. S. Orell; G.F. Sterrett; and D. Whittaker. Elsevier Churchill Livingstone.

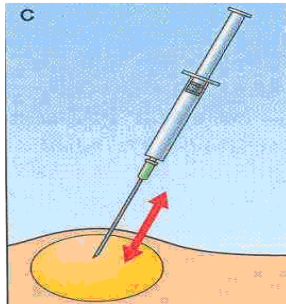
- Disinfect skin using pre-packed alcohol swabs.
- Before insertion of needle wipe away any excess ultrasound jelly with tissue paper (if U/S guided)
- Perform the aspiration according to the instructions 1 to 6



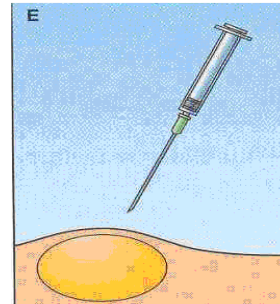
1 - Position needle within target tissue pressure



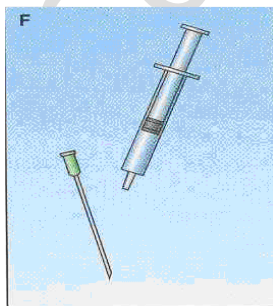
2 - Pull plunger to apply negative



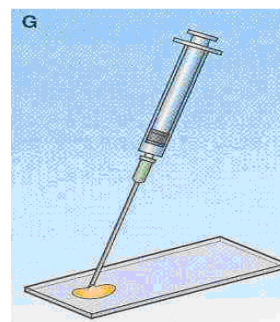
3 - Move needle back and forth inside target and withdraw needle



4 - Release negative pressure



5 - Detach needle and draw air into syringe microscope slide



6 - Push a drop of sample onto

7.6.5 Making spreads from fine needle aspiration

The ideal FNA sample is prepared as follows:

- Even monolayer spreads onto glass slides for **air-dried** 'direct spreads'
- Needle to be rinsed in CytoRich® Red preservative fluid
- 2 passes are recommended for each case
- **If Tuberculosis is suspected, please also send an aspirate to microbiology in a sterile container.**



Step 1: Having expelled a small drop of the aspirate onto a glass slide (step G above), place a clean slide (spreader) above the drop and spread gently but swiftly. Leave to air dry.



Step 2: Rinse the remaining material from the needle into the CytoRich® Red preservative fluid by repeated aspiration and expelling of the said CytoRich® Red preservative fluid



Step 3: Label container containing CytoRich® Red preservative fluid according to specimen acceptance policy (page 10) and use a pencil to label slide.

Step 4: Complete request form (see page 26), package sample (see page 11) and send to Cytology Department, Clinical Sciences Building 2, MRI

8.0 Requesting a non gynaecological cytology test via ICE at MFT

Patients needing non gynaecological cytology exfoliative cytology investigations at MFT may have their tests requested via ICE.

It is mandatory to print and send a request form with the sample.

If a sample requires multiple tests, then they will need separate ICE forms for each sample being sent for the required test.

For fine needle aspiration samples at the Christie Hospital, please complete the request form on page 26. All other sites please request using ICE if possible.

To request CSF, serous fluids including peritoneal washings, urine, cyst fluids, bile duct and bronchial samples, request investigations via ICE as follows:

- Log onto ICE and select 'requesting'
- Enter patient details
- At request screen, select 'laboratory medicine' which is located on the top bar, 3rd from left
- Select 'New Cell Path' which is located on the left bar, 7th from top
- Select 'non gynaecological cytology' located on the right under Cytopathology.
- Choose any radiological guidance and enter sample type and site as directed.
- Accept and 'continue with request' located bottom left
- Complete all fields, especially 'global clinical details'
- Review, proceed with request and **print** request form
- Send to the Cytology department via porter. Do not send any samples via the pod system.

