Pathology Department User Manual

Letterkenny University Hospital

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

GENERAL INFORMATION

CHANGES FROM REVISION 10

Section	Details of Change
Section 6	Opening hours for the Phlebotomy Department/Blood Rooms added.
Section 7.2	Typo stating refer to Section 6.1 amended to state Section 7.1.
Section 10.3:	Table 7: Adult order of draw chart updated and now includes Blood Gases. (Chart changed to landscape format.). Table 8: Paediatric order of draw changed to landscape format.
New Section 10.4.2 added	Guidelines for Irreplaceable Haematology/Biochemistry/ Microbiology Samples
New Section 10.4.3 added	Retrospective notification for wrongly labelled specimens
Appendix 4	Updated the Management of critical results for GP outsourcing samples to Eurofins Biomnis to reflect Eurofins updated documents.

Effective Date: **09.05.2025**
Review Date: **08.05.2027**

Table of Contents

1. GUIDE TO USING THIS MANUAL

This User Manual has been prepared to inform the users of the Letterkenny University Hospital, Pathology Department of which services are available and how to obtain the services required. It is to be used in association with the Departmental Manuals which include the test requirements for the associated Department. The Departmental Manuals includes a listing of the wide range of tests currently available at LUH.
These manuals may be accessed as follows:
1. For internal LUH Hospital users a controlled electronic version of the manuals is available on Saolta Live (GRUHG Live) database. Hospital QPulse in a 'read-only' format.
2. A controlled electronic version is available on the HSE website, Letterkenny University Hospital webpage section for external users. (http://www.hse.ie/luhPathology)
3. The laboratory tests and profiles you require information on can be found under the relevant departmental user guides as listed below.

Document Title	Q-Pulse Number	Website
Haematology User Manual	LP-HAEM-0043	http://www.hse.ie/luhPathology
Blood Transfusion User Manual	MP-BT-0013	http://www.hse.ie/luhPathology
Histopathology User Manual	MP-HISTO-0005	http://www.hse.ie/luhPathology
Biochemistry User Manual	LP-CHEM-0023	http://www.hse.ie/luhPathology
Microbiology User Manual	MP-MICRO-0025	http://www.hse.ie/luhPathology
Sample Transport SOP	MP-GEN-0060	http://www.hse.ie/luhPathology

It is appreciated that with the ever increasing range of test available it is difficult for the user to know which request form, specimen container, type of specimen and specific protocol required to obtain the specific investigation and result required. It is hoped that this handbook can address some of the problems encountered by clinical staff.
The handbook contains lists of relevant telephone numbers to facilitate access to appropriate consultant and senior scientific staff for advice; departmental telephone numbers are also available for result enquiries etc.
The views of users of this handbook and suggestions on how it may be improved are welcome; agreed changes in content and format etc. will be incorporated in future editions.

Disclaimer
The information provided in this User Manual is correct at the time of writing and is a broad guideline to the service provided. The manual will be updated periodically; therefore any unauthorised printed copies are uncontrolled and must not be used as the information may be incorrect.

2. INTRODUCTION

Letterkenny University Hospital, (LUH) is part of the HSE West and North West Hospitals Group, comprising of the following hospitals: Mayo University Hospital, Merlin Park University Hospital, Portiuncula University Hospital, Roscommon University Hospital, Sligo University Hospital and University Hospital Galway. The information contained in this handbook relates to the Department of Pathology services provided at LUH currently.

The Pathology Department at LUH comprises of the following disciplines:

- Blood Transfusion & Haemovigilance
- Biochemistry
- Haematology,
- Histopathology
- Microbiology/ Andrology
- Autoimmune Immunology.

The Pathology Department provides a comprehensive service to Letterkenny University Hospital, nursing homes, general practitioners and community hospitals in the region.
Any tests requests that are not carried out on site are sent to appropriate referral laboratories.
The purpose of this manual is to act as a quick reference guide for all users of the pathology services. This manual provides an overview of the services provided, advice of sample collection and transport, reference ranges, contact numbers for key laboratory personnel and opening times for individual departments.
It is the policy of the Pathology Department to ensure the treatment of patients, samples, or remains, with due care and respect.

3. QUALITY ASSURANCE

The department is committed to providing a high quality service with the minimum of delay to meet the needs and requirements of the users. To ensure a high quality service all departments have extensive internal quality control checks and participate in recognised External Quality Assessment Schemes. **The Department of Pathology** services undergo continuous review through quality assurance and audit activities. The department is committed to performing activities in accordance with the requirements of the international standard ISO15189 whereby the accreditation certificate is provided by the Irish National Accreditation Board (INAB), registration number 210MT. Further details on INAB and its role in quality assurance and accreditation can be found at http://www.inab.ie/
Laboratory Management is committed to staff recruitment, training and development at all levels to provide an effective and efficient service to its users.

Any tests not accredited to the ISO 15189 standard and not covered under the scope of INAB are clearly identified in both the user manual and on the test reports. This does not affect the validity of the results but accreditation by INAB provides organisations and their customers with confidence in the product or service being offered.

Should you, as the user of the Pathology Service, have any queries for improvements in connection with any aspect of the service provided, staff members will be pleased to discuss these with you or alternately submit your comments/ suggestions in writing to the Pathology Manager.

4. USER SATISFACTION, COMMENTS & COMPLAINTS

4.1 Complaints

The goal of Laboratory Medicine is to ensure that our users receive accurate, reliable, meaningful and timely laboratory results. It is your right as a service user of the HSE to make a complaint if you believe that standards of care, treatment or practice fall short of what is acceptable. If you need to make a complaint, we want the process to be easy, effective and fair.
In order to help you to do so please contact the appropriate Department, the Pathology Manager or the Quality Manager (refer to section 7.1 for contact details) and ask for their complaint/suggestion to be documented or via the LUH Hospital Network Complaints Officers:
https://www.hse.ie/eng/about/qavd/complaints/officers/hospital/

The HSE Policy - 'The Management of Service User Feedback for Comments, Compliments and Complaints in the Health Service Executive' can be accessed through the HSE website or by clicking on the following link:
https://www.hse.ie/eng/services/yourhealthservice/feedback/complaints/policy/

Every effort shall be made to ensure effective resolution of client complaints in a timely fashion and where possible provide the complainant with the outcome.

4.2 User Satisfaction Surveys

The Pathology Department performs regular surveys of user satisfaction. The aim of the user satisfaction survey is to achieve continuous improvement in all aspects of the Pathology Department resulting in improved clinical effectiveness. We would encourage you to partake in these surveys so that our service can reflect your views. Results of user surveys are reviewed and if deemed appropriate, quality improvements may be implemented based on the information provided by the users.

4.3 Costs

The costs of tests can be provided at users request.

5. LOCATION OF THE PATHOLOGY DEPARTMENT

Pathology Reception is located on Floor B of the hospital. Follow the signs for the Pathology Laboratory from the main Hospital reception desk. Alternatively if driving follow the signs from the main hospital entrance, taking the first exit at the mini roundabout, follow the signs for the Pathology Department.
All visitors to the laboratory should sign in at Pathology Reception.

5.1 Pathology Department Website/ Postal Address

Website: http://www.hse.ie/luhPathology
The postal address for the Department of Pathology is:

Department of Pathology,
Letterkenny University Hospital,
Ballyboe Glencar,
Letterkenny,
Co. Donegal,
Ireland.
F92 AE81

6. HOURS OF OPERATION

Department	Opening Hours	
Laboratory Office	Monday –Friday*	9 am – 5 pm
Specimen Reception	Monday –Friday*	8 am – 8 pm
Phlebotomy Department		
Blood Room OPD Scally Place	Monday –Friday*	8.30am – 4.30pm (Closed for lunch 1.00-1.30pm)
Blood Room LUH	Monday, Tuesday, Thursday	8.30am-5.30pm (Closed for lunch 1-2pm)
	Wednesday	8.30am-6.30pm (Closed for lunch 1-2pm)
	Friday	8.30am-1.00pm (Closed for lunch 1-2pm)
Blood Transfusion Biochemistry Haematology Microbiology	**Routine Laboratory Hours** Monday – Friday* 8 am – 8 pm Microbiology***	**Emergency On-call Service** Monday – Friday 8 pm – 8 am Saturday, Sunday &Public Holiday- 24 hours
Please note the emergency on-call telephone system is in place Monday – Friday from 5pm – 9 am and 24 hours Saturday, Sunday &Public Holiday.- Please refer to Section 6.1 for on call personnel phone numbers .		
Haemovigilance Service	Monday – Friday 9 am – 5 pm	
Histopathology Department**	Monday – Friday* 9 am -5 pm (Frozen Section Service 9am-4.30pm) The Histopathology Department is closed at weekends and on Public Holidays. Outside normal working hours, the Consultant “on-call” can be contacted for advice via the main switchboard at Letterkenny University Hospital (Tel: 074 9125888).	
Autoimmune Immunology	Monday – Friday* 9 am -5 pm	
* Excluding Public Holidays **Due to the difficulty in obtaining and often the unrepeatable nature of Histopathology/Cytology samples, users are strongly encouraged to contact an appropriate member of the Histopathology staff for advice and guidance, prior to taking the sample, if in any doubt as to the most appropriate sampling method to use. ***Microbiology samples cultured Saturday, Sunday and Bank Holidays from 9 am -1pm.		

Table 1: Hours of Operation

To contact the laboratory during routine hours, please refer to the specific department for contact details (please refer to Section 7). An emergency ‘on-call’ system operates outside normal hours for emergency work **only** i.e non-deferrable tests necessary for decisions regarding patient management.

6.1 On-Call Personnel Contact Details

There are three separate rotas providing the on call services (out of hour emergency services) – Blood Transfusion/Haematology, Microbiology and Biochemistry. It is essential that the scientific staff on call are contacted using the relevant telephone number below when urgent/ critical specimens are to be sent to the laboratory using the pneumatic chute/delivered directly to the laboratory.

For Urgent requests from General Practice (GP) outside of routine hours, including bank holidays and weekends, the 'on call' Medical Scientist must be contacted through LUH switchboard (0749125888) to discuss.

Please note: The laboratory MUST be contacted on these numbers from

5pm – 9am Monday-Friday, 24 hours Saturday, Sunday & Bank Holidays

To contact the laboratory during On Call hours, contact the relevant department as follows:

Haematology/ Blood Transfusion	173- 815 or via switchboard
Biochemistry	173-814 or via switchboard
Microbiology	173-816 or via switchboard

Please refer to Section 8 for details of test performed during on call periods.

7. PATHOLOGY DEPARTMENT TELEPHONE NUMBERS

7.1 Contact Details

The four digit extension numbers listed below can be dialed directly from within LUH.

Department/Position	Personnel	Phone Number	
		Prefix	***Extension No***
Letterkenny University Hospital		(074) 9125888	
Pathology Reception office		(074) 912	3557
Blood Transfusion		(074) 912	3612/3393
Biochemistry		(074) 912	3559/3663
Point of Care Office		(074) 910	4614
Haematology		(074) 912	3560
Histopathology/ Cytology		(074) 912	3561
Immunology		(074) 910	4757
Microbiology/ Andrology		(074) 912	3610/3271
Pathology Manager	Ms Jacqui Clarke	(074) 912	3558
Quality Manager	Ms Mary Mc Daid	(074) 912	3726
Consultant Biochemist	Dr Michael Louw	(074) 912	3580/3559
Consultant Haematologist	Dr Ruth Morrell	(074) 912	3660
Consultant Haematologist	Dr Maria Papanikolaou	(074) 912	2107
Consultant Haematologist Secretary		(074) 912	3799
Consultant Histopathologist	Dr G.M O' Dowd	(074) 912	3545
Consultant Histopathologist	Dr K.M. Dillon	(074) 912	3546
Consultant Histopathologist	Dr H. Gyorrfy	(074) 910	4496
Consultant Histopathologist	Dr F Sokol	(074) 910	4165
Consultant Microbiologist	Dr M Mulhern	(074) 910	4090
Consultant Microbiologist secretary		(074) 910	4479
Consultant Microbiologist (Andrology)	Dr Muna Kayalova	(074) 910	2255
Consultant Microbiologist	Dr Jayanta Sarma	(074) 910	5202
Consultant Gynaecologist (Andrology)	Dr Matthew Mc Kernan	(074) 910	4644
Chief Medical Scientist Blood Transfusion	Mr Charlie Barr	(074) 912	3612
Chief Medical Scientist Haematology	Ms Fiona Ferry	(074) 912	3619
Chief Medical Scientist Histopathology	Ms Caitriona Mc Crea	(074) 918	8896
Chief Medical Scientist Autoimmune Immunology	Ms Annette Darcy	(074) 910	4757
Chief Medical Scientist Biochemistry	Ms Francesca Patton	(074) 912	3580
Chief Medical Scientist Microbiology	Ms Judith Rodgers	(074) 910	4618
Histopathology Secretaries		(074) 912	3579
Histopathology Secretaries		(074) 910	4468/4782
Haemovigilance Officer	Ms Aoife Wilson	(074) 910	2773 bleep 400
Surveillance Scientist	Ms. Carena Mc Fadden	(074) 912	3662
Infection Prevention Control ADON	Ms. Virginia Murray	(074) 910	4203
Surveillance Nurse	Ms Martina Grealish/ Mary Gibbons	(074) 910	4099
Laboratory IT Manager	Ms Kathleen King	(074) 912	3535

Table 2. Contact Details

7.2 Clinical Advisory Services

The Pathology Department ensures appropriate laboratory advice and interpretation
Clinical Advice and Interpretation is available and can be obtained by contacting the appropriate laboratory.
Scientific staff should be consulted where uncertainty exists about the availability, appropriateness, or selection of tests, the nature of the specimen required, acceptance criteria of the test, or the interpretation of results. Refer to section 7.1 for Contact Details of Key Laboratory Personnel.

7.3 Urgent Samples

During routine hours of 08.00 to 20.00 all Biochemistry and Haematology test requests from ICU, HAEM/ONC, Oncology Day Services, HDU and the Emergency Department are treated as priority and do not require prior telephoned request, however if urgent analysis is required, please contact the Central Reception on extension 5033.
Please contact the Microbiology Department at ext 3610 for all urgent Microbiology requests including CSFs.

For Urgent requests from General Practice (GP) **outside of routine hours**, including bank holidays and weekends, the 'on call' Medical Scientist must be contacted through LUH switchboard (0749125888) to discuss.

7.3.1 Histopathology

Specimens requiring urgent reporting must be discussed and pre-arranged with the Consultant Pathologist covering "cut-up", ideally **PRIOR** to submitting the specimen to the lab. Urgent requests **must** be made by the Consultant in charge of the patient.

The request for urgent analysis must be used appropriately. Abuse of the urgent request facility will have an adverse effect on the turnaround times of genuinely urgent requests.

8. EMERGENCY OUT OF HOURS SERVICE

An on-call system operates outside normal working hours for emergency work i.e. non-deferrable tests necessary for decisions regarding patient management.

8.1 Biochemistry

Please refer to Section 5.1 for on call personnel contact details.

Biochemistry On-Call tests (On-Call Telephone number **173814**)
Antibiotic Assays :(assayed 08:00-20:00, 7 days). Renal samples are assayed up to 12 midnight.
Amikacin :(assayed 08:00-20:00, 7 days).
Amylase
BHCG (8am -8pm, 7 days)
Blood gases * (including carbon monoxide) available on Point of care
Bone Profile
CK & Troponin T
CRP
Glucose
Interleukin-6
Iron (for Overdose)
Lactate**
Liver Profile
Osmolality****
Paracetamol/ Salicylate/ Alcohol
PLGF
Pro- calcitonin- All wards except ICU- orderable by Consultant phone request only
Pro-calcitonin- ICU ONLY – Available without phoning if requested on form
Renal Profile
Uric acid for antenatal patients
Urine Sodium
Xanthochromia***

Table 3. *Biochemistry* ***tests available on call***

*Biochemistry On call MUST be contacted prior to sending blood gas specimen. Failure to do so may result in specimen not being processed. Blood Gas is available on the wards as part of Point of care testing.

**Lactate available on Blood gas

***Processed in Altnagelvin, must contact lab immediately

****Contact the on call Pathologist for Biochemistry

- Tests other than those listed above will be separated and stored and processed during the next routine hours.
- However, in the event that specialized tests are required to be processed during On-call hours e.g. Urine Organic Acids or any specimens that must be sent on ice, clinicians MUST contact Biochemistry On-Call to pre arrange.
- For further requests tests may be performed if the Consultant Pathologist has been contacted by the requesting clinician and the Pathologist On-call has determined that the tests are sufficiently urgent to perform on-call.

8.2 Haematology

During 'on call' periods the following tests are routinely available:

- FBC
- Coagulation Screen/ INR
- Fibrinogen Assay/DDimers
- Routine ESR, the Haematology on call medical scientist must be contacted by phone if the ESR is specifically for Temporal Arteritis and Osteomyelitis.

The following tests can be performed on-call under predefined circumstances. Please contact the Medical Scientist on call if requesting any of these tests:

- Malarial Parasites
- Sickle Test
- Infectious Mononucleosis Screen
- Thrombin Time

8.3 Blood Transfusion

It is hospital policy to avoid routine transfusions out of hours. The out of hours transfusion service provided only applies to emergencies and to situations where patients cannot wait until the next routine period.

Tests provided out of hours in this laboratory will be identified by the presence of this symbol ∗ in the turnaround time column in Table 6. If any other test is required "out of hours" the person requesting the test should contact the Haematology/Blood Transfusion Medical Scientist "on-call".

8.4 Microbiology

The Microbiology laboratory provides an out of hours on call test service. Clinical microbiology advice is also available out of hours, contact Main Switchboard for contact details of Consultant Microbiologist. Table 4 provides a guide to the tests available pre and post-midnight and the criteria used for selection.

Microbiology Tests available on call	
Pre-midnight	**Post-midnight**
• CSF • Blood Cultures • Sterile fluids, tissues. • GeneXpert respiratory viral swabs • Urgent Paediatric Urine Microscopy and culture • Urinary Legionella antigen screen • Urinary Pneumococcal antigen screen	• CSF • Blood Cultures • GeneXpert respiratory viral swabs

Table 4. Microbiology tests available on call

Requests for other tests should be referred to the Consultant Microbiologist.
The microbiology Medical Scientist on call must be contacted prior to sending any urgent request on call. (All CSF requests must be phoned prior to sending on call).
They are contactable through Main Switchboard/ 173-816.

9. PATIENT CONSENT

All procedures carried out on a patient need the informed consent of the patient. This should be obtained as per 'National Consent Policy'. It is the responsibility of the clinician to explain the clinical procedure to be performed to the patient. For most routine procedures, consent can be inferred when the patient presents himself or herself with a request form and willingly submits to the collecting procedure e.g. venepuncture. Patients in a hospital bed should normally be given the opportunity to refuse. Special procedures, including more invasive procedures, or those with an increased risk of complications to the procedure will need a more detailed explanation and in some cases, written consent. In emergency situations, consent might not be possible; under these circumstances, it is acceptable to carry out the procedure, provided they are in the patient's best interest. For a number of tests, specific consent forms are required, primarily genetic tests. Where consent forms are required to be completed, this is stated in the departmental user manual requirements for the particular test.

Please refer to the HSE website for further information which includes the document 'Consent: A guide for patients and service users'.

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10. POLICY ON REQUEST FORM, SPECIMEN LABELLING & TEST REQUESTS

Please note samples requested from Web Doctor will not be processed by the Pathology Department.
This policy applies to all specimens being submitted for analysis within the **Biochemistry/ Autoimmune Immunology/ Haematology and Microbiology** disciplines.

Blood Transfusion: Please refer to the Blood Transfusion Manual (MP-BT-0013) for additional requirements for sample and form labelling.
Histopathology: Please refer to the Histopathology Manual (MP-Histo-0005) for Histopathology requirements for sample and form labelling

The purpose of the policy is to ensure:

- Uniformity of requirements across all disciplines within the laboratory in line with INAB and ISO 15189 Standards.
- Information on both the Request Form and the corresponding clinical specimen is sufficient to unambiguously link the two together to ensure the correct results/products are issued to the correct patient.
- Information is legible and written in pen.
- The Laboratory receives adequate information on the Request Form to permit correct analysis and interpretation of results such as clinical information relevant to affecting sample collection, examination performance or result interpretation (e.g. history of administration of drugs), travel history for Malaria results.
- The Laboratory records accurate and complete patient and specimen identification for each request received

10.1 REQUEST FORMS

It is important that the correct form is supplied for a particular test. There are a number of different request forms used for different analyses as outlined in Table 5. A completed request form must accompany all samples. The laboratory has combined Blood Sciences (Haematology and Biochemistry) request forms in addition to a number of different request forms which are colour coded for specific departments. Please use the request form for the appropriate department/s as outlined below.

All requests for Histological/Cytological examination must be made using the correct version of the blue, controlled Histopathology/Cytology request card (MF-0370). The General Laboratory request form **MUST NOT** be used.
Requests made on unapproved forms will not be processed.
Specific request forms must accompany referral tests for Cytogenetics, Immunophenotyping and Cancer Molecular Diagnostic testing. Copies of these forms are available from the Haematology Laboratory.
Please ensure that relevant clinical details are included on the request form.

10.1.1 Completed Consent Forms

Some referral/specialized tests require a completed consent form, refer to individual laboratory department sections of this manual or applicable laboratory for guidance.

Specimens will not be processed where required consent form is not provided.
Specimens may be processed upon provision of this information within a reasonable timeframe at discretion of individual laboratory.

Requirements	Request Form
Blood Transfusion Tests	**MF-0230-** Blood Transfusion Request Form
Biochemistry and Haematology Tests (Hospital Requests)	**MF-0342-** Hospital Haematology/ Biochemistry/ Immunology Request Form
Biochemistry and Haematology Tests (GP Patients)	**MF-0368-** GP Haematology/ Biochemistry/ Immunology Request Form
Histopathology/ Cytopathology Requests	**MF-0370- Histopathology/Cytology Request form**
Microbiology Requests (Non-hospital)	**MF-0538- Microbiology Non-Hospital Request Form**
Microbiology (Hospital) Requests	**MF-0539-Microbiology Hospital Request Form**
Chronic Disease Management	**MF-0841 CDM Request form**

Table 5: Request Forms

10.1.2 Completion of Request Form (Haematology/ Biochemistry/ Microbiology Only)

PHLEBOTOMY SHOULD NOT PROCEED UNTIL PHLEBOTOMIST IS SATISFIED AS TO THE CORRECT IDENTITY OF THE PATIENT.

For accurate identification of patients and specimens, it is essential that requests forms be completed fully, legibly and accurately. The use of patient addressograph labels on request forms is recommended.
Specimens cannot be processed unless the request form is completed in full. The essential information on the request form:

Table 6: Mandatory Labelling Criteria for Request Forms

	Haematology/ Microbiology/Biochemistry Mandatory Labelling Requirement:	Laboratory Action if acceptance criteria not met:
Request Form Mandatory Criteria	Handwritten request forms must be labelled with (3 out of 3) Addressograph may be used providing 1 and 2 are included. **1.Patient's PCN[1]** **2.Forename & Surname** **3.Date of Birth** Must be legible and correct and match specimen details	Specimen rejected
	GP Request Forms **1.**Patient's Forename & Surname **– Mandatory** **And at least 2 of the following identifiers:** **2.**Patient's PCN/ GP number [2] **3**.Patient's DOB **4**.Patient's Address **Three unique identifiers must be provided.**	Specimen rejected
	Date and time of sample collection	Specimen rejected
	Gender[3]	Specimen rejected[3]
	Investigations requested, Must be written legibly.	Specimen rejected[5]
	Requesting Clinician (GP/ Consultant) e.g., Dr Example inc MRCN Number & signature/ stamp	Specimen rejected[4]
	The Location of the patient / to where the results should be reported.	Specimen rejected[4]
	Clinical Detail Relevant clinical details must be provided. All requests for coagulation testing must include details of patient's anticoagulant therapy. Confirm that the patient is fasting if required. Specimen type and anatomical site of origin where applicable (for all non-blood biological samples).	Specimen rejected[5]
	Unidentified Unresponsive/ Unconscious patient 1. Unconscious Male/ Female Adult Unconscious Male/ Female child as relevant 2. Emergency Chart Number /unique identification number.	Specimen rejected

[1]Or proper **coded** identifier (e.g. in the case of sensitive tests)

[2] PCN/ GP number can only be used as an identifier if patient is historically registered on LIS.

[3] If gender is not stated, nor is it obvious from the stated forename and not available historically, seek advice from Senior Medical Scientist[4],

[4]Specimens may be processed upon provision of this information within a reasonable timeframe at discretion of individual laboratory

[5]**Microbiology only:** Senior Medical Scientist may decide based on their professional judgement from the information supplied if sample may be processed. If not, order test code: MIRF (Sample not tested as request form received with it was inadequately completed. Specimen type, clinical details AND test requested must be provided)

If a specimen is urgent please indicate on the request form and the request will be prioritized. If results are extremely urgent please contact the relevant department to discuss your requirement. Overuse of the urgent service will adversely affect the turnaround time for all urgent tests.

Please note that inadequate information on request forms makes it impossible to issue a hard copy report to the correct location or contact the doctor in case of urgent or unexpected results.

10.1.3 Neonatal Specimens

- When requesting investigations on new born babies, to prevent specimen rejection the baby's PCN, date of birth and name must be used, not the mother's details.
- Request forms and specimens must be labelled with the baby's current details at the time of sampling.
- For multiple births, the mandatory requirements are surname, DOB, unique identification number (Hospital number) PLUS twin/triplet number.

10.1.4 Patient Registration

Samples from patients who do not have a current active episode available on the Laboratory Information System (LIS) will NOT be processed until an episode becomes available. The Pathology Department will telephone the ward in such instances requesting that the patient is registered. The ward is requested to register all patients as soon as possible in order to prevent delays occurring in the processing of the patients bloods.

10.2 SPECIMEN COLLECTION

It is the responsibility of the person taking the sample (doctor, nurse or phlebotomist) to ensure the laboratory is provided with complete and accurate patient identification details on **both** the **sample request form** and **specimen container** in addition to

- Ensure that all appropriate sterile equipment is within date and all packaging is intact.
- Explain procedure and rationale to patient answering any questions, thus ensuring an informed verbal consent is obtained.
- Check patient identification. Ask the patient to state their name, ask the patient to state their Date of Birth
- Check Patient Identification Number (PCN) on request form with the wristband
- Confirm that patient is fasting if required.
- Take samples into the appropriate specimen containers for the test required.
- Ensure that sufficient specimens are collected (check with laboratory if in doubt)
- Dispose of all needles into sharps bins when finished sampling.
- Dispose of all contaminated material into biohazard bins
- Label the specimen container.

- Ensure the form is properly completed.
- The identity of the person collecting the sample should be stated on the request form.

Microbiology Samples:

- Collect specimens before commencement of antimicrobial therapy. This is usually possible for most mild infections. For more serious infections, antimicrobial therapy should not be withheld pending collection of a specific specimen. For example, antimicrobial therapy should not be withheld pending collection of CSF from an individual with suspected meningitis or collection of sputum from an individual with severe pneumonia. However, blood cultures can be obtained in nearly all cases prior to antimicrobial treatment of serious infection.

- If in any doubt as to the appropriate container, please contact the laboratory for advice.

- Please send an adequate amount of specimen. As a general rule – 'the more specimen the better'. If pus is present, send pus rather than a swab and remember to send enough specimen if a whole series of tests are required. This applies to CSF and serology specimens in particular.

N.B. ALL SPECIMENS MUST BE LABELLED IN THE PRESENCE OF THE PATIENT

10.3 SPECIMEN CONTAINERS AND ORDER OF DRAW

Anticoagulants present in specimen bottles may cause problems if carried over from one type of container to another. Fill the containers in the correct order as outlined in Table 6. Order of Draw of Blood Tests.

Below is a quick guide (Table 7(Adults) and Table 8 (Paediatrics)) to the container type and the correct draw order. A more comprehensive list of the tests, container type required and special precautions tests is available in the relevant Departmental User Manual.

NOTE: Blood Cultures must be drawn first:

When taking blood cultures observe standard precautions, wash hands, wear sterile gloves. Carefully disinfect the skin with alcohol and allow to dry. Insert needle (winged set) into vein, collect 10ml of blood into the aerobic and 10ml into the anaerobic blood culture bottle. The order of inoculation is dependent on the collection method. When using a winged set the aerobic bottle is inoculated first followed by the anaerobic bottle. If using a needle and syringe, the anaerobic bottle is inoculated first followed by the aerobic bottle.

Specific aerobic bottles are available for paediatric patients. Fill volume is dependent on patient weight.

TABLE 7: ADULT BLOOD COLLECTION TUBE GUIDE AND ORDER OF DRAW

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Adult Blood Collection Tube Guide & Order of Draw

Letterkenny University Hospital

Saolta
Grúpa Ollscoile Cúram Sláinte
University Health Care Group

Blood Cultures, if required, must be drawn prior to any other sample

Cat. Number	Specimen Volume	Order of Draw	Closure Colour	TUBE CONTENT	ASSAYS	MIXING INSTRUCTIONS	SPECIAL INSTRUCTIONS
	Up to 10ml in each Bottle	1		Culture Media	Blood Cultures		Do NOT remove barcode Fill aerobic bottle first
454334	3ml	2		Trisodium Citrate Solution	Coag Screen, INR, D-Dimer, Fibrinogen, Thrombophilia Screen,	After Blood Collection,Invert tube 8-10 times	Fill tube to Arrow Line - Inadequately filled tubes CANNOT be used. Venous Sample Only
456018	5ml	3		Serum Gel	General Biochemistry Tests, Immunology & Virology Tests.	After Blood Collection, Invert tube 8-10 times	
456088	6ml	4		Lithium Heparin	General Biochemistry Tests for Patients on Heparin	After Blood Collection,Invert tube 8-10 times	
454217	3ml	5		EDTA	FBC, ESR, HBA1c, PTH, Microbial PCR,Malaria Parasites, Sickledex, Reticulocyte Count, , Haemochromatosis, Ammonia	After Blood Collection,Invert tube 8-10 times	Ammonia MUST be Transported on ICE
456252	6ml	6		EDTA	Group & Screen, Crossmatch, Cold Agglutinin,HLA Typing, Coombs Test	After Blood Collection,Invert tube 8-10 times	Use Blood track specimen collect label OR handwritten details only. No Addressograph labels.
454238	2ml	7		Fluoride Oxalate	Blood Glucose & GTT, Lactate	After Blood Collection, Invert tube 8-10 times	Specify Collection Time & State if sample is RANDOM or FASTING, Lactate is also available on Blood Gas
456080	6ml	8		Sodium Heparin	Trace Metal Analysis	After Blood Collection,Invert tube 8-10 times	Take ONLY when specifically requested
3300-24		9			Blood Gas	Mix thouroughly by rolling or inverting but do not shake	Remove Holdex from cannula and attach blood gas syringe directly to cannula

Table 8: Paediatric Blood Collection Tube Guide & Order of Draw

Blood Cultures, if required, must be drawn prior to any other sample

Cat. Number	Specimen Volume	Order of Draw	Closure Colour	TUBE CONTENT	ASSAYS	MIXING INSTRUCTIONS	SPECIAL INSTRUCTIONS
	Up to 4ml	1		Culture Media	Blood Culture		Do NOT remove barcode
41.1350.005	1.3ml	2		Trisodium Citrate Solution	Coag Screen, INR, D-Dimer, Fibrinogen, Thrombophilia Screen	After Blood Collection,Invert tube 8-10 times	Fill tube to Arrow Line - Inadequately filled tubes CANNOT be used. Venous Sample Only
450549	0.5-1ml	3		Serum	General Biochemistry Tests, Immunology & Virology Tests	After Blood Collection, Invert tube 8-10 times	
450551	1ml	4		Lithium Heparin	General Biochemistry Tests for Patients on heparin	After Blood Collection,Invert tube 8-10 times	
450546	1ml	5		EDTA	FBC, ESR, HBA1c, PTH, Microbial PCR, Malaria Parasites, Sickledex, , Reticulocyte Count, Haemochromatosis, Amonia	After Blood Collection,Invert tube 8-10 times	Amonia MUST be Transported on ICE
456252	6ml	6		EDTA	Group & Screen, Crossmatch, Cold Agglutinin, HLA Typing, Coombs Test	After Blood Collection,Invert tube 8-10 times	Use Blood track specimen collect label OR handwritten details only. No Addressograph labels.
450541	2ml	7		Fluoride Oxalate	Blood Glucose Levels & GTT, Lactate	After Blood Collection, Invert tube 8-10 times	Specify Collection Time & State if sample is RANDOM or FASTING, Lactate is also available on Blood Gas

Microbiology Sample Containers---please refer to Microbiology User Manual MP-GEN-0025
Histopathology Sample Containers-please refer to Histopathology User Manual MP-HISTO- 0005

Sample Volumes

It is preferable that blood tubes, especially those containing preservatives, are filled to their stated capacity. This avoids the risk of insufficiency or interferences from excess concentrations of preservative. This is mandatory for some tests, e.g. coagulation tests where underfilling or overfilling invalidates the test.

10.4 SPECIMEN LABELLING

N.B. ALL SPECIMENS MUST BE LABELLED IN THE PRESENCE OF THE PATIENT

Specimen tubes must be labelled immediately after they are drawn and must never be pre-labelled.

	Haematology/ Microbiology/ Biochemistry Mandatory Sample Labelling Requirement:	Laboratory Action if acceptance criteria not met:
Specimen Mandatory Criteria	**Internal Specimens** Handwritten must be labelled with 3 identifiers 1.Patient's PCN* (Mandatory) 2.Forename & Surname 3.Date of Birth 1 & 2 are acceptable for Hospital generated labels.	**Specimens will be rejected** Where the specimen is repeatable/ reproducible, no analysis will be performed and the specimen will be discarded. The event will be recorded on the LIS. **However;** • Where the specimen is unrepeatable/ irreproducible, the risk to the patient of rejection of the specimen must be weighed against the risk of acceptance of an inadequately labelled specimen, Clinician must complete MF-0025 Disclaimer form. *(See Section 10.4.2)
	GP Samples: 1. Patient's full name. 2. DOB and/or Hospital Number/ GP number/ Patient's full address. **Two unique identifiers are required.**	
	The request form data **MUST** match the above information on the specimen	
	Specimen type and anatomical site of origin where applicable.	Specimen rejected unless the required information is provided on the accompanying request form.[5]

Table 9: Mandatory criteria for Specimen Labelling

[5]**Microbiology only:** Senior Medical Scientist may decide based on their professional judgement from the information supplied if sample may be processed. If not, order test code: MIRF (Sample not tested as request form received with it was inadequately completed. Specimen type, clinical details AND test requested must be provided).

***Please note in general that specimens of Blood would not normally be classified as 'Unrepeatable'.**

Examples of unrepeatable/irreproducible specimens would include:

- Paediatric specimens <7yrs of age
- Bone marrow, CSF specimens, tissues and other fluids obtained by invasive procedures (**NOT blood specimens**).
- Dynamic function test specimens.
- Specimens collected in an acute situation where the clinical status of the patient may have changed e.g. drug overdose, hypoglycaemic episode, commencing anti-coagulant therapy, mast cell tryptase, complete loss of venous access such as severe burns.·
- Specimens for culture from normally sterile sites where antibiotic therapy has been subsequently started e.g. blood cultures
- Post Mortem specimens where recollection is not possible.

(This list is not intended to be exhaustive)

10.4.1 Sample Rejection

Samples are rejected in the following circumstances:

- Do not meet the sample labelling acceptance criteria
- Leaking specimens
- Incorrect/ Insufficient specimen for test requested
- Specimen tube out of date.

10.4.2 Guidelines for Irreplaceable Haematology/Biochemistry/ Microbiology Samples

Critical/irreproducible specimens may be processed at the discretion of a Medical Scientist from the relevant department/ Pathology Manager following completion of MF-0025 Disclaimer form. The requesting clinician will be required to complete MF-0025 Disclaimer Form stating the reason why the labelling error occurred for full accountability and traceability.

Specimens will not be processed and/or the results released until this form has been completed in the Laboratory.

The Medical Scientist must also sign the completed disclaimer form. The final Pathology Department results will have the following comments appended:

Biochemistry/ Haematology:
'*Due to its unrepeatable nature, this sample was accepted by the laboratory without fulfilling full sample acceptance criteria. As a consequence all results should be treated with caution'.*
Name of staff member who completed the disclaimer form will also appear on the test report.

Microbiology Samples:
Due to its unrepeatable nature, this sample was accepted by the laboratory without fulfilling full sample acceptance criteria. As a consequence all results should be treated with caution)' Sample labelled and disclaimer form signed by a member of ward staff

10.4.3 RETROSPECTIVE NOTIFICATION FOR WRONGLY LABELLED SPECIMENS

In the circumstances where bloods are taken from patient A but labelled as patient B, the laboratory must be notified immediately upon discovery.

- Ward/GP staff informing of error **must complete MF-0892 disclaimer**. Samples will not be cancelled until Pathology Department receives completed MF-0892.
- Authorising Medical Scientist responsible to ensure all tests with incorrect details are cancelled.

If results have already been issued, these are cancelled and the following code is appended to the amended report-'Released results cancelled due to retrospective notification. Specimens and forms were **mislabelled at point of collection**. Lab notification date and notifier: **-;Free text date and name of notifier'**

- An amended report will be sent to the requesting physician.

10.5 High Risk Patients and Danger of Infection Specimens

All biological specimens are handled as though each specimen is a high-risk danger of infection specimen. However all specimens from suspected or known cases of TB, CJD, Hepatitis B & C,

AIDS and HIV infection etc. must be treated as high risk specimens and a special biohazard label must be attached to both the appropriate specimen container and request form. The laboratory should be contacted before sending such specimens. Blood specimens from high risk patients must be taken by experienced staff. Gloves must be worn during venepuncture and the use of plastic aprons and eye protection is also advised, if considered appropriate. In known cases of high risk, please advise laboratory of the risk by using the yellow high risk labels, attach to request form and specimen.

Histopathology Requirements:

Category 3 Samples-
A "BIOHAZARD" sticker:
MUST be placed on Histopathology / Cytology sample containers **and** request forms of any specimen from a patient who is known to have, or is being investigated for, any of the following:

- Jaundice of unexplained origin
- HIV
- Hepatitis B or C
- Tuberculosis
- Viral Haemorrhagic Fever
- History of I.V. drug abuse
- Severe Acute Respiratory Syndrome (SARS)

It is desirable that the nature of the infection be stated in the clinical information section of the blue Histopathology/Cytology request form.

The sample **MUST** undergo a minimum of 24 hours fixation before cut-up and processing.

High risk samples, without appropriate biohazard labelling, pose a serious health and safety risk to laboratory staff; consequently, they will not be processed until a member of the clinical team attends and appropriately labels the case.

10.6 LEGALLY CHANGED SURNAMES

Where a patient surname has changed e.g. marriage, the Medical Records department must be provided with written confirmation. This should be done with the next sample sent to the Pathology Laboratory so that the Laboratory information system (LIS) is updated accordingly. Specimens will not be processed until written confirmation is received and the IPMS and LIS are updated. Written confirmation must include; Previous full name, current full name, DOB, PCN, and address, on GP headed notepaper, signed by GP/ patient's Consultant/ Secretary.

10.7 Haemolysed Samples

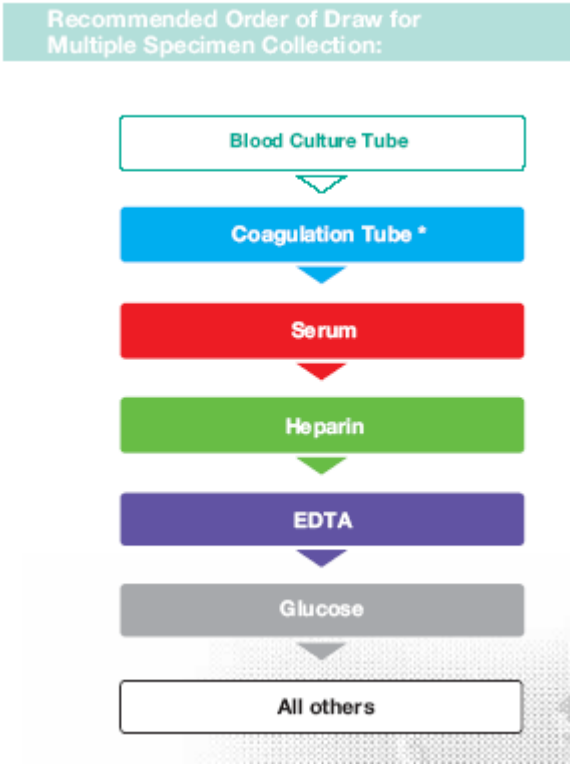
Factors in performing venipuncture, which may cause haemolysis include:

- Using a needle with a small diameter (e.g. 23 gauge or more)
- Using a small needle with a large vacutainer tube.
- Using an improperly attached needle and syringe so that frothing occurs as the blood enters the syringe.
- Pulling the plunger of a syringe back too quickly
- Shaking or vigorous mixing of blood collection tubes.
- Forcing blood from a syringe into a blood collection tube, especially through a needle. Failure to allow the blood to run down the side of the tube when using a syringe to fill the tube.
- Failure to allow alcohol swab to dry
- Drawing from site of haematoma
- Very slow flow into tube
- Drawing blood from indwelling line

10.8 Contamination, interfering factors and specimen storage

!!! AVOID CONTAMINATION !!!

- When taking a series of blood specimens, it essential that the Order of Draw is followed.
- Failure to adhere to this sequence will lead to contamination of blood specimens with anticoagulants/preservatives.
- This contamination produces spurious and invalid results in major biochemical parameters.



- Avoid haemolysis, drip contamination, over-heating and prolonged venous constriction.
- Ensure thorough and instant mixing of blood with anticoagulant (heparin, fluoride EDTA or potassium EDTA) for plasma specimens.
- Do not transfer blood from one tube to another,ex. EDTA to Lithium heparin.
- Do not leave Clinical Biochemistry blood specimens in the fridge (4°C) or overnight at room temperature without prior centrifugation.

Please refer to individual user manuals for further instructions on sample storage.

10.9 VERBAL REQUESTS

It is lab policy not to routinely accept verbal requests except in exceptional circumstances where blood components/ products are required in emergency life threatening situations, these must be followed up with a signed request form and where applicable sample adequacy confirmed i.e sample volume, age, time requirements post the last transfusion are met. The request form should be received before the verbal test request is resulted onto the LIS and /or products released.

Other verbal add on requests will only be processed at the discretion of the Laboratory Manager/ Consultant Pathologist/ Haematologist/ Microbiologist. If accepted these must also be followed up with a signed request form and where applicable sample adequacy confirmed.

11. SAMPLE ACCEPTANCE/ REJECTION POLICY

In order for any sample to be accepted for processing, it must meet certain acceptance criteria. Sample Rejection Policies are also detailed in the respective section of the manual however it must be stated that exclusions for this policy exist for precious/ irretrievable primary specimens (section8.4).

11.1 Quality of Blood Specimens

It is important that specimens are received in optimum condition and with relevant clinical information in order to ensure accurate results and interpretation of same.

Laboratory personnel inspect, prior to testing, each blood specimen received for:-

- Adherence to sample labelling requirements
- Evidence of Haemolysis
- Gross Lipaemia
- Presence of clots in anticoagulated samples
- Adequacy of sample for testing, e.g. bottle filled to correct level.
- Age of sample
- Transport/ storage of sample
- Correct labeling of samples e.g timed samples.

If the quality of the sample is inadequate, a repeat specimen will be requested. Details of reason for sample rejection are entered on the Laboratory Information System (LIS) and are available to requestor on both LIS and final hard copy report.

11.2 Sample Stability/ Receipt of samples

All samples should be received into the Laboratory on the same day that they were taken. Failure to do this may render the sample unsuitable for analysis (for example potassium, FBC). In some circumstances, there is a requirement for the sample to be received within a shorter timeframe, and additional collection criteria may apply (such as transporting on ice). Storage of samples in the fridge will also render some tests unsuitable (for example Coagulation samples). Please ensure all samples are sent to the lab on the day of collection. Refer to Test Requirements in the relevant departmental manuals (listed in Section 1) for information about specific tests. In

instances where delay in receipt of a sample means that the sample is unsuitable for analysis, the reason for rejection will be given, and a repeat sample may be requested. The validity of results requires adherence to pre-analytical sample guidelines as outlined in the Pathology User manuals, together with correct sample storage and transport conditions.

12. STORAGE OF EXAMINED SAMPLES

Following examination, samples are stored at optimum temperature for specified times.

13. REGISTER OF USERS

All GPs who wish to submit specimens for analysis to the Laboratory must be included on the Laboratory Medicine register of users. All GPs must obtain, complete and submit a User Registration form. Please ensure the laboratory is kept updated of any changes to your contact details.

14. DELIVERY, PACKAGING, TRANSPORT AND POSTAL REQUIREMENTS FOR DIAGNOSTIC AND INFECTIOUS SAMPLES TO THE LABORATORY

14.1 Health and Safety

It is the policy of the Pathology Department to treat all specimens and samples as potentially infectious or high risk. Therefore, it is essential that precautions in the collection, packaging and the delivery of specimens are undertaken when preparing and sending specimens to the Laboratory for analysis.
Specimens should be transported as soon as possible to avoid specimen deterioration and to ensure optimal results. The instructions for the transport of specimens to the Laboratory are described in a separate procedure for Sample Transportation: **MP-GEN-0060**, which is available on Q-Pulse and also available on http://www.hse.ie/luhPathology

All specimen containers must be tightly closed and placed in a transparent hazard bag for transport to the laboratory.

It is the responsibility of the person dispatching the specimen to the laboratory to ensure that it is packaged correctly, and does not pose a risk to anyone coming in contact with it during transport or on receipt in the laboratory.

Please refer to the relevant departmental manuals for specific sample storage instructions.

14.2 Disposal of Waste Material Used in Specimen Collection

All materials used in specimen collection should be treated as potentially hazardous and discarded using sharps containers. Please refer to the current hospital guidelines for Waste Management prepared by the Infection Control Committee.

15. REPORTING OF RESULTS

15.1 Reporting of Results within the Hospital

All results (except Histopathology-please see below), once released, are available for look-up on Sunquest for Nursing staff and ICM for Clinical Staff. Staff who require access to results will be given individual log-on by the Hospital IT Department. Hard copies are released when printed and are sent to pathology reception for delivery to the hospital wards.

15.1.1 Sunquest Laboratory Information System Ward Access

15.1.1.1 Accessing Lab Results

- The simplest way of going through this process is to think of it as four separate stages:

1. Log onto the system
2. Identify the patient.
3. Identify the Time period within which you want to look at results.
4. Identify the results you want to review

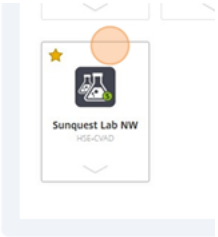
15.1.1.2 Logging onto the lab system

Access to the Sunquest Laboratory Information System is via Citrix

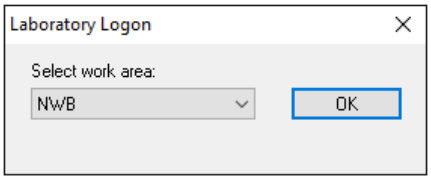
Log on to the Citrix Storefront (where you access iPMS and iCM)

1. Navigate to https://storefront.healthirl.net/Citrix/AppStoreWeb/
2. Log in with your **personal account**

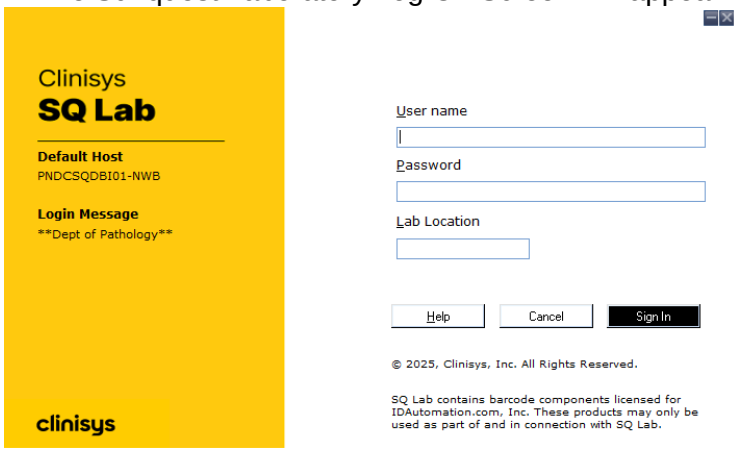
3. Click on the Sunquest Lab NW Icon



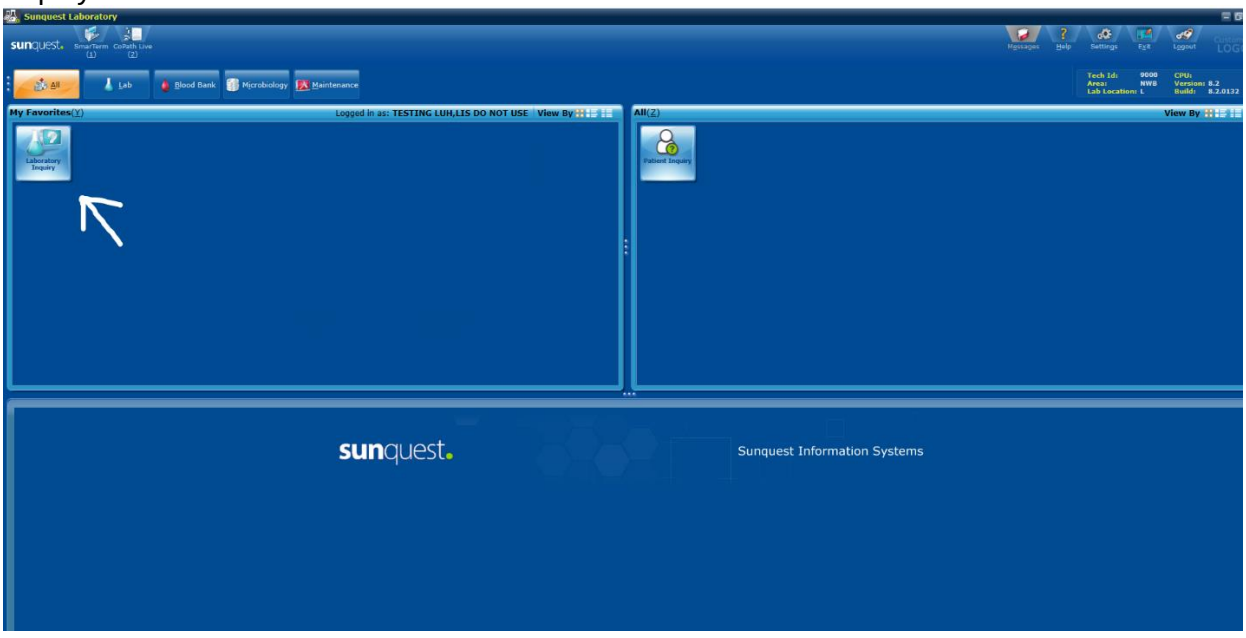
Click OK on this Screen



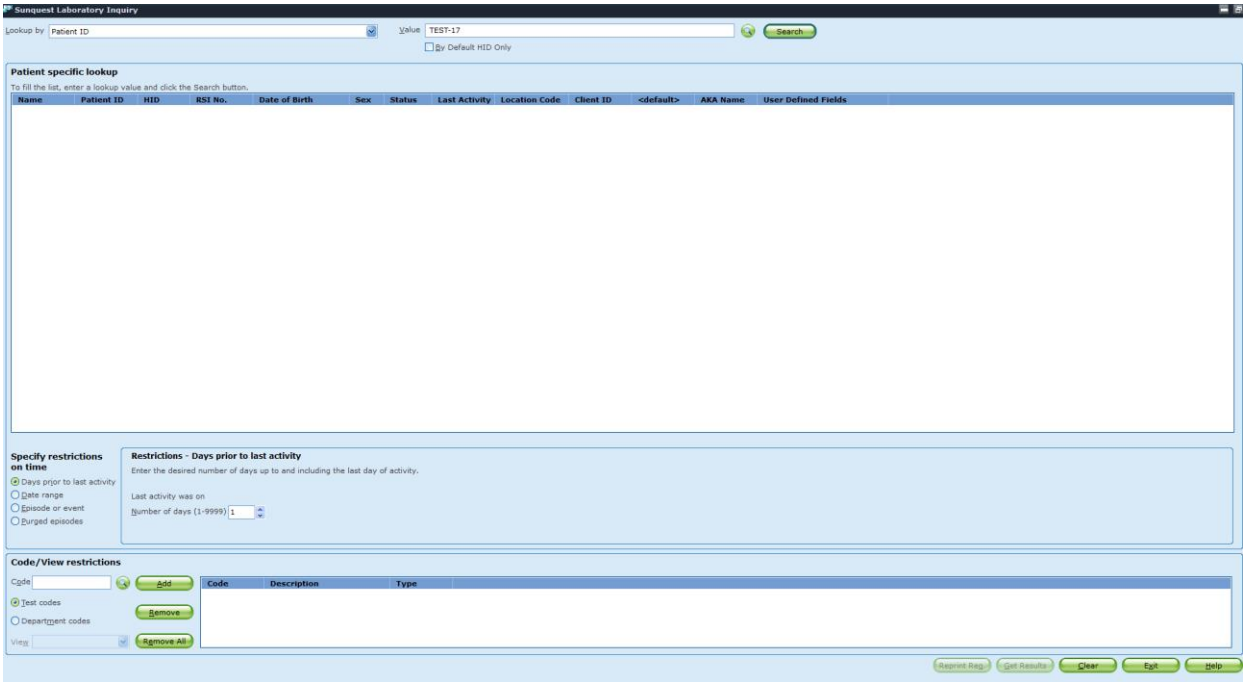
4. The Sunquest Laboratory Log On Screen will appear



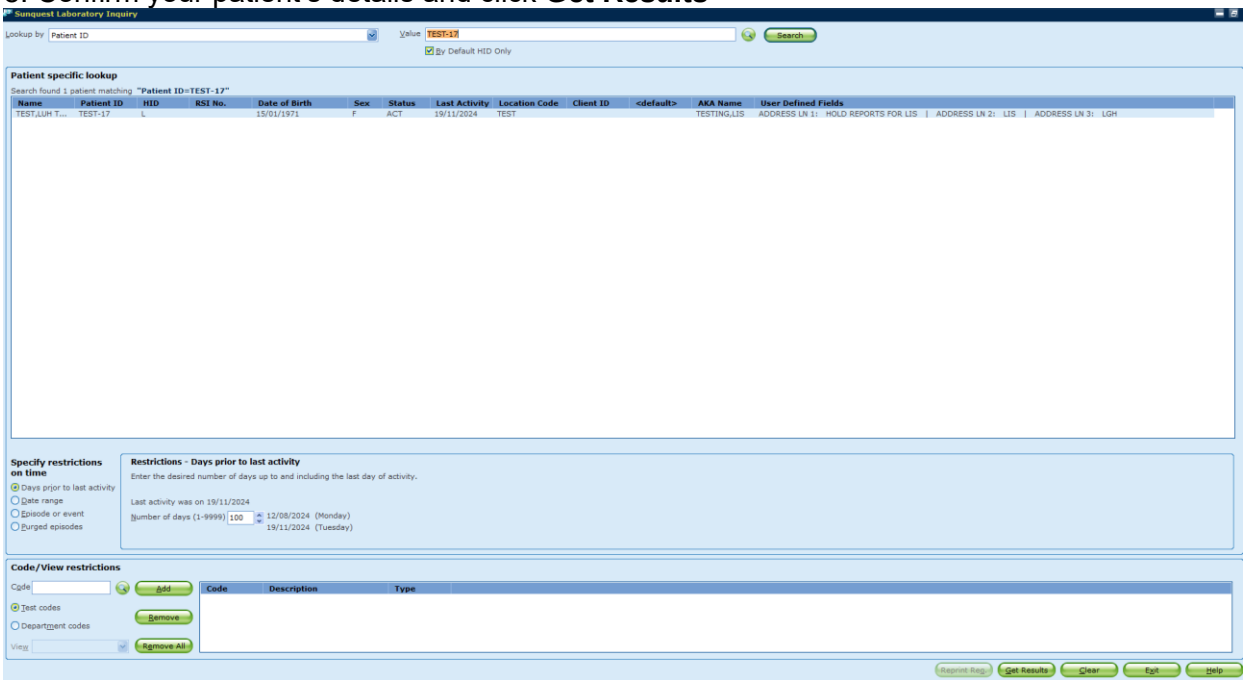
5. Your USER ID and PASSWORD is the same one you used in LAB73 or has been issued to you.
LAB LOCATION is **L**
6. When the gateway launches you will see some application icons. You will choose Laboratory Inquiry.



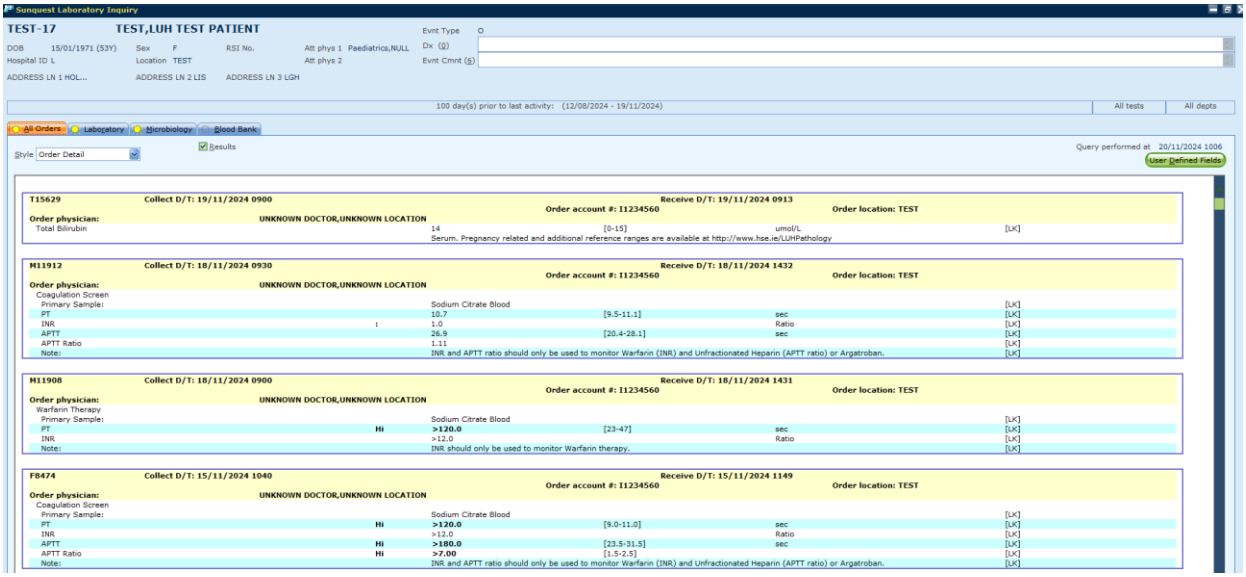
7. Enter your patient's PCN, and date range (up to 9999 days). You can use Date Range or by Episode but most used is Days Prior to Last Activity. Click **SEARCH**



8. Confirm your patient's details and click **Get Results**

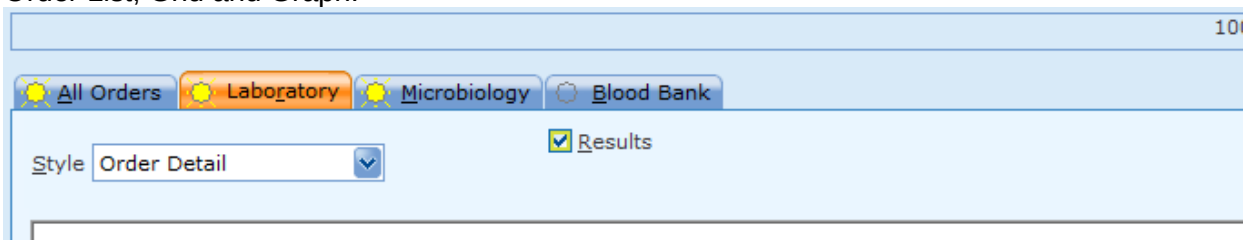


9. Access results on the All Orders Tab

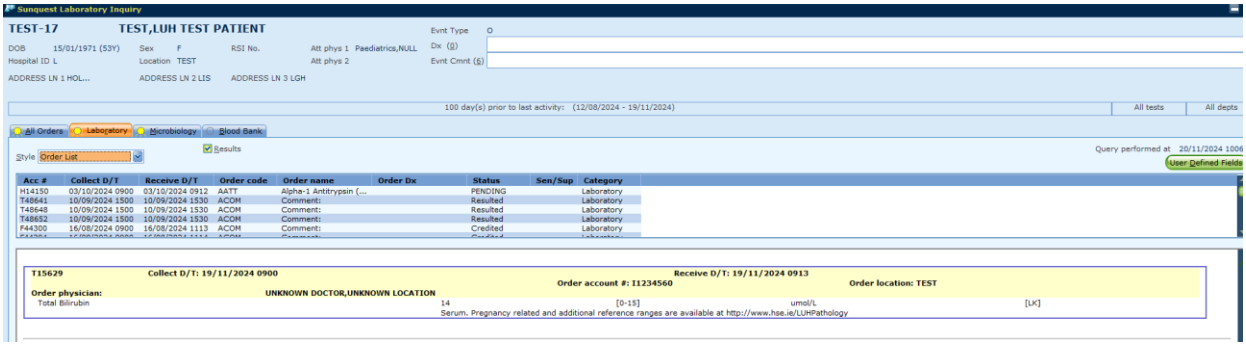


10. You can also access specific groups of tests in Micro (Culture results) or Blood Bank

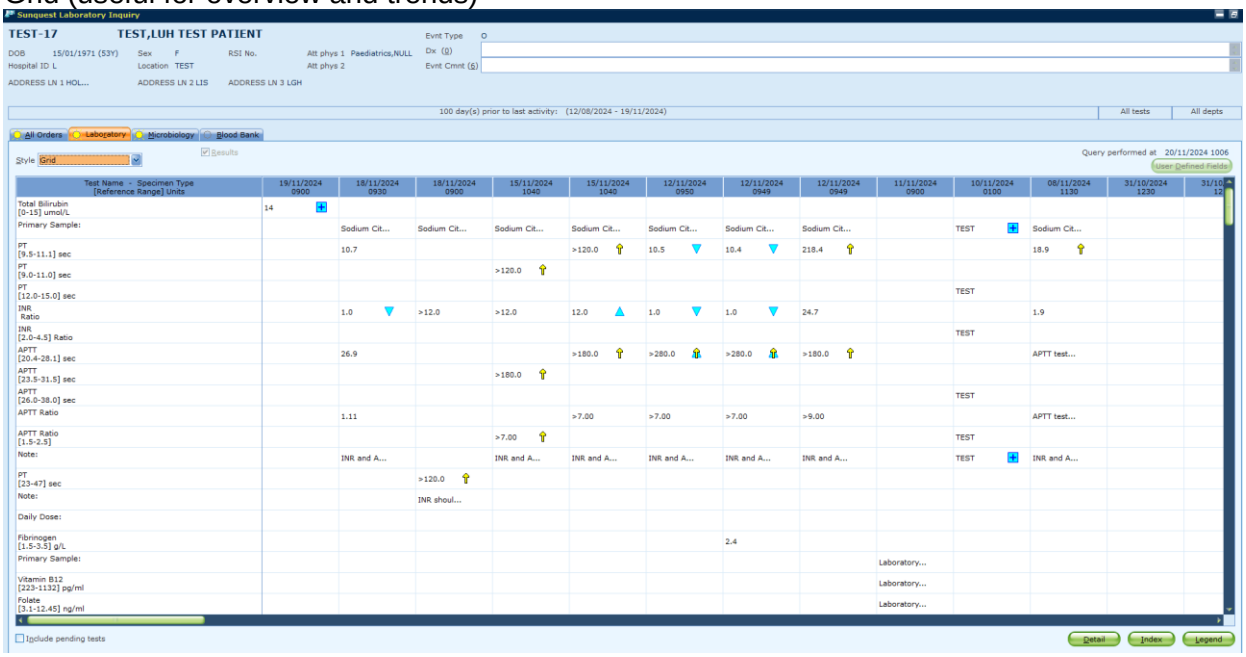
11. Under the **LABORATORY** tab, you have the option to access results by Order Detail, Order List, Grid and Graph.



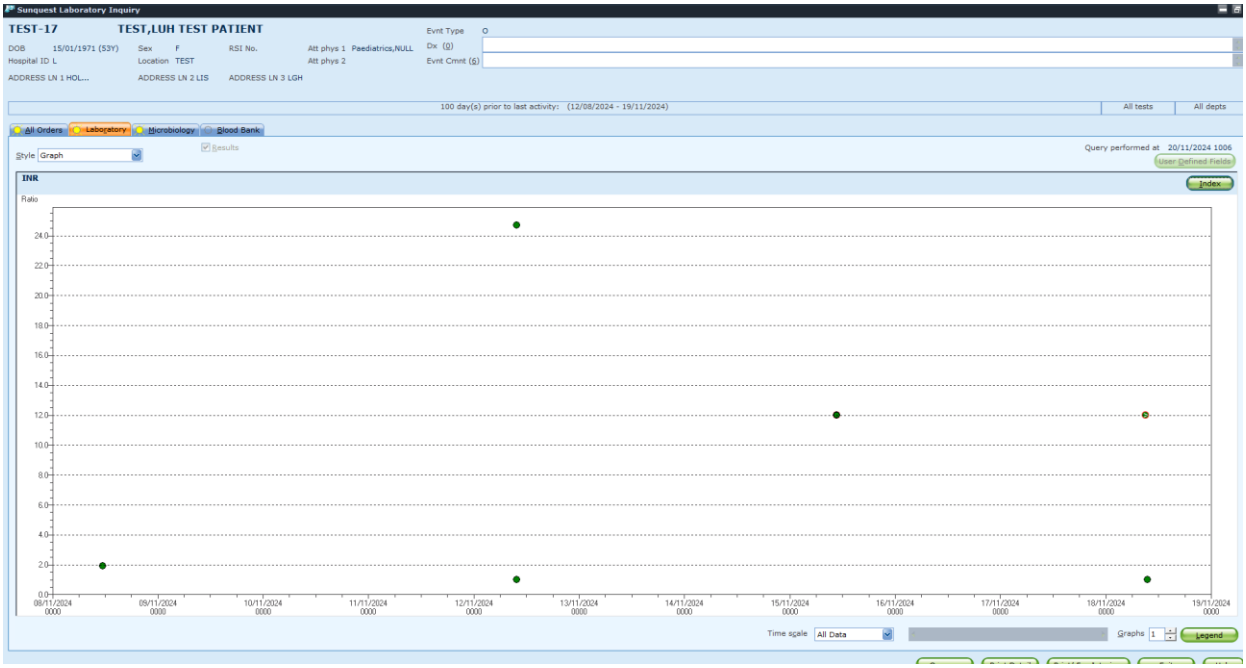
Order List (Click on individual orders to display)



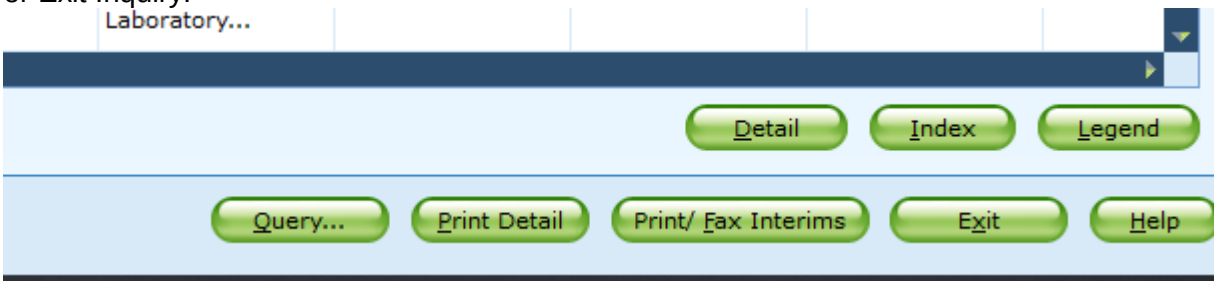
Grid (useful for overview and trends)



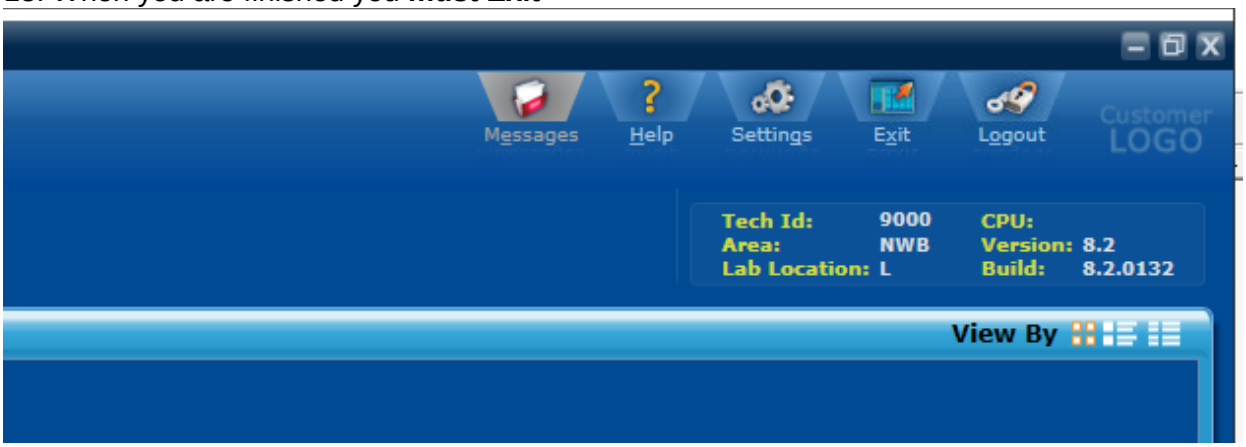
Graph (useful for individual tests)



12. When you are finished you can click Query to perform another search on a different patient or Exit Inquiry.



13. When you are finished you **must Exit**



Further details are available in the training video link supplied. Please use the Citrix application going forward.
Link to video for LUH is: https://youtu.be/xUqZOHxKFL8

15.2 Reports for External Locations

Electronic reports are transferred to General Practitioners via the Healthlink reporting system. Hard copy reports for locations outside the hospital, who are not 'paperless' are sent to Pathology Reception for posting as soon as the report is completed.

15.3 Reports from External Laboratories/ Reporting of Referral Tests (Hospital and GP requests):

Hard copies of reports for referral tests are returned to the requesting physician via Pathology reception. Some referral reports are transferred electronically from the reference laboratory to the Laboratory Information System (LIS) and are available on ICM. All Haematology referral reports are available via ICM.

15.4 Histopathology Reports

15.4.1 Histopathology Samples examined 'on-site'

Hardcopy written reports will be issued, once the case has been authorised by a Consultant Histopathologist. Authorised reports are available to view on iCM
In some cases, where further work is being performed on the sample, an addendum report may be issued when all investigations are complete.

Pending reports: in exceptional circumstances only the reporting Consultant Histopathologist may be contacted directly for a verbal report e.g. sudden deterioration in patient condition.

In accordance with INAB Accreditation recommendations, reports will not be communicated verbally by Secretarial Staff.

15.4.2 Samples examined 'off-site'

On occasion, due to e.g. staffing issues or equipment failures, it may become necessary to forward specimens to an 'off-site' laboratory for routine processing and/or reporting. Requesting Clinicans will be informed in writing if this scenario occurs, and a report will be issued through the Histopathology Department as soon as it is available.

15.4.3 Histopathology 'Copy to' Reports

Copies of reports will not be provided. It is the responsibility of the requester to ensure that relevant individuals e.g. the patient's General Practitioner, are informed of the result.

15.4.4 Histopathology Samples forwarded to Specialist Centres

The issuing of Histopathology reports on samples forwarded to specialist centres are dependent on the investigation requested: neuro-muscular biopsy results are issued directly by the reporting laboratory to the requesting clinician; details on the communication of molecular testing results can be found in the Histopathology User Manual MP-HISTO-0005 Section 12.2.2.

Please do not contact the Histopathology Department, LUH to request copies of these reports as the secretarial staff do not have access to these results.

16.CRITERIA FOR PHONING CRITICAL RESULTS

It is the policy of this laboratory to telephone reports only when results for specific clinical parameters have reached critical levels as specified below. A record of all telephoned results is held in the laboratory.

16.1 Blood Transfusion

It is the policy of this laboratory to telephone reports only when results for specific clinical parameters have reached critical level, these include:

- Antibody detected in patient sample where transfusion is urgent or patient is for theatre.
- Antibody detected in patient sample leading to a delay in the provision of blood.
- Blood group analysis revealing discrepancy with historical group on file.
- Specimen issues on urgent crossmatch requests:
  - Haemolysed
  - Insufficient
  - Sample/form mislabelling
- Anti-D Quantitation Levels > 4.0 I.U./ml*
- Anti c Quantitation > 7.5 I.U/ml*
- Positive Direct Coombs test (Neonates only).
- Clinically significant antibody in antenatal sample that requires titre and/or Quantitation or any result that shows a rise in titre from previous titre.
- Equipment failure resulting in delay in service provision and affecting turnaround times.
- Massive blood shortage:
  - National depletion of supplies
  - Local blood shortage due to rapid consumption e.g. massive haemorrhage.
- Special requirements omitted from request when clinically indicated:
  - CMV negative
  - Irradiated
- Patients not registered on IPMS-

  A Medical Scientist should telephone such results to either the requesting clinician or a responsible nurse.

16.2 Microbiology

Test	Result	Inform Ward/GP	Inform Consultant Microbiologist/IPCT	Inform Public Health immediately
Positive blood culture	Gram stain result Culture result	Yes Available on LIS	Yes Yes	Yes if: *Neisseria meningitidis, Haemophilus influenza*
CSF	Elevated WCC, differential and/or positive gram stain	Yes	Yes if bacterial aetiology	Yes if: *Neisseria meningitidis, Haemophilus influenzae*
Faeces - enteric pathogens	*Camplybacter species, Salmonella species, Shigella species* VTEC (presumptive & confirmed) *Vibrio species* *Yersinia species* *Cryptosporidium species*	Yes	Yes if inpatient	*Cryptosporidium*, VTEC, *Salmonella typhi* and *paratyphi, Vibrio cholera* (presumptive and confirmed) must be phoned immediately (CIDR for other isolates)
Faeces virology	Rotavirus Adenovirus	Inpatients only	No	No (CIDR)
Clostridium difficile and Norovirus	Positive / Detected	No	Yes if inpatient or (community IPCT)	No (CIDR)
Pneumococcal urinary antigen	Positive urinary pneumococcal antigen	Yes	Yes	No
Legionella urinary antigen	Positive urinary legionella antigen	Yes	Yes	Yes
STI screen	*Neisseria gonorrhoea*	Yes by Consultant Microbiologist	Yes	No (CIDR)
Reference Laboratory	All significant results	Yes	?Yes depending on result	Yes if on list of infectious diseases for immediate notification

Table 10. ***Please note: This list is not exhaustive.***

16.3 Haematology

It is the policy of this laboratory to telephone reports only when results for specific clinical parameters have reached critical levels.

Test	Range	Comments
Haemoglobin	<7 or >19g/dl or Unexplained Change of ≥5g/dL	1st or sudden change
Platelet counts	< 50 or >1000x10^9/l	1st or sudden change
WBC **GPs**	<1.0 or >30x10^9/l	newly presented / no obvious cause or sudden change
WBC **In-patients**	<1.0 or >50x10^9/ l	newly presented / no obvious cause or sudden change
Prothrombin Time	>30 secs	1st or sudden /unexplained change
APTT	>60 secs	1st or sudden/unexplained change
INR	>5.0	1st or sudden change
Fibrinogen	<1.0g/L	1st or sudden change
DDIMER	>6.0mg/l FEU	1st or sudden change
Abs Neut. Count **Oncology Patients**	<0.5x10^9/L	1st or sudden change, or referred for Blood Film
Abs Neut. Count **Inpatients/GP/ER**	<1.0x10^9/L	1st or sudden change or referred for Blood Film
DDimer from GP (if approved by Cons Haematologist	All results	GP mobile No provided with request

Table 11: Critical Alert Values for Telephone Reports

Others:

- Newly presented Leukaemias (contact the Consultant Haematologist)
- Newly presented *Plasmodium* infection (contact requesting Clinician).
- Positive sickle haemoglobin screen on patients about to undergo anaesthesia.
- Unexpected/ first presentation of Blast cells on blood film (contact the Consultant Haematologist)
- Results of samples sent for flow cytometry confirmation for Kleihauer test to the requesting clinician.
- Phone the results of PCR confirmation referral for Malaria to the requesting clinician.
- Unexpected/ first presentation of Haemolytic Uraemic syndrome (HUS) or Thrombotic Thrombocytopenia (TTP) indicated by red cell fragments (schistocytes) and platelet consumption : Contact the Consultant Haematologist.
- 'Abnormal Factor Assays (F8/F9/F10) performed at LUH, Requesting Clinician and Consultant Haematologist should be notified of abnormal results

16.4 Biochemistry

Note 1: These criteria apply to first or sudden changes
Note 2: Troponin T does not need to be phoned as results will Autofile.

TEST	UNITS	ACTION LIMITS		COMMENTS	
		LOWER	HIGHER		
Alcohol	mg/dl		>400	>10 in Paed. samples	
ALT	U/L		≥495*		
Amikacin	ug/ml		>5		
Ammonia	umol/L		100		
Amylase	UL		300*		
AST	U/L		≥480*		
Bicarbonate	mmol/L	10			
Bilirubin	U/mol/L			>300 in Paed. Samples	
Calcium (corrected)	mmol/L	1.8	3.0*		
Carbamezapine	ug/ml		>60		
CK	U/L		≥5000*		
Cortisol	nmol/L	<50	>1780	Synachten P30 <250	
Creatinine	umol/L		320*	≥120 in Paed. samples	
CRP	mg/L		300*	>100 in paediatric samples (under 18 years)	
Digoxin	ug/L		2.5*		
DBIL	umol/L		25		
Gentamicin	mg/ml		>2		
Glucose	mmol/L	2.5	20*	Diabetics >30, ≥15 in Paed samples	
HIV & Syphilis	To be phoned to Consultant Microbiologist on referral to NVRL.				
Infectious Serology	Phone Infectious serology which are referred for further testing to Renal unit if patient is a dialysis patient. State sample is above cut-off and needs to be confirmed by NVRL.				
Interleukin-6	pg/ml		>20	Phone result to ward.	
Iron	umol/L			>60 in Paed. samples	
Lactate	mmol/L		>4		
Lithium	mmol/L		1.4		
Mg	mmol/L	0.4*	1.8		
Paracetamol	mg/L		50*	All detectable levels for Paediatrics	
Protein Electrophoresis	All new Paraprotein bands in urine/ serum				
Phenytoin	mg/L		>25		
Phosphate	mmol/l	0.3			
PLGF/SFLT Ratio			>38		
Potassium	mmol/L	2.8*	6.0* non haemolysed samples only	Pre Dialysis	Post Dialysis
				<4 or >6	>4.0
Procalcitonin	ng/ml		>/= 2.00		

Salicylate	mg/L		300*	
Sodium	mmol/L	125*	150*	<130 in Paed samples
TSH	uIU/ml		>100	
T4	pmol/L		>30	
Urate	umol/L		340	Ante-Natal samples only
Urea	umol/L		25*	>10 in Paed. samples
Uric Acid	umol/L	<11.5		Oncology patients only
Vancomycin	mg/ml		>20	

*Results from Primary Care must be phoned to Now Doc during OOHs.

Table 12: Biochemistry Critical Reporting Limits

References for Biochemistry phone ranges:

LR-GEN-0017 The communication of critical and unexpected pathology results.
LR GEN 0096: HSE communication-of-critical-results-for-patients-in-the-community

16.5Histopathology Telephoned Reports

In accordance with INAB Accreditation recommendations, reports will not be communicated verbally by secretarial or scientific staff.

Histopathology and Cytology results are only given by telephone in the following scenarios:

- All frozen section diagnoses.
- Cases with significant disagreement between frozen section and final diagnosis.
- 'Unexpected' diagnosis of malignancy as adjudged by Consultant Histopathologist.
- Malignant diagnosis with urgent treatment implications as adjudged by Consultant Histopathologist e.g. small cell carcinoma.
- Non-malignant diagnosis with significant/urgent clinical/treatment implications as adjudged by Consultant Histopathologist.
- 'Urgent' diagnoses as agreed by prior discussion with Consultant Histopathologist.
- Significantly unexpected tissue finding in 'routine' specimen e.g. adipose tissue in endometrial curettings.
- Cases where an amended report is issued and the amendment adjudged as critical by Consultant Histopathologist .

The call is made by the reporting Consultant Pathologist direct to the referring clinician.

Routinely, hardcopy written reports will be issued, once the case has been authorised by a Consultant Histopathologist. Results are also available to authorised users on iCM.
Copies of reports will not be issued to Primary Care, these should be obtained through the relevant Hospital Consultant.

Pending reports can only be discussed with the relevant Consultant Histopathologist.

16.6 Immunology

All new positive ANCA or GBM results to be telephoned to the requesting Ward/GP practice.
All new positive MPO/PR3/GBm including equivocal.

17.EXTERNAL QUALITY ASSESSMENT PROGRAMME

The department employs rigorous internal quality procedures to ensure a high level of quality is maintained. The Pathology Department participates in relevant available external third party assessment schemes. This includes schemes operated by:-

NEQAS (UK, National External Quality Assurance Scheme)
IEQAS (Irish External Quality Assurance Scheme)
Histopathology National Quality Improvement Programme (NQIPH)
Quality Control for Molecular Diagnostics (QCMD)
The Pathology Department is committed to participating in other schemes as they become available and are required to ensure comprehensive assessment of the test repertoire.

18. TURNAROUND TIMES

Expected turnaround times for common requests are identified in the relevant departmental user guides. Turnaround time is defined as the time from specimen receipt in the Pathology Department to the time results are available.
The times stated are deliverable in 90% of instances in normal circumstances. There are times, due to factors outside the laboratories control, that the stated turnaround times may be exceeded. These events are infrequent and will be explained to users at the time.
In addition to the routine service each department operates an “urgent” system whereby the target turnaround time is shorter.
If the laboratory fails to meet expected turnaround times please contact Chief Medical Scientist or the Pathology Manager (see contact list).

19. MEASUREMENT OF UNCERTAINTY

Values for the ‘Measurement of Uncertainty’ for assays have been calculated and data is available to users by contacting the relevant laboratory.

20. LABORATORY ACCREDITATION

The scope of accreditation for the Pathology Department at Letterkenny University Hospital is controlled by the Irish National Accreditation Board (INAB) and is available on the INAB website (www.inab.ie).

21. DATA PROTECTION, CONFIDENTIALITY, FREEDOM OF INFORMATION, EQUALITY

All Laboratory staff are bound by the Health Service Executive Codes of Standards and Behaviour which states: “Employees must not improperly disclose, during or following termination of employment, information gained in the course of their work.

Employees may have access to or hear information concerning the medical or personal affairs of patients and/or employees, or other health service business. Such records and information are strictly confidential and can only be divulged or discussed in the performance of normal duty.

Disclosure of records or information under various statutory provisions (e.g. Freedom of Information Acts 1997 and 2003; Data Protection Acts 2001 and 2003; the Health Acts 1947 to 2007) will be made in accordance with HSE policies, procedures and protocols."

GDPR provides for high standards of data protection for individuals and imposes increased obligations on organisations that process personal data. All HSE staff must comply with all applicable data protection, privacy and security laws and regulations including the HSE Data Protection Policy which sets out the requirements of the HSE relating to the protection of personal data where we act as a Data Controller and / or Data Processor, and the measures to be taken to protect the rights of data subjects, in line with EU and Irish legislation. HSE Data Protection Policy is available from: https://www2.healthservice.hse.ie/organisation/national-pppgs/hse-data-protection-policy/

The Pathology Department at LUH vision is in accordance with the HSE National Office for Human Rights and Equality Policy:
Our vision is a health and social care service that respects the rights, autonomy and dignity of all the people who use services.

22. PATHOLOGY DEPARTMENT SUPPLIES

22.1 Hospital Supplies

Are available from Pathology Department Reception.

22.2 GP/ Community Hospital Supplies

Are available via Cruinn.

Cruinn Diagnostics Ltd
Email: orders@cruinn.ie
Telephone: 01 629 7400
Fax: 01 629 7401

All supplies orders received by 12pm will be delivered next day.

23. OUTSOURCING OF GP SAMPLES TO EUROFINS BIOMNIS

Currently, a portion of Biochemistry and Haematology requests from GPs are forwarded to Eurofins Biomnis for testing.
The following are some important points in relation to this service:

- Samples for Eurofins are collected from the Pathology Department in Letterkenny University Hospital Monday to Thursday at 17:30, to arrive in Eurofins by 23:00 that same evening.
- Results from Eurofins are returned via Healthlink
- Eurofins sample turnaround times are comparable to turnaround times for GP samples analysed in Letterkenny University Hospital (48hrs) and can be found online on the Eurofins Biomnis Primary Sample Menu for Clinical Chemistry.
- All queries should be directed to the Client Services Department, Eurofins Biomnis through the freephone number (1800 252 966) or via email (client.services@eurofins-biomnis.ie)

- Due to the labile nature of potassium, AST and phosphate, these tests will not be reported by Eurofins. Should you specifically require any of these tests or any sample required urgently they can be processed in the Biochemistry Department in Letterkenny University Hospital. Contact must be made in advance with Central Reception of the Pathology Department (074 9123557) so these samples can be identified. Any samples that are deemed necessary to be performed in LUH should be sent in in a separate envelope marked "Urgent" to allow easier identification of the sample in the Pathology Department.

23.1 MANAGEMENT OF CRITICAL RESULTS FOR GP OUTSOURCING SAMPLES TO EUROFINS BIOMNIS

Please see excerpts below from Eurofins Biomnis document G68 describing the procedure in place at Eurofins Biomnis:

Document number: G68 Appendix D **Issue number:** 1.02	**Effective date:** 23/12/24	Page **2** of **3**
Title: Critical results phoning for GP clients		

Critical results on GP patients from Letterkenny University Hospital
(location code: GPGHL)

During normal working hours (Monday to Friday, 9am -5pm), the referring GP must be contacted with critical result(s) following the following the communication pathway outlined on page 2 of this document above. Between the hours of 5-6pm, the GP will have a mobile number listed on their voicemail recorded message listing whom to contact urgently.

The list of Letterkenny hospital GPs and GP phone numbers has been provided to Eurofins for use out-of-hours. It has been saved here: Global\Autolab\PHONE NUMBERS\G68 Letterkenny GP List

Outside of these hours, or in cases where the GP surgery is closed when trying to call, Now-DOC is the out-of-hours point of contact. All **CATEGORY A** results which fall outside of normal working hours (Monday to Friday, 9am – 5pm) must be communicated by the authorising scientist.

The procedure for phoning results to Now-DOC is as follows:

- Phone 0818-400911 (critical results only).
- The call will be logged and if required a phone number taken to allow a clinician to call back.
- Provide the laboratory direct dial phone numbers (BTR Autolab: 01 -2176044, 01- 2176046)
- If you are not going to be available to take the return call, provide the Laboratory on-call phone number (086 1727250) and email the on call scientist so they know to expect the call (laboncall@eurofins-biomnis.ie). Include the sample number, the critical result in question and the patient initials so that the on-call scientist can easily locate the result once they are called back.

Excerpt from G68, Appendix C, Issue No:1.06

Autolab Abnormal results to be Phoned to Clinicians

	GENERAL CLIENTS		CAT
TEST	RESULT ABOVE	RESULT BELOW	
Adjusted / Corrected Calcium	3.49 mmol/L	1.81 mmol/L	A
AFP (JCMHB only)	6.64 IU/mL		B
ALT	825 IU/L		B
Amylase	625 IU/L		A
AST	540 IU/L		B
Bile acids	40 µmol/L		A
Bilirubin, Total			A
C3		0.60 g/L	B
C4		0.10 g/L	B
[redacted]			B
[redacted]			B
[redacted]			B
[redacted]			B
[redacted]			B
Cortisol		50 nmol/L	B
Cortisol 8 am sample		140 nmol/L	B
Creatine Kinase	5000 U/L		A
Creatinine	353 µmol/L		A
CRP-hs	300 mg/L		A
Digoxin	2.0 ng/mL		B
eGFR		16 ml/min	A
FT4	49 pmol/L		B
GGT	540 IU/L F		B
GGT	960 IU/L M		B
Glucose	24.9 mmol/L	2.6 mmol/L	A
hs Troponin I	16 ng/L F		A
hs Troponin I	34 ng/L M		A

Autolab Abnormal results to be Phoned to Clinicians

	GENERAL CLIENTS		CAT
IgA		< LOD	B
IgG		< LOD	B
IgM		< LOD	B
Iron			A
Lipase	> 200 U/L or >39 U/L if <19 years old		A
Lithium	1.4 mmol/L		B
Magnesium	2.45 mmol/L	0.41 mmol/L	A
Phenobarb	40 ug/mL		B
Phenytoin	30 ug/mL		B
Phosphate		0.31 mmol/L	A
	2.60 mmol/L	0.46 mmol/L	B
Potassium	5.9 mmol/L	2.6 mmol/L	A
Serum Osmolality	335 mOsm/kg	250 mOsm/kg	A
Sodium	150 mmol/L	121 mmol/L	A
Tacrolimus	20 ug/L		B
Theophylline	20 ug/mL		B
Triglycerides	19 mmol/L		B
TSH	100 µIU/mL		B
Urea	29.9 mmol/L		A
Uric Acid			C
Valproic Acid	100 ug/mL		B

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Category A Critical result: Must be phoned immediately
Category B Critical result: Must be phoned within 24 hours.
Category C Critical result: Must be phoned by the next working day.

Autolab Abnormal results to be Phoned to Clinicians

	ALL LOCATIONS	CAT
ALL ANTIBIOTICS eg Vancomycin, Tobramycin, Amikacin, Gentamicin	ALL LEVELS	A
ANA	Any positive result in children (< 18 years).	B
CMV IgM	Positive CMV IgM	C
dsDNA	Any positive result in children (< 18 years).	B
ENATP	Any positive result in children (< 18 years).	B
GBM	Any first time non-negative result (i.e.: > 7 U/mL)	A
Hypogamma-globulinaemia	IgG < 3 g/L with low IgA and IgM	C
LKM Ab (France)	Any first-time positive result	B
Monoclonal Paraprotein	Any new paraprotein above 10 g/L and ANY IgD/IgE.	C
MPO	Any first time non-negative result (i.e. > 3.5)	B
NMDA Ab (France)	Any first-time positive result	B
PR3	Any first time non-negative result (i.e.: > 2.0)	B
Rubella IgM	Positive Rubella IgM	C

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Category A Critical result: Must be phoned immediately
Category B Critical result: Must be phoned within 24 hours.
Category C Critical result: Must be phoned by the next working day.

Autolab Abnormal results to be Phoned to Clinicians

TEST	GENERAL CLIENTS RESULT ABOVE	RESULT BELOW	CAT
HAEMATOLOGY			
Hemoglobin	20 g/dL	7 g/dL	B
Blood Film (Morphology)	Acute Leukaemia		A
	TTP		
INR	4.9		A
Malaria films	Positive		A
Neutrophils		0.51 x 10^9/L	A
Platelets	599 x 10^9/L	31-50 x 10^9/L	B
		31 x 10^9/L	A
White Cell Count	30 x 10^9/L	2 x 10^9/L	B

CAT A results to be communicated within 2 hours, by ON-CALL staff, if out of hours.

Renal Clinic results are all CATEGORY A

CAT B results must be communicated within 24 hours, by ON-CALL staff if over weekends or Bank Holidays

CAT C results must be communicated by the next working day

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