St. Luke's Hospital

Pathology Laboratory User Manual

Document Reference Code	Lab-SLH-SOP-LP-PATH-001	**Lead Author**	Alice Melvin Laboratory Quality Manager Leon Flanagan Chief Medical Scientist
Version Number	18	**Approved by**	Laboratory Director and Laboratory Departmental Consultants
Issue Date	22nd July 2026	**Responsibility for implementation**	Laboratory Management Team
Review date	July 2027	**Responsibility for review and audit**	Laboratory Management

PATHOLOGY LABORATORY

USER MANUAL
(PRIMARY SAMPLE COLLECTION MANUAL)

Document Written by: Leon Flanagan,
Chief Medical Scientist.

Document Reviewed by: Alice Melvin,
Laboratory Quality Manager

Document Approved by:

_____	_____	_____
Leon Flanagan Chief Medical Scientist	Alice Melvin Quality Manager	Prof. David Gibbons Laboratory Director
_____	_____	
Prof. Kamal Fadalla Consultant Haematologist	Prof. Carel LeRoux Consultant Chemical Pathologist	

Date of Issue: 22nd July 2026

DO NOT USE THIS DOCUMENT AFTER: July 2027

The information contained in this manual is correct as of it's issue date. Changes to laboratory services in the coming year will be communicated to relevant personnel, as appropriate.

1 INTRODUCTION

The purpose of this manual is to provide the user with sufficient information about St. Luke's Pathology Services, which will in turn assist in the provision of the highest quality of service to the patient. This manual also provides information on:

- Filling out request forms, taking and labelling samples
- Our policies on rejecting samples and reporting results
- Specifics relating to Blood Transfusion Service
- Useful contact numbers for further information

This manual is intended for clinicians, nurses, porters, phlebotomists and any other staff who may require SLH pathology services. SLH pathology services are available only to patients at the SLRON at SLH Rathgar site. This manual includes an A to Z of laboratory tests conducted at St. Luke's Hospital. If you cannot find the information you require, give the laboratory a call and we will try to help you out. We hope you find this manual useful.

Laboratory activities are performed impartially and in a manner such that the patient's well-being, safety and rights are the primary consideration. All patients and their samples are treated equally.

2 QUALITY STATEMENT

Currently, the pathology laboratory services at St. Luke's Hospital, Rathgar are not currently accredited to International Standard ISO 15189 Medical Laboratories – Requirements for Quality & Competence, following voluntary suspension in 2025. Re-entry to accreditation is expected in 2026 for the Blood Transfusion Department. The laboratory is committed to providing a service of the highest quality and is aware and takes into consideration the needs and requirements of its users.

The quality of the service is not only achieved by following a set of formal procedures which are in place but also achieved by the attitudes, values and commitment of the pathology staff.

3 LOCATION AND DEPARTMENTS OF THE LABORATORY

The Laboratory is a small multi-disciplinary testing facility with the following departments:

- Biochemistry
- Blood Transfusion
- Haematology

- Specimen Reception/Referrals
- Quality

The laboratory is situated on the grounds of St. Luke's Hospital in Rathgar. The Pathology laboratory is located towards the back of the hospital campus behind Ward D and beside the putting green. The Pathology laboratory provides services to the patients of St. Luke's Hospital campus only.

4 LABORATORY SERVICE HOURS

4.1 Routine laboratory opening hours

Monday- Friday:	**8am – 6pm**, then on-call until 8am the following day.
Saturday:	**9am – 12.15pm**, then on-call until 8am the next routine morning.
Sunday/ Bank Holiday:	On-Call only. (*There is a Medical Scientist in the lab from 10am for a couple of hours on Sunday/bank holiday mornings to test urgent bloods. Apart from this, scientists are on standby from home ie are available to be called in as required*).

4.2 Out of hours service/contact details for staff members

A rostered laboratory on-call service is provided outside of the above listed routine opening hours, for urgent sample testing.

Non-urgent samples should be processed during routine hours, see Section 4.1 above.

The master copy of the roster is updated monthly by the laboratory and maintained at the switchboard. Contact the switchboard when looking for the Medical Scientist on-call.

4.3 Scope of Saturday Morning Service and On-Call Service

4.3.1 Saturday morning

A routine service is provided for:

Biochemistry, Haematology/Coagulation and Blood Transfusion (Group and Hold samples, if required by clinician). Latest receipt time for these is 11.45.

All Microbiology samples are referred out at 9.30am on Saturdays.

4.3.2 On-call

Most testing services are also provided on-call. The following services are not provided on Saturdays or on-call:

- Routine Tumour Markers
- All non-urgent referral blood tests

Only urgent referral bloods, Blood Cultures and COVID swabs are referred out on Sundays/Bank Holidays.

5 SCIENTIFIC AND CLINICAL ADVICE

Position	Name	Ext no. / bleep
CLINICAL ADVICE		Pre-fix (01) 406
**Laboratory Director	Prof. David Gibbons	Ext. 5198
**Consultant Chemical Pathologist	Prof. Carel LeRoux	Ext. 5133
**Consultant Haematologist	Dr. Kamal Fadalla	Ext. 5199
SCIENTIFIC ADVICE		
Specimen Reception & Referrals (incl Test Enquiries)	Specimen Reception & Referrals Department	Ext. 5191
Biochemistry Senior Med. Scientist	Ms. Siobhan O'Keeffe	Ext. 5133
Blood Transfusion Senior Med. Scientist	Ms. Nyasha E Kamanga	Ext. 5156
Haematology Senior Med. Scientist	Mr. Cathal Prendergast	Ext. 5199
Point-of-Care Testing Coordinator	Mr David Molloy	Ext. 5133
CNM2 in Haemovigilance	Ms. Judy Taylor	Bleep 367
Laboratory Quality Manager	Ms. Alice Melvin	Ext. (245) 5507

**Note: For clinical advice during routine lab hours, please contact the laboratory at one of the extension numbers above, and they will provide the contact number for the Consultant that you require, who will provide professional judgements on the interpretation of the results of examinations.

To contact the Consultant Haematologist outside routine hours, contact the switchboard at SVUH at 01 211 4000 requesting to speak with the Consultant Haematologist on-call.

6 SERVICES OFFERED BY THE LABORATORY

6.1 Biochemistry

Routine analysis of plasma, serum and body fluids for a variety of chemical constituents which are listed alphabetically in section 17.1 of this manual.

6.2 Haematology

Routine analysis of whole blood for quantitative and qualitative cellular composition. Coagulation testing. The tests provided are listed alphabetically in section 17.1 of this manual.

6.3 Blood Transfusion

Routine service including blood grouping, antibody screening, cross matching and provision of blood and blood products to patients. Refer to Section 14 for further department specific information.

6.4 Specimen Referrals

All samples not listed in section 17.1 of this manual, are referred out through the laboratory's referrals department. The referral laboratories commonly used are listed in section 6.4.2 of this document.

- If a non-urgent referral test is required within routine hours:

Monday- Friday: **8am – 6pm**,

Saturday: **9am – 12.15pm**,

send these samples to the lab as early as possible on these days and before 11.45am M-F, for same day send out, via the noon routine courier collection service. After this time, referral samples may be held in the laboratory until the following day for referral, unless they are urgent.

- If an urgent referral test is required during routine hours, clearly indicate it's urgency on the request form.
- If an urgent referral test is required outside of routine hours, phone the laboratory directly to ensure there is a medical scientist on-site, or arrange for the medical scientist to come on-site, to refer the sample out. Ensure the request form has a clear indication of urgency. Urgent covid requests may be referred directly from the ward.

Note: some referral tests are not available at referral laboratories at weekends. Discussion with the medical scientist may be required to determine this.

Note: every effort should be made to request any tests requiring referral within the laboratory's routine working hours, where possible.

6.4.1 Microbiology Sample Referral

All Microbiology samples are referred to SVUH. This referral occurs routinely Monday to Saturday only, ie not on Sundays/Bank Holidays (except in the case of urgent samples).

- On Saturday mornings, microbiology samples should be received in the lab by 9am.
- On Sundays/Bank Holidays, COVID samples are referred out via the lab until approx. 12noon and Blood Cultures are referred out directly from the wards.

Urgent microbiology samples are referred every day of the year. These include blood cultures, CSF samples and COVID-19 PCR.

Please consult the SVUH Primary Sample Manual for sample requirements and turnaround times. Refer to Section 6.4.2 below for link.

6.4.2 External laboratories used

The laboratory at St. Luke's Hospital refers tests not performed on-site to 7 different laboratories in Dublin. Such tests are reported in accordance with the policies of those hospitals and under the clinical governance of their respective laboratory Consultants.

Refer to the following user manuals for up to date sample requirements and turnaround times etc (current versions):

1) https://www.stvincents.ie/
   Scroll down to the 'For GPs' section on the right hand side of the site. Select the Pathology User Handbook to access an alphabetical listing of tests and sample requirements.
2) http://search.stjames.ie/Labmed/ and search for the relevant test and sample requirements in Advanced Search
3) https://www.eurofins.ie/biomnis/support-services/pre-analytics-and-test-information/test-guide/ and search relevant test per department
4) https://nvrl.ucd.ie/usermanual and click on the link to the 'User Manual Edition …'
5) https://www.beaumont.ie/lab and click on the 'Laboratory User Guide for Referring Laboratories' which can be accessed via Laboratory/Pathology in the Departments section, for an alphabetical listing of tests and sample requirements
6) National Blood Centre-for complex red cell, white cell and platelet investigations. Relevant customer manuals can be accessed via the following links.

RCI
https://healthprofessionals.giveblood.ie/clinical-services/transfusion-transplantation/red-cell-immunohaematology-diagnostics/
Blood Group Genetics:
https://healthprofessionals.giveblood.ie/clinical-services/transfusion-transplantation/blood-group-genetics/

7) Queen Elizabeth Hospital Birmingham for Thyroglobulin and Thyroglobulin Antibody

Contact the laboratory on 5191 to determine the referral laboratory used for a particular test.

The following document, available on the hospital intranet, can also be referenced for sample requirements based on the test being referred.

Lab-SLH-F-LF-PATH-021 Specimen Referral Index.

6.5 Point-of-Care Testing

St. Luke's Hospital operates a Point-of-Care Testing (POCT) service which covers the following tests:

- Blood Gases and Electrolytes on D Ward
- Blood Glucose and Ketones, hospital-wide
- Creatinine / eGFR testing in, Radiotherapy (3 centres)
- Dipstick urinalysis in D Ward and Radiotherapy

The service is under development and is coordinated via the laboratory. The most recent update to the service has been the implementation of the GEM-5000 Blood Gas analyser on D ward, which also provides electrolytes, ionised Calcium and Glucose.

Future developments are planned this year in the areas of Glucose and Ketone testing and the implementation of connectivity software to aid oversight by the laboratory.

A Point of Care Testing Policy is under development and falls under the governance of a point of care testing committee.

For any queries relating to the service, please contact the relevant personnel as per Section 5.

7 COMPLETING THE REQUEST FORM

It is the responsibility of the test-requestor, as the signed authoriser for the request being made, to ensure that request forms are completed in full in line with the following procedures. The test-

requestor can be a clinician, nurse or other staff member charged with the care of patients who has the professional competence to order lab tests as appropriate.

Sample takers and laboratory personnel have a responsibility to ensure that request forms are completed correctly prior to proceeding with sample taking, or acceptance and processing, respectively. **Consequently, phlebotomy and/or laboratory work may be delayed pending request form completion, or rejected entirely**.

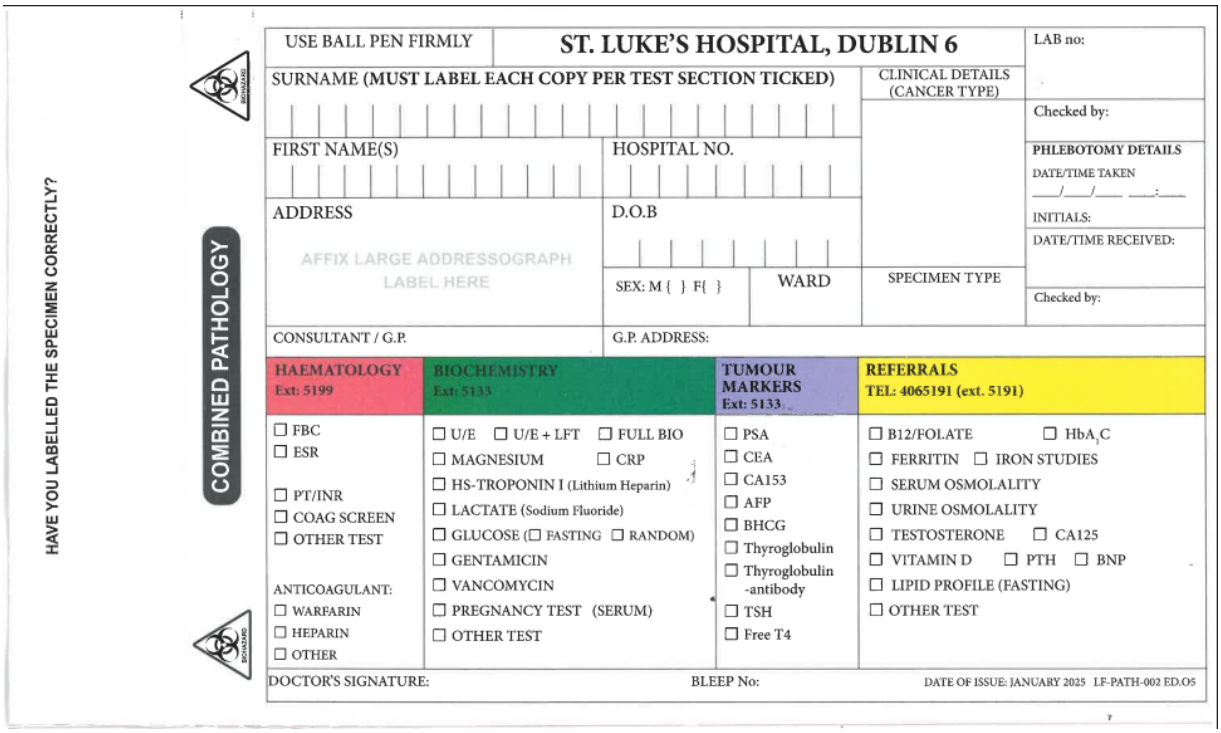
NOTE: **An addressograph label must be applied to each copy of the request form**.

The **test-requestor** must complete the appropriate request form in full and sign the bottom of the form, along with their bleep number. The request form must remain attached to the specimen transport bag for all blood specimens.

- The Pathology Laboratory has a combined request form for Haematology, Coagulation, Biochemistry, Tumour Markers and Referrals.
- Separate request forms are in place for Microbiology and Blood Transfusion.
- Stocks of all request forms are held in the laboratory.

Note: Where necessary the laboratory will clarify with the user (requester in this case), or another relevant representative, to clarify any test request that may be ambiguous, including sample timing as required.

7.1 Combined Pathology Request Form



HAVE YOU LABELLED THE SPECIMEN CORRECTLY?

COMBINED PATHOLOGY

USE BALL PEN FIRMLY

ST. LUKE'S HOSPITAL, DUBLIN 6

LAB no:

SURNAME (MUST LABEL EACH COPY PER TEST SECTION TICKED)

CLINICAL DETAILS (CANCER TYPE)

Checked by:

FIRST NAME(S)

HOSPITAL NO.

PHLEBOTOMY DETAILS

DATE/TIME TAKEN ___/___/___ ___:___

INITIALS:

ADDRESS

D.O.B

DATE/TIME RECEIVED:

AFFIX LARGE ADDRESSOGRAPH LABEL HERE

SEX: M { } F{ }

WARD

SPECIMEN TYPE

Checked by:

CONSULTANT / G.P.

G.P. ADDRESS:

HAEMATOLOGY Ext: 5199	BIOCHEMISTRY Ext: 5133	TUMOUR MARKERS Ext: 5133	REFERRALS TEL: 4065191 (ext. 5191)
☐ FBC ☐ ESR ☐ PT/INR ☐ COAG SCREEN ☐ OTHER TEST ANTICOAGULANT: ☐ WARFARIN ☐ HEPARIN ☐ OTHER	☐ U/E ☐ U/E + LFT ☐ FULL BIO ☐ MAGNESIUM ☐ CRP ☐ HS-TROPONIN I (Lithium Heparin) ☐ LACTATE (Sodium Fluoride) ☐ GLUCOSE (☐ FASTING ☐ RANDOM) ☐ GENTAMICIN ☐ VANCOMYCIN ☐ PREGNANCY TEST (SERUM) ☐ OTHER TEST	☐ PSA ☐ CEA ☐ CA153 ☐ AFP ☐ BHCG ☐ Thyroglobulin ☐ Thyroglobulin -antibody ☐ TSH ☐ Free T4	☐ B12/FOLATE ☐ HbA_1C ☐ FERRITIN ☐ IRON STUDIES ☐ SERUM OSMOLALITY ☐ URINE OSMOLALITY ☐ TESTOSTERONE ☐ CA125 ☐ VITAMIN D ☐ PTH ☐ BNP ☐ LIPID PROFILE (FASTING) ☐ OTHER TEST

DOCTOR'S SIGNATURE: BLEEP No: DATE OF ISSUE: JANUARY 2025 LF-PATH-002 ED.05

The following information **MUST** be legibly completed with all requests:

- **Minimum Patient Identifiers**
  - Patient's **Forename** (no initials/ abbreviations)
  - Patient's **Surname** (no initials/abbreviations)
  - **Hospital Number** (MRN) (**NOTE: ARIA number is not acceptable**)
  - **Date of Birth**
- Patient's **Gender**
- Legible signature of clinician, or other authorised personnel, and bleep no.
- Tests requested
- Date and Time sample collected
- Collector's initials

Note: *Request forms received with absent or incomplete patient identifiers, or where the labelling of the request forms, or samples, creates ambiguity regarding the patient's identification, will not be accepted for processing. These measures are taken in the interest of patient safety. If the laboratory is requested to return an unprocessed sample and attached request form to the location of origin, a reason shall be supplied. A note will be entered to the final report(s) indicating the action, reason and the identity of the person who made the request.*

The following information **should** be completed with all requests:

- Requesting Clinician and/or patient's Consultant
- Destination for Report (i.e. Ward or other care area)
  Note: where no ward is supplied, reports are issued as 'Not Stated'.
- Specimen type (e.g serum, plasma, urine, CSF or fluid)
- Clinical Details (this is very important in guiding investigations by the laboratory)
- State if the sample comes from a PICC line.
- Anatomical site of specimen (this is required for Microbiology/Histology referral investigations)
- Designation of the sample as urgent (where applicable).

7.1.1 Additional important notes when completing the "combined pathology" request form.

- If unsure of sample bottle to use, the sample types required for each test are listed on the back of the request form. Also refer to Section 8.4, Figure 1, order of draw and Section 17.1 of this manual.
- The lab requires that **an addressograph label is attached to each copy of the form**. This is required because the forms are separated upon reaching the lab, with copies going to separate departments.
- If handwriting the form, complete all information **using ballpoint pen (i.e. not a marker as it won't transfer to back copies)** as included in an addressograph label ie complete all boxes, and lean firmly in order that the print will come through to all copies.
- When writing on the form, ensure that all copies are aligned under each other and that the form is on a flat surface. Instances have occurred where test boxes ticked on the front copy have shifted over to other test boxes on rear copies causing confusion for lab staff.
- The Biochemistry test profile ie U/E, U/E + LFT and Full Bio, constituents, as presented on the request form, are displayed below.

7.1.2 Biochemistry Test Profile Constituents

U/E	U/E + LFT	FULL BIO
Urea	Urea	Urea
Sodium	Sodium	Sodium
Potassium	Potassium	Potassium
Chloride	Chloride	Chloride
Creatinine (enzymatic)	Creatinine (enzymatic)	Creatinine (enzymatic)
eGFR (epi-CKD 2009)*	Total Protein	Calcium
	Albumin	Calcium (adjusted)
	Globulin	Phosphate
	Bilirubin Total	Urate
	Alkaline Phosphatase	Total Protein
	AST	Albumin
	ALT	Globulin
	GGT	Bilirubin Total
	LDH	Alkaline Phosphatase
	eGFR (epi-CKD 2009)*	AST
		ALT
		GGT
		LDH

		eGFR

- For singular test requests please refer to Section 16.1 Any test may be requested singularly by writing it onto the request form.

* See KDIGO 2012 Clinical Practice Guideline

7.2 Blood Transfusion

BLOOD TRANSFUSION REQUEST FORM
ST. LUKE'S HOSPITAL, RATHGAR, DUBLIN 6. TEL: 01-4065156
LF-BBT-001 Ed07 Page 1 of 2 | Lab No.

BLOOD TRANSFUSION
PLACE SAMPLE IN LEAKPROOF BAG AND SEAL
INADEQUATELY OR INCORRECTLY LABELLED SAMPLES WILL BE DISCARDED

PATIENT DETAILS

SURNAME:	HOSPITAL NO:
FORENAME	DOB:
ADDRESS:	
Sex: M/F	Ward: / Consultant: / Diagnosis:

AFFIX ADDRESSOGRAPH LABEL

TRANSFUSION HISTORY

Patient Blood Group (if known)	
Any Previous Transfusions?	Y/ N
Any Adverse Reactions?	Y/ N
Details:	
Any Known Antibodies?	
NOTE Sample type: Whole Blood EDTA Samples are valid for 72 hours from time taken	

TRANSFUSION REQUEST To be completed by Clinicians or ANPs only

Test Requested: *Please tick* — **Phone lab 5156 if Urgent**

Group & Hold ☐ Crossmatch ☐
DAT ☐ Transfusion Reaction ☐ Other: _____

Products & Number Required: *Please tick*

Red Cells ☐ *Number:* _____ Platelets ☐ *Number:* _____
Other: _____

Date & Time Required: : ___/___/_____ ___:___

Any Special Requirements? *Please tick*	N/A		CMV Neg	Irradiated

Requesting Details:

Print Name:		Bleep No.	
Signature:			

SAMPLE TAKEN BY

Print Name:	
Signature:	AFFIX PDA LABEL
Bleep No:	**EXT:**
Date:	**Time:**

NOTE: Blood Track PDA use is MANDATORY for sampling. Affix printed PDA label ONLY, onto the sample, and in the shaded area above.
No other labels are allowed on sample.
Handwritten samples are accepted only in exceptional circumstances. All sample fields must be fully completed.

Date & Time Received:

Note: the Blood Transfusion Request Form must be completed and signed by the requesting clinician, in the case of a Group & Hold (G&H) or product request, or by an Advanced Nurse Practitioner for G&H requests.

The following information **must** be completed with all requests:

- **Minimum patient identifiers** as per Section 7.1
- Patient's Gender
- Printed name and signature of sample taker / PDA label
- Date and Time Sample collected / PDA label

- Printed name, signature and contact number of requesting doctor or ANP
- Special requirements (if blood products are being requested)
- Where applicable; Product type and time & date required,
- Reason for request

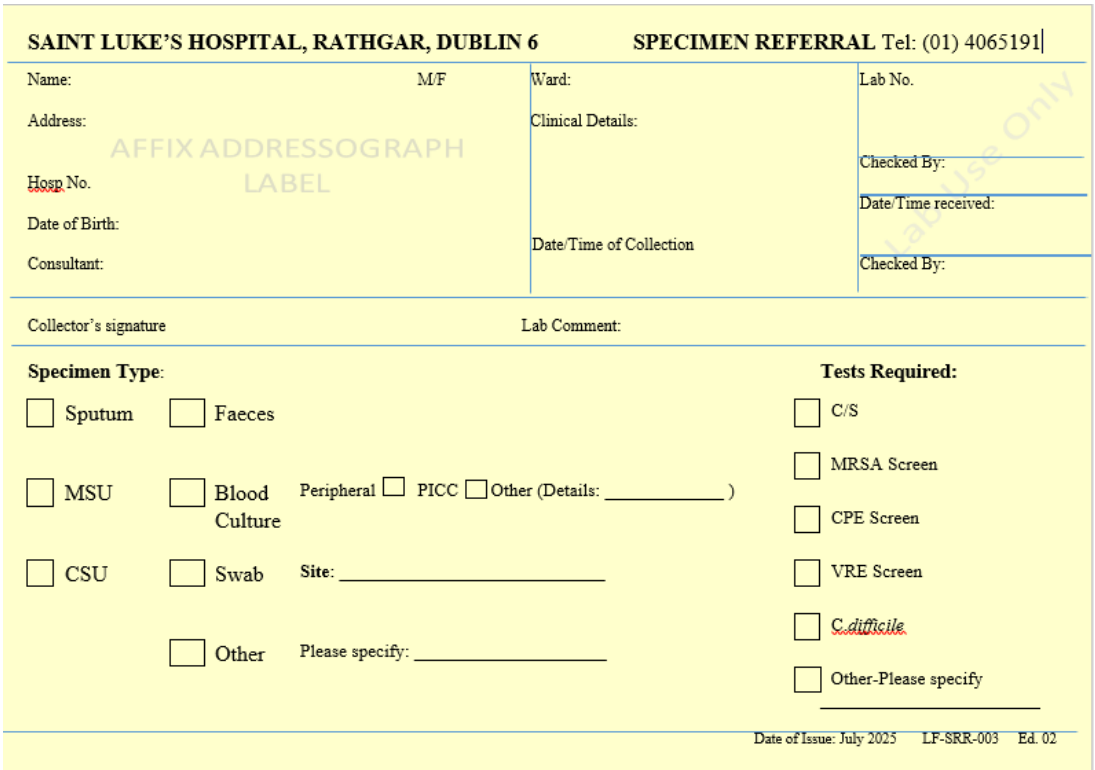
The following information **should** be completed with all requests:

- Ward ie destination for report / patient's location in the hospital
- Patient's Consultant
- Patient's Diagnosis (important in guiding investigations by the laboratory)
- Designation of the sample as urgent (where applicable)
- Patient's address
- Patient's transfusion / antenatal history (if available)

NOTE: A separate request form is required to be completed and sent to the laboratory in the event that blood/blood products are required and a valid G&H sample is already present in the lab.

When **using** the Electronic Blood Tracking System (EBTS) a PDA label should be placed on the Blood Transfusion sample and another placed on the shaded area in the 'Sample Taken By' section of the request form.

7.3 Microbiology



SAINT LUKE'S HOSPITAL, RATHGAR, DUBLIN 6 **SPECIMEN REFERRAL** Tel: (01) 4065191

Name: M/F
Address:
AFFIX ADDRESSOGRAPH LABEL
Hosp No.
Date of Birth:
Consultant:

Ward:
Clinical Details:
Date/Time of Collection

Lab No.
Checked By:
Date/Time received:
Checked By:
Lab use Only

Collector's signature
Lab Comment:

Specimen Type:

- ☐ Sputum
- ☐ Faeces
- ☐ MSU
- ☐ Blood Culture — Peripheral ☐ PICC ☐ Other (Details: _____)
- ☐ CSU
- ☐ Swab — **Site**: _____
- ☐ Other — Please specify: _____

Tests Required:

- ☐ C/S
- ☐ MRSA Screen
- ☐ CPE Screen
- ☐ VRE Screen
- ☐ *C.difficile*
- ☐ Other-Please specify _____

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As the microbiology request form does not have a specimen bag attached, microbiology samples must be placed into a specimen biohazard bag – available on the wards, and sealed correctly. The request form must then be placed in the designated pocket of the bag, separate to the sample.

** SVUH request that a single sample is sent per request form**

Also, a separate request form must accompany each set of blood cultures.

The following information **must** be completed with all Micro requests:

- **Minimum patient identifiers**. Ref to Section 7.1.
- Patient **Gender**
- Nature of examinations/tests required
- Legible signature of sample collector
- Date and Time sample was collected

The following information **should** be completed with all requests:

- Destination for Report (i.e. Ward or other care area)
- Requesting Clinician and/or patient's Consultant
- Specimen Type (e.g urine, CSF or sputum)

- Site of specimen. **This is very important to assist the referral laboratory in conducting appropriate investigations.**
  Blood cultures: state site taken from (PICC) or (Peripheral)
- Clinical Details (this is very important in guiding investigations by the laboratory)
- Antibiotics that the patient may be on
- Designation of the sample as urgent (where applicable).

8 SAMPLE COLLECTION

8.1 Information available for patients about preparing for their Blood Tests

Information about the laboratory and preparation for blood tests is provided on the SLRON website. The website contains an FAQ section regarding phlebotomy. The information for patients is not reproduced here. However the next section has outlined details in line with what is available for the patients on the SLRON internet site.

8.2 Guidelines for Hospital Staff (Users) regarding patient preparation needed for certain blood tests

8.2.1 Fasting Glucose and Lipids

Patients are instructed to fast for 12 hours up to the time of sample collection. Sips of water are allowed only.

8.2.2 Glucose Tolerance Test (GTT)

Patients are instructed that they need to fast for 14 hours up to the time of sample collection. Sips of water are allowed only. Patients are also instructed that they will receive a glucose-rich drink after the fasting sample is taken and that, during the period from then until the 2-hour postprandial (pp) sample is taken, they should remain seated and not eat or smoke.

8.2.3 Faecal Occult Blood (FOB)

There are no special dietary instructions to be followed for the patient, as the test kits available are not subject to any interferences from foods. This test is performed at ward level.

8.3 Sample Collection of Microbiology Samples

Special notes: for the collection of each of the following specimens, there must be an unequivocal link to the patient.

Perform **p**ositive **p**atient **id**entification (**PPID**), comprising the minimum patient identifiers, see Section 7.1, at the patient's (bed)side using an addressograph labelled request form. Firstly, confirm all of the patient's identifying details verbally and then against the wristband (in-patients). In the case of an out-patient, also confirm the address with the patient. The sample must be labelled at the patient's (bed)side, as is the case for blood samples.

Samples should be sent to the laboratory as soon as possible after taking via the chute. If this is not possible or, if taken outside of routine laboratory hours, store samples in the designated microbiology sample refrigerator, directly after collection.

The quality of microbiology samples is dependent on the correct sample taking technique and correct storage conditions pre-testing.

8.3.1 Instructions for the Collection of Mid-Stream Urine (MSU)

A mid-stream urine is tested to establish if a patient has a urinary tract infection (UTI)

Tips to give to the patient before passing a sample of urine:

Do not empty bladder for three hours, if possible. Ensure the sterile container is labelled with patient's **forename, surname, date of birth MRN and date/ time of collection**. Do NOT use an un-sterile container. Use only the container provided by the hospital. An unsterile container will be rejected in the laboratory.

The aim is to get a sample of urine from the middle of your bladder. Urine is normally sterile. A 'mid-stream' sample is the best sample as the first void of urine passed may be contaminated with bacteria from the skin. Do not open the sterile container until the patient is ready to take the sample.

Pass some urine into the toilet. Without stopping the flow of urine, catch some urine in the sterile container (fill approx. half full). Finish passing urine into the toilet. Close the lid tightly. Place container into a biohazard bag and seal.

Wash hands thoroughly with soap and water.

Check that the request form contains **the minimum patient identifiers required for samples as per section 7.3 and other required information**. Place the request form into the outer pocket of the biohazard bag.

8.3.2 Instructions for Collecting a Faeces / Stool Sample

Tips to give to the patient before collecting a sample of faeces/ stool:

Label the container (30ml universal container with blue lid) with patient's **forename, surname, date of birth, MRN and date/ time of collection.** Make sure there is no trace of disinfectant or bleach present in the lavatory pan or commode, as this will interfere with the test. Open the sample container and transfer a scoop of faeces and into the container. There is no need to fill the container. Screw the lid tightly back on the container.

Place the container into a biohazard bag and seal. Wash your hands thoroughly with soap and water.

Check that the form contains **the minimum patient identifiers required for samples as per section 7.3 and other required information.** Place the request form into the outer pocket of the biohazard bag.

8.3.3 Instructions for Collecting a Sputum Sample

Tips to give to the patient before collecting a sample of faeces/ stool:

Ensure the sterile container is labelled correctly with patient's **forename, surname, date of birth, MRN and date/ time of collection**. Do NOT use an un-sterile container. Use only the container provided by the hospital. An unsterile container will be rejected in the laboratory.

The ideal time to collect the specimen is early in the morning just after getting out of bed. However the specimen may be collected at any time sputum is available to be produced. **DO NOT** use mouthwash or brush teeth with toothpaste immediately before collection. Gargle and rinse your mouth thoroughly with water.

Open the container and hold very close to mouth Take as deep a breath as possible and cough deeply from within the chest. **DO NOT** spit saliva into the container. Saliva is not a suitable specimen for examination. The specimen should look thick and be yellow or green in colour. Avoid contaminating the outside of the container. Close the lid tightly when specimen has been obtained.

Place specimen in a biohazard bag and seal.

Check that the request form contains **the minimum patient identifiers required for samples as per section 7.3 and other required information**. Place the request form into the outer pocket of the biohazard bag.

8.3.4 Instructions for the Collection of Blood Cultures

Two bottles are required - A **green flip top** (**aerobic)** and a **purple flip top** (**anaerobic)** bottle. Wash hands thoroughly and put on gloves. Remove the plastic flip top and sterilise the exposed rubber cap with an alcohol swab. Allow alcohol to dry.

Do not use disinfectants such as iodine or chlorhexidine for this purpose.

Clean the venipuncture area with Mediswabs, beginning at the centre of the site and scrubbing in a circular motion outwards to a diameter of three or four inches for about 30 seconds. Do not go back over the previously scrubbed areas. The alcohol washing might have to be repeated, depending on the cleanliness of the skin. Allow the alcohol to dry. Do not touch the venepuncture area after this.

Using a needle-protected butterfly needle and blood culture adaptor cap, push in the **aerobic (green)** bottle first (5ml (min) - 10mls (max) of blood draw) and then the **anaerobic (purple)** bottle (5ml (min) - 10mls (max) of blood draw). This sequence will prevent the air in the butterfly tube from entering the anaerobic bottle. If using a syringe then the anaerobic bottle is taken first and then the aerobic bottle.

Label each bottle with

- the minimum patient identifiers (Ref section 7.1),
- sample site (PICC) or (Peripheral) and
- date and time of collection.

Note: **Do Not** remove the barcoded label from the bottle.

During routine lab hours, Blood Cultures are sent to the lab by chute. Out-of-hours they are sent directly from the ward to SVUH via the switchboard.

Note: Blood culture bottles should never be placed in the fridge.

8.3.5 Instructions for the Collection of 24hr Urine for Creatinine Clearance

24hr urine collection containers are available from the laboratory. Contact 5191. It is important to note that two containers may be required to capture the full 24hr urine collection. Label container with a patient addressograph label. Label the container also with the hospital and test required.

If any of the urine within the 24 hour collection period is lost, or not collected, the test becomes invalid and must be repeated.

Collection procedure:

To start:

1. Empty bladder into the ***toilet*** upon waking in the morning eg.*8am*.
2. The collection period now begins. Write the date and time onto the container in the designated "Start of Collection" space.

3. All urine passed after this time must be collected into the urine container, for the next 24hours. This includes any urine passed at the time of a bowel movement.
4. Close the urine container well after every use.
5. Store the container upright in a cool place eg. Refrigerator.

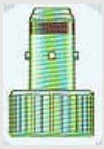
To end:

1. The following morning upon waking, empty the bladder into the container. Eg.*8am*
2. Collection is now complete. Write the date and time onto the container in the designated "End of Completion" space.
3. The container is brought to the hospital as soon as possible after completion. Hand the filled container to your nurse.

** A serum sample must also be taken within this 24hour for creatinine measurement. **
Both the completed serum sample and the 24hr urine container are sent out together to the referral laboratory.

8.4 Procedures for Taking Blood (Phlebotomy) and Sample Labelling Requirements

Figure 1 below displays the blood bottle types to be used and order of draw:

Colour Code	Investigation	Order of Draw
BLOOD CULTURE BOTTLES	Aerobic blood culture bottle (1st) Anaerobic blood culture bottle (2nd)	1
Coagulation 	Coagulation FILL BOTTLE TO THE LINE *Ref 9.6.1* Sodium Citrate (3.0ml – green top)	2
ESR 	ESR FILL BOTTLE *Ref 9.6.1* Sodium Citrate (3.5ml – violet top)	3
Biochemistry & Tumour Markers 	Most Clinical Chemistry, Immunology, Serology, Endocrinology, Therapeutic drug levels Serum (5.5ml - clear top)	4
Troponin I 	hsTroponin I Lithium Heparin – Plasma (4.9ml - orange top)	5
Blood Transfusion 	Transfusion Blood Group, Cross Match, DAT EDTA (**7.5ml/4.9ml** – large red top)	6
Haematology 	FBC, HbA1c EDTA (**2.7ml** – small red top)	7
Glucose/ Lactate 	Glucose, Lactate Sodium Fluoride/EDTA (**2.7**ml – yellow top)	8

PAEDIATRICs: For paediatric blood sample sizes, please contact the paediatric CNS in radiotherapy.

8.4.1 Taking Blood using the PDA on the WARD

NOTE: All blood samples must be taken at ambient room temperature (18-25°C) and sent to the laboratory via chute without delay. If samples are being sent in batches to the lab, storage at ambient temperature must be ensured, unless otherwise specified within LF-PATH-021 Specimen Referral Index, until received by the lab.

****The use of the PDA for sample taking is recommended for all blood samples but is MANDATORY for Blood Transfusion samples.****

- Patient preparation, hand hygiene and disposal procedures are as per phlebotomy procedure when not using the PDA, see Section 8.4.3.
- Bring PDA (scanner) and printer to the patient's bedside before taking samples.
- Check that the patient is wearing a SLH identification wristband. If there is:
  - **NO wristband**, DO NOT proceed and inform nursing staff.
  - **a non-SLH wristband**, DO NOT proceed and inform nursing staff.
- Go to patient with an addressograph-labelled Request Form and the appropriate specimen bottles for tests requested. Refer to Sections 7.1 and 7.2 for request form labelling requirements.
- Perform Positive Patient Identification (PPID).

All of the following checking steps are to be taken without exception, even if the blood-taker is familiar with the patient.

Positive Patient Identification

Patient vs Request Form

With the request form in hand, ask the patient to state (if able) their ***forename, surname and date-of-birth*** and verify that these match the request form.

Request Form vs Wristband

Verify that the details on the wristband, ***forename, surname, DOB, hospital number (MRN) and gender***, match those on the request form.

Note: *If the patient is unable to state their name, etc, then verify the patient's full name, date-of-birth and hospital number (MRN) with the patient's wristband and verify these details with parent/guardian/nurse/carer.*

1. If there are any discrepancies, **do not take the specimen(s)** and inform the patient's nurse who should investigate any anomalies.
2. If there are no discrepancies, the sample collection procedure may proceed.

- Collect sample/s of blood from the patient using the PDA.
- Bring the PDA and printer to the patient
- Select 'Collect Sample' using stylus attached to PDA and follow steps
- Scan your staff ID badge, using the button on the side of the device.

  NB: **NEVER** use another staff member's badge.
- Scan the 2D barcode on patient wristband.
- Tap next
- Verbally confirm the patients ID.
- Tap next.
- Complete all Reminders –tap each box to indicate identification checks have been performed
  - Patient's first name
  - Patient's last name
  - Patient's date of birth
  - Patient wristband
- Print the required number of labels by tapping on the number of copies you require and then tap 'print' twice.
- Scan barcode on printer. Labels will print.
- Place these labels directly over labels on bottles allowing volume in bottle to be viewed.
  - For Blood Transfusion requests place one of these labels in the shaded 'sample taken by' area on the bottom right hand side of the request form.

  NB: Discard any unused labels immediately. Do not preprint labels.
- Tap done to complete the process
- When samples are taken the PDA and printer should be wiped down with an antiseptic wipe.
- The PDA must be placed carefully back into the cradle ensuring that the little light at the top is on. This charges the PDA battery and also uploads the data onto the system. Ensure printer cable is re-attached to keep battery charged.

8.4.2 Taking blood using the PDA in the Outpatient phlebotomy department

The outpatient phlebotomy department is located near the main entrance to the hospital, within the Outpatient Department. Proceed with all steps as in Section 8.4.1 above, however, as the patient is unlikely to be wearing a wristband, **PPID** is performed by verbally confirming the patient's name, date of birth and address with the addressograph label on the request form. Phlebotomy staff record all samples taken on PHLEB-SLH-F-001 Patient Sample Test Log.

PHLEB-SLH-F-002 Traceability for Patient Refusal and Failed Attempts is completed when either a patient refuses phlebotomy or when it is not possible to collect the requested blood samples for eg. bad veins.

8.4.3 Taking Blood on Wards - when not using the PDA

This procedure should only be undertaken when the PDA is not available for use.

- Source patient specimen labels from the correct patient's chart.
- Carefully check specimen label details against the patient's request form to ensure that you have matching details, apply these to the bag adjoining the request form, before proceeding to the patient's bedside.
- Before approaching the patient, the blood-taker must ensure that they have washed their hands and are wearing gloves.

8.4.3.1 Consent

- Explain to the patient clearly, the procedure they are about to undergo including any potential risks and seek their verbal consent. Patient consent for phlebotomy may also be implied by presentation/extension of their arm.
- Once consent is given, ensure the patient is ready for venepuncture and in a relaxed state.
- If consent is not given, or if the patient resists when Phlebotomy is attempted (in the case of the non-verbal patient), do not proceed and inform nursing staff that you cannot proceed on this occasion.

8.4.3.2 Positive Patient Identification (PPID)

- Before blood is taken on **any** patient, ensure that you have a correctly completed request form in hand, in order to perform **PPID.** Refer to Sections 7.1 and 7.2 for request form labelling requirements.
- **Perform PPID** as per 8.4.1.

8.4.3.3 Patient Preparation

- Observe the tests requested and verify with the patient their medication status eg. on warfarin, and that they are fasting, where required.

- Apply tourniquet and select a suitable vein. Do not leave tourniquet on for longer than one minute at any one time as prolonged use can alter test results.
- Cleanse the venepuncture site using an isopropyl alcohol wipe. Allow to dry.
- Perform venepuncture, inserting needle with bevel edge uppermost
- Release tourniquet once blood flows.
- Take blood samples in the order as shown in Figure 1 Section 8.4 above, using either the vacuum or aspiration technique, as appropriate.
- Invert EDTA blood bottles gently upon filling to ensure adequate mixing with the anticoagulant.
- Once all bloods are taken, withdraw the syringe and maintain pressure on the venepuncture point on the patient's extended arm using a cotton wool ball.
- Dispose of all sharps materials (i.e. needles) into a Yellow Sharps Bin. Dispose of other materials used into soft Health Care Risk Waste Bin.
- Send samples to the laboratory via the chute system without delay (see section 9 for further details).

8.4.3.4 Sample Labelling Requirements

- Samples must be labelled immediately after sampling at the patient's side.
- Ensure all actions are completed for each patient before moving to the next patient.
- Before affixing specimen labels to filled blood tubes, double check that the labels on the bag of the patient's request form, match the addressograph label on the request form.
- Apply labels vertically and directly over the bottle label, ensuring the window is visible. Refer to Section 8.4.5 for correct labelling technique.
- The following details **must** be displayed clearly on **all** blood samples for Biochemistry/Tumour markers, Haematology, Coagulation and Blood Cultures:
  - **Minimum Patient Identifiers**:
  - Patient's Forename & Surname
  - Patient's Date of Birth
  - Hospital Number(MRN)
- The following details **should** be displayed clearly on all blood samples for Biochemistry/ Tumour markers, Haematology, Coagulation and *Blood Cultures:
  - Date and Time Sample was taken

- *Site of collection (PICC) or (Peripheral)
- & Phlebotomist Initials

- The following details **must** be written clearly on all blood samples for **Transfusion**:

  - Patient's Full Name (initials/abbreviations not acceptable)
  - Patient's Date of Birth
  - Patient's Hospital Number
  - Date and Time Sample was taken
  - Blood Taker's signature

8.4.4 Taking Blood in Outpatients Phlebotomy Department - when not using the PDA

- Patients will arrive with an addressograph labelled request form containing their full name, date of birth and hospital number. Where there is incomplete or inaccurate information on the request form the phlebotomist must follow up with the patient's team to amend these details before proceeding with phlebotomy. Refer to Sections 7.1 and 7.2 for request form completion requirements.
- Before approaching the patient, the blood-taker must ensure that they have washed their hands and are wearing gloves.
- Proceed as per section 8.4.3.1 above.
- Perform PPID as follows:

The following checking steps are to be taken without exception, even if the Phlebotomist is familiar with the patient.

- **Check that the details on the addressograph label are correct by confirming patient's forename, surname, date of birth and address verbally with the patient.**
- Do not proceed unless all details are correct. If there is a discrepancy, refer the patient back to their point of origin for necessary amendments and only proceed after correct details are available.

8.5 Sample Labelling Technique

- Always label the sample at the patient's bedside. **Never** take unlabelled samples away from the patient to be labelled elsewhere.
- The laboratory advises the use of PDA for all sample taking and sample labelling. In the event of this not being available, the use of the small pre-printed patient sample labels, within patient's medical records, should be used for labelling samples
- Labels must be applied vertically and directly over the sample tube label leaving the sample window visible. See images below.
- Follow good sample labelling practice, when applying sample labels, especially if using addressograph labels. Addressograph labels are not advised for labelling blood sample tubes. When the label used is too big, as per images below, it obscures the sample from view and may also cause equipment failure due to jamming.
- Note specifics below for particular sample types.

Note: For **Blood Transfusion Samples**, only PDA labels are accepted on these samples. Use of any other label will be rejected.

Note: For **Blood Culture bottles**, ensure both the barcode on the bottle and the base of the bottle are not covered by a label.

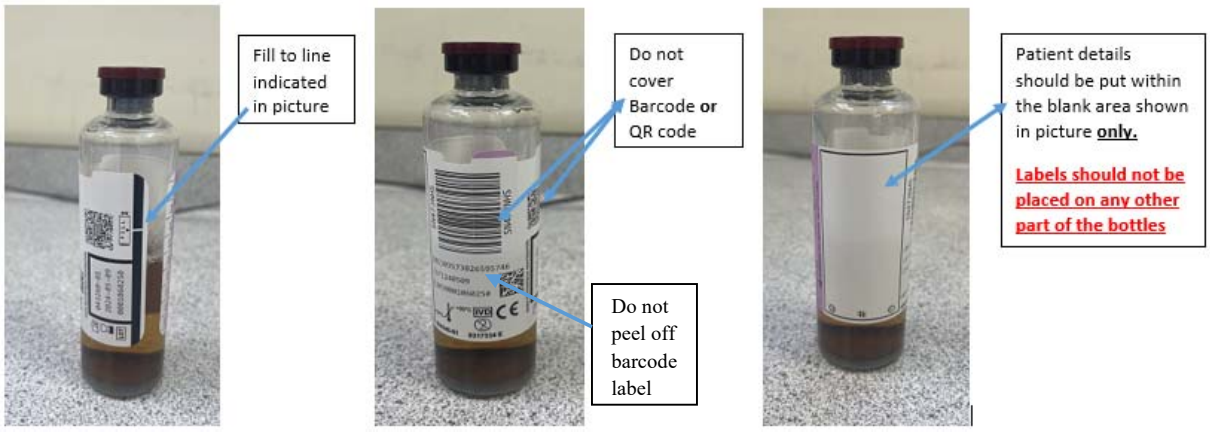
Any sample labelling technique which causes ambiguity over the sample identity, will be rejected in the interest of patient safety, and a repeat requested.

8.5.1 General Blood Samples

8.5.2 Blood Transfusion Samples

- Mandatory use of PDA for sample taking and labelling
- The use of addressograph or small patient sample labels is not permitted on Blood Transfusion samples.

8.5.3 Blood Cultures



SVUH request that the barcoded label is NOT removed from the bottle, as this impacts the loading process on the analyser for incubation.

9 TRANSPORT OF SPECIMENS TO THE LABORATORY AND LAB REPORTS TO THE WARDS

Samples are transported to the laboratory by the pneumatic tube delivery system, in sealed bags. The AC3000 Pneumatic Tube System (chute system) is a vacuum and blow delivery system, which has been installed at St. Luke's Hospital for the purpose of delivering laboratory specimens, reports and other small items between the following installed stations:

- Laboratory / Phlebotomy and OPD / Day Ward / Wards A, B, C and D / Radiotherapy / Pharmacy.

The system has a delivery time of approximately 70 seconds between stations. The system allows for the minimization of delay from specimen collection to receipt at the laboratory that is especially beneficial for urgent specimens. Defined delivery times for routine hardcopy lab reports back to the wards are 11.30am and 4-5pm Monday to Friday.

9.1 Sending a Pod in the Chute System

The system is set so that the automatic sending address from stations other than the Laboratory is the Laboratory but specimens/other items may also be sent between any two stations. Please follow the instructions displayed below the keypad on the station box, when sending a pod.

Also please note the following requirements:

- Please ensure packaging of samples is performed aseptically so as to prevent exposure to lab staff of potentially hazardous material.
- Ensure all containers with liquid contents are well sealed to prevent spillage and contamination of the pod.
- Specimens must always be sent in a sealed plastic bag with request form attached. Microbiology/Histology specimens should be sent in sealed "Biohazard Bags."
- COVID swabs must be double bagged.
- Please make sure that nothing is protruding upward so as to prevent the pod cap from closing, otherwise the system could become blocked.
- Please ensure that specimen containers are securely closed with caps tightened. This is especially important for Urines/Fluids to prevent leakage into pods.
- DO NOT SEND BLOOD PRODUCTS, 24hr URINES, ENDOSCOPY WATERS, GLASS SLIDES OR BLOOD UNITS/ ADMINISTRATION SETS THROUGH THE CHUTE SYSTEM. Please call a porter if 24hr Urine or slides are to be brought to the lab.
- DO NOT SEND bulky paperwork via the chute system eg. Kardex,

9.2 Sending a pod to the Laboratory outside of routine service hours (on-call)

The Laboratory routine service hours are outlined in Section 4.0 along with how to contact the on call medical scientist out of hours.

Important Note: If taking bloods outside routine opening times, CALL THE LAB VIA THE SWITCHBOARD. DO NOT JUST SEND THEM IN THE CHUTE, as there won't be lab staff on-site to receive them.

9.3 Sending Microbiology Samples via Chute

9.3.1 Blood Cultures

Blood Cultures should be sent in the chute system to the laboratory **only** between the hours of

- 6am and 17.30 weekdays and
- 8am and 12noon on Saturday.

Outside of these hours, blood cultures must be sent form the ward to SVUH directly. This applies to Sundays and Bank Holidays also. A recording, labelling and packaging station for blood cultures is present on D ward. Transport occurs from the Hospital Main Reception Desk. Refer to the following documents, available on the intranet for these instructions.

Referral of Blood Cultures out of Hours (Sender Instructions)

Referral of blood Cultures out of Hours (Switchboard)

NB: Blood cultures must never be refrigerated and blood cultures should be received in SVUH within 4 hours of phlebotomy.

9.3.2 All other Microbiology samples

Urines, swabs, sputa etc. should be sent by chute during routine lab working hours. Refer to Section 4.0.

Note: on Saturdays, however, microbiology samples must be received in the lab by 09.00 to allow for packaging and transport to SVUH asap.

Outside of these hours keep samples refrigerated in the designated fridge in the sluice room opposite Day ward.

NOTE:

- **Do not put Blood Cultures into the designated "Micro Specimen" fridge at any time**.
- **Do not put any other Micro samples in the designated "Micro Specimen" fridge, during routine laboratory working hours, as referral may be delayed.**
- **COVID swabs must be double bagged.**

Laboratory staff collect samples from the 'microbiology samples' storage fridge once daily. Samples are collected shortly after 9am on Saturdays/Sundays and Bank holidays.

9.4 Receiving a pod

- When a pod is delivered to your area, remove the contents and return the pod to the destination to which it belongs. This is printed clearly on each pod.

- The delivery basket should be kept clear to prevent stacked pods from building up and blocking the system.
- Laboratory reports are sent directly to A, B, C, D wards by chute.

9.5 Chute System problems

- In the event of a fault developing, one of the display lights will **flash red** below the message display.
- If this happens please phone the maintenance helpline immediately on 8413005.
- The system is supported 24/7, 365 days a year by the supplier who can be reached at the above number.
- In the event of the laboratory receiving pods, which contain leaking specimen fluids, they must be decontaminated at the laboratory and the sample will likely not be suitable for processing.

9.5.1 Contingency in the event of Chute System downtime.

If one of the chute stations is not operational, users are requested to use the closest available station to them instead. If the entire system is down for any reason, samples will need to be hand-delivered to the lab. Please either bleep the head porter to arrange this or in the case of urgent samples, bring them directly to the lab to avoid any unnecessary delay.

10 LABORATORY SAMPLE REJECTION POLICY

A report is issued for all samples received for processing in the lab. For rejected samples, a report will be issued containing either partial or no test results. Where no results are issued, the patient's team is requested to repeat the sample. A comment will accompany each report indicating the reason for incomplete or absent sample testing.

Refer to Section 7.0 for request form labelling requirements and Section 8.4.3.4 for sample labelling requirements.

Under no circumstances can laboratory staff be asked to add to, or alter any details present on either request forms or samples.

10.1 Unlabelled Samples or Request Forms

When a request is received where either the sample or the request form is unlabelled, the sample will be given a lab number but will not be processed.

If the sample is critical in nature and cannot be repeated, it will be processed but results will be withheld until such time as an authorised staff member (preferably the original sample taker) from the hospital comes to the laboratory to properly label the specimen. In this instance the staff member in question will be required to sign a "Responsibility acceptance for sample/form labelling form" QF-PATH-062, indicating that they have accepted responsibility for the labelling. The final report will indicate the nature of the problem and where applicable, will advise caution when interpreting results.

10.2 Samples where an ARIA number is provided instead of MRN

These samples will be returned by the lab to the point of origin before any testing work is done, for provision of the MRN which is essential for patient registration in the laboratory computer system.

10.3 Incorrectly Labelled Samples/Request Forms

On receipt of an incorrectly/inadequately labelled samples/ request forms, ie minimum labelling requirements are not met or are incorrect a per Section 7(request form) and Section 8(sample), the care area in question is informed of the error and a repeat sample may be requested depending on the nature of the error.

In cases whereby the sample cannot be repeated, the sample taker must come to the laboratory to properly label the specimen. The staff member must sign a 'Responsibility Acceptance for Sample/Form Labelling' form, QF-PATH-062, indicating their acceptance of responsibility for the retrospective labelling of the sample/request form as the intended patient.

The severity of the labelling error determines whether an incorrectly labelled sample may or may not be processed. In general minor typographical errors ie, where the identity of the patient is not compromised, do not warrant a repeat sample, however, results are withheld until the error is rectified by the staff member responsible for taking the sample, who must come to the lab. A record of this amendment is kept in the laboratory. A complete labelling mismatch between sample and request form, however, results in immediate rejection of the sample such that a repeat sample is required (unless the sample is critical in nature – see above).

Any instances where amendments are made to the sample/request form retrospectively result in an appropriate comment being applied to the report for that sample and completion of QF-PATH-062

Note: A zero tolerance policy applies to the labelling of Blood Transfusion samples.

10.4 Wrong-Blood-In-Tube

"Wrong-Blood-In-Tube" (WBIT) is considered a **serious labelling error and presents a patient safety concern**. It occurs when specimens are taken from one patient but are labelled with the details of another patient. This can happen especially with addressograph labels, whereby blood is taken on one patient, but then ***matching labels are applied to both samples and form, but for a different patient!*** These errors can be difficult to detect within the laboratory as both the request form details and sample details correspond. Often discrepant historical results are the only indicator of such an error allowing laboratory staff to question the samples received. The lack of historical laboratory results makes this error impossible to detect on first time patients.

When WBIT is suspected a repeat sample is requested prior to the release of any results. Such incidents are logged as non-conformances and are discussed with the individual who took the sample. They are also logged on the "Hospital Incident Reporting System."

TO AVOID SUCH ERRORS: PRACTICE **P**ositive **P**atient **Id**entification (PPID) using a correctly labelled request form as follows:

- BRING A CORRECTLY LABELLED REQUEST FORM, TO THE PATIENT'S BEDSIDE.
- USING THE REQUEST FORM, CONFIRM THE PATIENT's IDENTITY USING THEIR FORENAME, SURNAME, DOB, and HOSPITAL NUMBER(in-patients) both,
  1) VERBALLY AND
  2) AGAINST THEIR WRISTBAND (in-patients).
- LABEL SAMPLES AT THE PATIENT'S BEDSIDE

10.5 Inappropriate Containers

Laboratory staff check that samples received, are in the appropriate containers for the tests requested. Samples are rejected if an inappropriate container is received, where such containers might invalidate the test requested. The required sample containers to use for the various tests analysed at SLH are noted on the reverse of each blood test request form. These are also described in Section 17.1. For referred tests, please phone 5191.

10.6 Unsuitable and Poor Quality Samples

The following are examples of common analyses, which may be compromised by incorrect sample volumes or poor sample quality and result in the rejection or partial analysis of the sample.

- For other examples of situations where test results will be affected by compromised samples, see alphabetical listing of laboratory tests in Section 17.1.

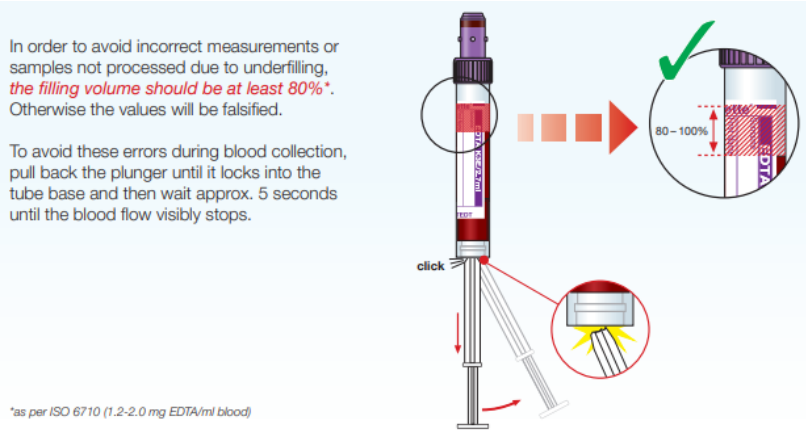
Refer also to the Order of Draw Table, Figure 1 Section 8.4, which is pertinent to ensuring no contamination of samples during phlebotomy procedure.

10.6.1 Incorrect volume – FBC, Coagulation Studies & ESR

Sample state	Affected Tests
Insufficient sample volume (Underfilled)	Coagulation tests, ESR (All tests if there is insufficient for analysis)
Excess sample volume (Overfilled)	Coagulation tests, ESR

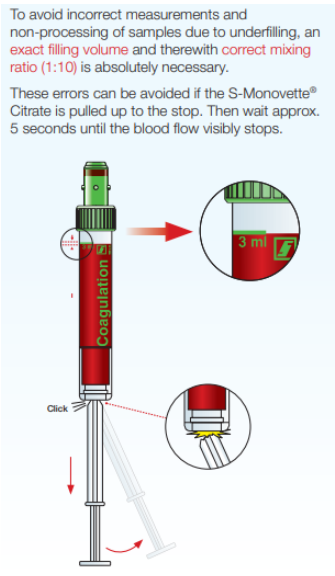
See Sarstedt (manufacturer) instructions below relating to various samples:

1. **FBC**



Note: sample top colour in image is different to that used on-site

2. **Coagulation**

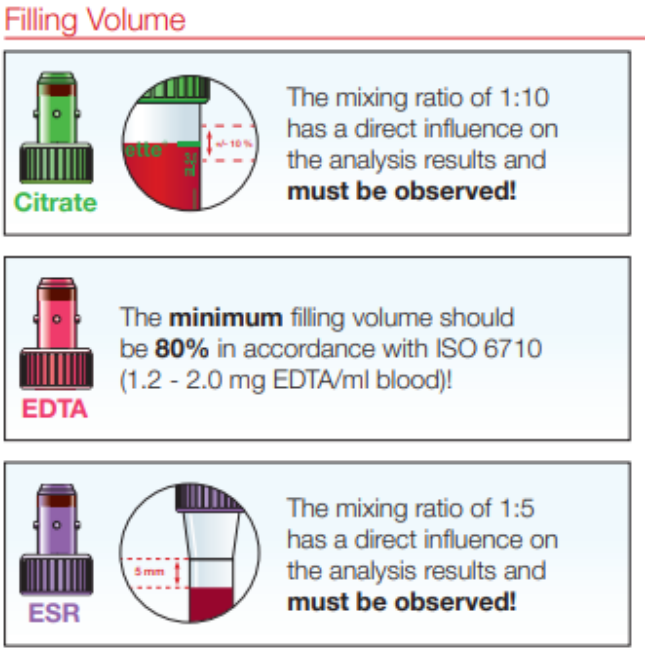


Fill the coagulation bottle to the "fill-line", shown as a green horizontal line at 3ml

3. ESR

Fill the ESR bottle to the taper in the neck of the bottle.

In Summary:



10.6.2 Haemolysis

Haemolysis may invalidate Biochemistry parameters, depending on the degree of haemolysis. Results will not be reported on significantly affected parameters. Refer to Section 16.2 for breakdown of Biochemical tests affected by Haemolysis.

Haemolysis may also affect coagulation and blood transfusion studies.

10.6.3 Clotted

EDTA – Full Blood Count (FBC) and Sodium Citrate - Coagulation samples that have clotted are unsuitable for analysis. Ensure adequate mixing of samples at time of phlebotomy to prevent this.

10.6.4 Contaminated/Diluted/Haemoconcentrated Samples

Known or suspected contaminated/diluted/haemoconcentrated samples, including all blood / non-blood samples are rejected upon detection. Where definitive evidence of such samples is not present but there is suspicion over the results – the results may be released with a cautionary interpretative comment and a request for a repeat sample made.

10.6.5 Incorrect Sample Storage/ Delayed receipt

Depending on the circumstances and tests requested, such samples may be either rejected or, processed and reported with an appropriate comment. Examples are inappropriate temperature storage and sending samples to the lab by chute at night but not contacting the Medical Scientist on-call.

DEPARTMENT	TEST	TIME LIMIT	STORAGE CONDITIONS
Coagulation	PT, APTT, INR, D-Dimer	4hrs	Room temperature**
Haematology	FBC Thromboexact ESR	12hrs 12hrs 4hrs	Room temperature Room temperature Room temperature
	Blood Film	4hrs*	Room temperature
Biochemistry	Clinical Chemistry Testing	12hrs	Room temperature
Tumour Markers	as per Table 17.1	N/A – samples are frozen upon receipt and are available for add ons	
Blood Transfusion	Group & Hold or Crossmatch	12hrs	Room temperature

**Ideal time limit **Room temperature = 18^{o}C-25^{o}C*

Samples received at >12hrs may be tested at the discretion of the medical scientist, where a result is required urgently or the sample cannot be easily repeated. Where testing may be facilitated, a comment indicating the aged nature of the sample will be issued alongside results, suggesting caution when interpreting.

References:

*IFU_10_506_0000_100_EU-ISO_0725 Instructions for Use SARSTEDT S-Monovette Blood Collection System_*

IFU_99_575_0000_100_EU-ISO 0525 Instructions for Use – Sarstedt S-Monovette ESR Blood Collection System

10.6.6 Leaking or Blood Stained Samples

Rejection criteria for these depend upon the criticality of the sample, validity of results if the sample is processed, the potential hazards to laboratory staff, if handled, and, the ability to obtain a repeat sample. Each is assessed on a case-by-case basis. Where a sample is rejected a repeat will be requested.

Note: *All sample errors including labelling errors are documented for internal auditing purposes and trend analysis. All samples are logged onto the Netacquire system regardless of suitability for processing and a report is issued with relevant comment(s) indicating for example the nature of rejection or the requirement for considering the impact haemolysis/incorrect storage etc. may have on the sample results. A request for a repeat sample is made by phone to the patient's team.*

11 REPORTS

11.1 Reporting of Laboratory Results

Test results are reported daily following validation and authorisation of results. Results are reported in both *hard copy format*, which are printed and sent to A, B, C and D wards via the chute system, and *electronically* via the ward enquiry system for all results. Refer to Section 12 for information relating to the Ward Enquiry system.

Reports are exported in PDF format for import into ARIA system for Day Ward, Outpatients Department, Radiotherapy, Nuclear Medicine, Clinical Trial Unit and the Lodge.

Test results will not be communicated to patients directly by laboratory staff. Patients may contact their medical team secretary to follow up on results or may request access via rfi@slh.ie.

11.2 Delayed reporting

The laboratory attempts to ensure that sample analysis is minimally impacted in the event of unforeseen circumstances that could cause a delay in sample processing, for example analyser breakdown, LIS failure, staffing issues etc. Where a delay may impact stated turnaround times, the relevant clinical team or care area will be alerted to the delay.

11.3 Out of range results

For tests performed in-house, out of range results are highlighted to the user by the use of emboldened text on laboratory issued reports. These results may be higher or lower than the normal reference range, which is displayed alongside all results, where applicable.

For results viewed through ward enquiry, out of range results are colour coded. Refer to Section 12 below.

11.4 Confidentiality of Reports

All personal information received into the laboratory is safeguarded in line with HSE Data Protection Policy which sets out to ensure compliance with the GDPR. Data subject confidentiality is strictly adhered to. Each laboratory employee is contractually bound not to divulge any patient information, is inducted on confidentiality and partakes in mandatory GDPR training.

11.5 Transport of Reports to the Hospital

- Routine hardcopy laboratory reports are sent via the chute system daily at times outlined in Section 9.
- Urgent hardcopy reports will be sent on special request to the ward as soon as they are authorised. Otherwise, the normal procedure is that urgent results are electronically available on "Ward Enquiry" for review by the patient's clinical team. Ref Section 12.0.
- The following areas are not directly served by the chute:
    - Occupational Health

  Reports for here are sent via internal post.

11.6 Laboratory Policy on Emailing Results

On occasions the laboratory may be requested to email results to an external location eg hospice, GP etc. Note the email address clearly on the request form or the department of the hospital to which it is intended to be sent. Personal email addresses are not accepted.
As per HSE policy, emails are considered a safer method of communication than faxing. Any files containing patient or sensitive information are password protected (encrypted) prior to emailing. Only emails to an @HSE domain email address are not encrypted.
Once a result has been emailed, the report will include a statement 'Emailed to <Relevant Site>.'

11.7 Laboratory Policy on Faxing Reports

The pathology laboratory has a no fax policy. Please supply email address of relevant health facility department to which results are required to be sent. Refer to Section 11.6.

11.8 Laboratory Policy on Posting Reports

Reports are sometimes posted externally from SLH Lab to a known healthcare institution including hospitals and GP practices etc. This method is acceptable once the postal envelope is sealed, marked "private and confidential" and an eircode is used. Reports for posting are brought to the main hospital post room for franking and post collection in the afternoon.

11.9 Laboratory Policy on Verbal Reports

On occasions the laboratory may be requested to give a verbal report over the phone, on a historic report or in the event that LIS/Ward enquiry and/or chute is down. Only authorised(final) reports can be given over the phone and by trained medical scientists. However, the policy of the laboratory is to send a hardcopy to the ward via the chute, whenever possible, or to email them in order to reduce the risk of potential transcription errors.

Results are never given directly to patients. Patient requests for results are directed to either their medical team secretary or the rfi@slh.ie email address. Preliminary results, that have not yet reached validation stage, are not given over the telephone unless cleared with personnel directly responsible for result validation.

Verbal reports are only relayed to clinicians, healthcare secretaries and nursing staff.

When verbally relaying a result(s) scientific staff:

1. Identify themselves,
2. Requests the identity of who they are speaking to, noting their details and job title
3. Identify the patient: using full name, DOB and hospital number.
4. Give the result(s) clearly (including reference range & units and any report comments)
5. Request a read back & ensure result received correctly
6. Document all details of the verbal reporting into LIS or LF-PATH-003 Telephone Report Log.

11.10 Laboratory Policy on Phoning Critical Results

The laboratory phones critical results to the clinical team responsible for the patient, on first presentation of that result. These results are categorised according to the severity of potential underlying diagnoses, imminent risk to the patient and the urgency of intervention required.

Critical results are phoned in line with Clin P 001 Communication of Laboratory Critical

Results, available on the intranet. The laboratory recommends that this policy is read in full by all clinicians.

Refer to Section 17.8 for the most current list of critical test results communicated from Biochemistry and Haematology.

Note: While medical scientists make every reasonable effort to verbally alert the clinician about a critical result, it remains the responsibility of the blood test requester to follow up on and review those patient results within a timely manner. All authorised results are available for review on the Ward Enquiry system.

11.11 Laboratory Policy on Amended Reports

On occasions, the laboratory may have to issue an amended report i.e. a follow up report in which some detail or details that were present on the original report have been changed. This may occur with regard to re-issue of corrected demographic details or test results. All amended reports will be issued containing the following comment: "Amended Report" to alert the user to the fact that the report has been amended. The amended report can replace the original report if the original has not yet been signed as reviewed by the medical team. If the original report has been signed by the clinician and filed in the patient's medical records, it cannot be removed. A note will be added to the original report requesting that the report is disregarded and that an amended report is now available and should be consulted. Any amendments considered to be of clinical significance will be notified to clinical personnel.

11.12 Clinical Advice and Interpretation on Reports

Laboratory Management ensure that advice on the selection of examinations and the interpretation of results is available upon request, to meet the needs and requirements of users. This advice, where required includes:

- The choice of examinations and the use of the services including repeat frequency and the required type of specimen,
- The precision and accuracy of methods used in the Laboratory,
- The clinical significance of results and their relation to reference ranges,
- Where possible the suitability of the requested analyses to solve the clinical problem in question,
- Additional examinations which may be helpful,
- The necessity for repeat examinations where appropriate,

Refer to Section 5 for contact numbers.

11.13 Reporting of Results from Referral Laboratories

Hard copy reports are returned to the SLRON at SLH laboratory, from referral laboratories, by courier or by post, Monday to Friday. These are scanned into the appropriate patient's referral record on the laboratory computer system and are available for review on Ward Enquiry, Refer to Section 12. The hard copy report is then sent to the ward for filing or is exported, as appropriate.

Reports from two referral laboratories, namely Eurofins Biomnis and St. Vincent's University Hospital, are also available via electronic access to their reporting systems, from the wards. Results viewed in this way are available quicker than awaiting the return of the hard copy report. In general, critical results noted by referral laboratories are communicated directly to the relevant clinical teams or to SLH scientific laboratory staff, who will then contact relevant team. See below for further specifics.

11.13.1 Results from Biomnis

Results are available electronically as soon as they are authorised in Biomnis. They can be accessed by Ward Staff using a username and password, available from the laboratory, on the Eurofins Biomnis website 'Access On Line Results' page:

Eurofins - CDx Connect

Contact Biomnis Client Services (01) 2958500 Mon-Fri 08:30 to 17:30 for access issues. If the online result access system is unavailable, email clientservices@ctie.eurofinseu.com to access results Mon-Fri 08:30 to 17:30.

11.13.2 Results from St. Vincent's University Hospital (SVUH) – including all microbiology

Results are available as soon as they are authorised in SVUH on the APEX look up system available at ward level. APEX can be accessed using a specific log in and password, which can be obtained from the laboratory.

Note: APEX must be installed under each staff members PC log on. If it is not present under a staff members PC applications, ICT must be requested to do this.

Refer to Appendix 1 of this document for instructions on how to access patient results via APEX.

11.13.2.1 Phone communication from SVUH re Urgent Results

Blood Cultures

Positive Blood Culture results are routinely phoned by the SVUH lab medical team directly to the relevant medical team at SLH as soon as the Gram Stain and/or Culture results are available. In the event that phone systems are down, SVUH will phone the SLH switchboard emergency mobile directly so that results can be relayed to the SLH ward via that ward's emergency mobile number.

Positive CPE and *C. difficile* results

These results, including preliminary positive CPE results, will be phoned by SVUH to:

- Monday – Friday, 0900-1700h:
  - Infection Prevention & Control CNM2 (0866093382)

If IPC CNM2 is unavailable, the ward nurse manager for the appropriate clinical area should be contacted with the result.

- Out-of-hours, including weekends:
  - Ward nurse manager for the appropriate clinical area

Positive MRSA and VRE results

- Monday – Friday, 0900-1700h:
  - For all patient areas, SVUH will phone the Infection Prevention & Control CNM2 at 0866093382

If the Infection Prevention & Control CNM2 is unavailable, the ward nurse manager for the appropriate clinical area should be contacted with the result.

- Out-of-hours, including weekends:
  - For all patient areas, SVUH will phone the ward nurse manager for the appropriate clinical area

12 WARD ENQUIRY WORKING INSTRUCTIONS

1. A system access request form (available on the intranet/ from ICT) is required to be completed for all staff needing access to ward enquiry, and should be sent to the laboratory upon request by laboratory personnel.
2. The laboratory issues users with a username and password to access the system.

3. The ward enquiry icon can be made available to relevant staff by the ICT department. A service request must be made to the ICT department.
4. Log in with username and password – **Note**: x3 incorrect login attempts will deactivate the account. Contact the laboratory to reactivate.
5. Laboratory Result Look Up screen will appear (see Fig 1.)

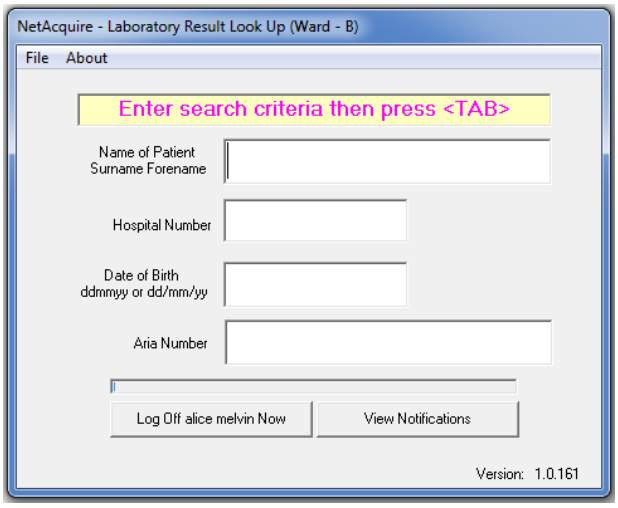


Fig. 1. Laboratory Result Look Up screen

6. Enter a patient's hospital number (with no space), or DOB and press the TAB button.
7. The Search screen will appear (see Fig. 2)

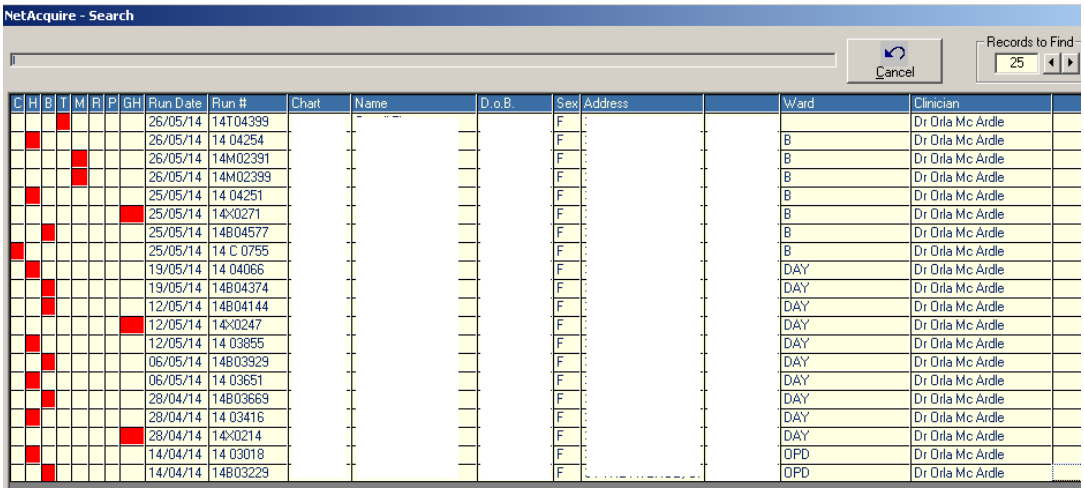


Fig. 2 Search screen.

The Search screen has 8 test columns under the headings:

Column	Department	Notes
C	Coagulation	Coag screen

H	Haematology	FBC / ESR
B	Biochemistry	Routine clinical chemistry testing incl Lactate & Glucose
T	Tumour Markers, Hs Troponin, TFTs, BHCG	Immunoassays
M	Microbiology	NOT IN USE
R	Referral work	Sent out to a referral hospital
P	Point of Care	NOT IN USE
GH	Group & Hold	Transfusion – only the date a sample was taken is indicated, results are not displayed

8. The Search screen lists the run date of the patient's test in chronological order, beginning with the most recent results at the top of the screen. The patient's demographic details are also stated.
9. To review a result, click on the appropriate red box under the relevant department. Once the red box is clicked the result will display. If the test has not been processed yet, no results will appear. Results may be printed from this page.
10. Results for Haematology/Coagulation/Biochemistry that are outside the reference range will appear in colour. Blue indicates result is below the reference range while red (yellow in the case of haematology) indicates result is above the reference range.
11. Hardcopy referral test results are scanned into Netacquire and are available to view. In order to view these results click "View Scan" in the patient's result record. Results can now be printed from this screen. Note you may need to click on the sample number in the right hand column in order to view the results, where more than one report has been received for that sample number.
12. Occasionally, a preliminary result may be released onto ward enquiry – preliminary results may include an FBC that is awaiting a blood film review. 'Preliminary Result' will be stated on the ward enquiry report until the report is authorised by the lab.
13. Cumulative Biochemistry and Haematology/Coagulation results (ie previous results) may be reviewed by clicking on the cumulative icon. (see Fig 3 & 4.)

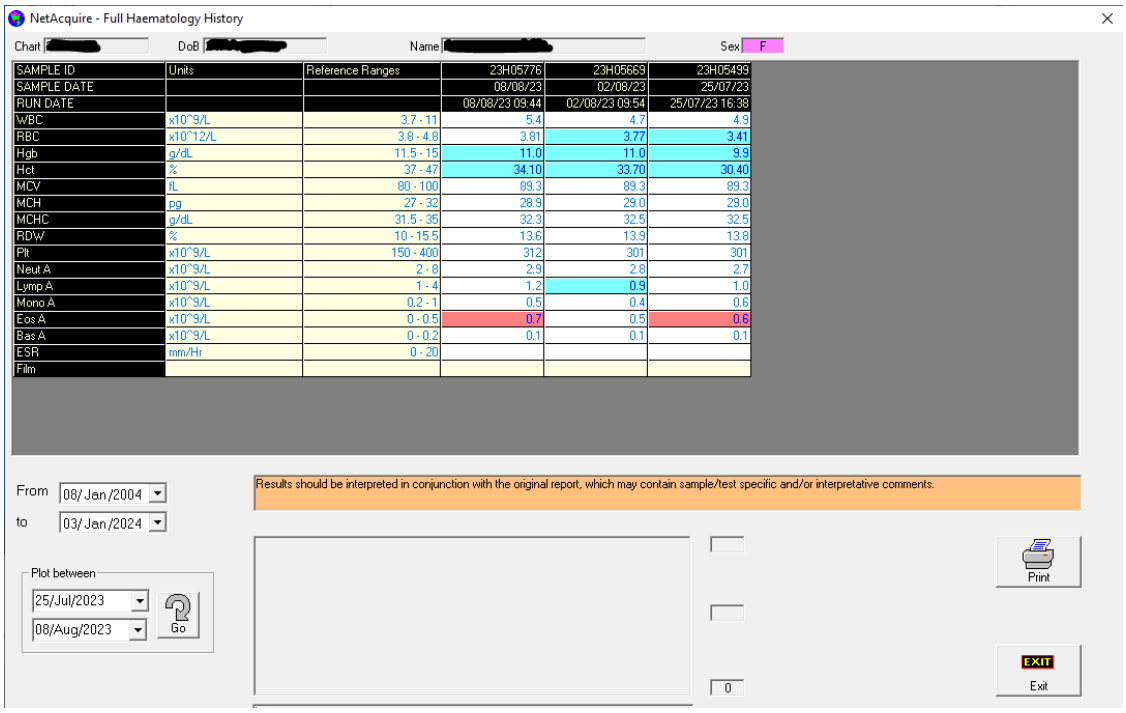


Fig. 3 Cumulative Haematology Screen

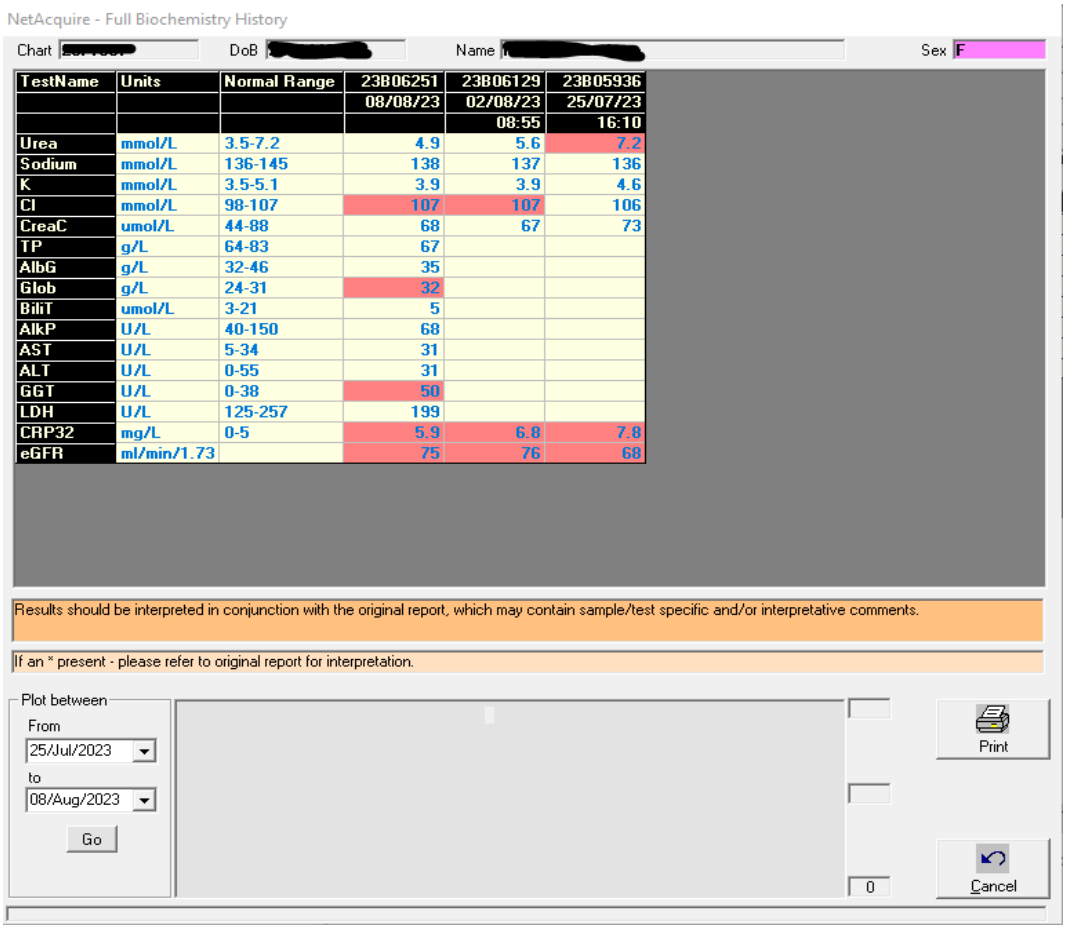


Fig. 4 Cumulative Biochemistry Screen

Note:

- Patient results prior to 2008 are not available on Ward Enquiry. For results prior to this contact the laboratory.
- If a tutorial on Ward Enquiry is required, the laboratory is happy to oblige. Please contact Haematology on 5199.

12.1 Cautionary notes when reviewing Cumulative Reports on Ward Enquiry

- Cumulative reports should be interpreted in conjunction with the original report, which may contain sample/test specific and/or interpretative comments.
- Reference ranges are age specific. The ones displayed alongside cumulative results are associated with the most recent result and may not be relevant to all results over a prolonged period of time.
- Units displayed are those associated with the reporting protocols of the most recent result displayed.

The laboratory strongly recommends that each result is viewed in line with its original full report to ensure pertinent information is not missed. The original report represents the most accurate review of patient results.

13 PROCEDURE FOR REQUESTING ADDITIONAL AND REPEAT EXAMINATIONS

13.1 Requesting Procedure for Additional Examinations

Users of Laboratory services may request additional or repeat examinations on specimens already sent to the Laboratory provided that the Laboratory has sufficient specimen remaining to perform the additional/repeat tests and that the specimen is still of optimal quality to allow the reporting of accurate and meaningful results.

Additional/repeat requests for examinations may be made verbally over the telephone (with the exception of Blood transfusion – see specific instructions Section 14). The medical scientist receiving the phone call will, if necessary, discuss the request with senior personnel before accepting the request. This is to ascertain the benefits of re-testing a sample, which may or may not be suitable for re-testing at the time of request. The medical scientist will record the verbal request on the laboratory computer system along with the requester's name and the date and time. Ideally, a request form should accompany such a request but the lack of a request form will not

impede the processing of an urgent sample. The verbal request is also recorded onto the original request form.

13.2 Time Limits for Requesting Additional and Repeat Examinations on Samples

Additional/repeat testing may be facilitated in certain instances only. Many variables impact the ability to provide such testing such as sample volume, analyte stability and sample storage conditions. Refer to table below for department specific information.

	TIME LIMIT*	REQUIRED ACTION
BIOCHEMICAL ANALYSES	Variable - Test dependent	Contact the Biochemistry Dept. on 5133
TUMOUR MARKERS	Greater scope for add on as samples are stored frozen	Contact the Biochemistry Dept. on 5133
HAEMATOLOGY(FBC)	Test dependent; Blood film (4hrs*) HbA1c Reticulocytes	Contact the Haematology Dept. on 5199
COAGULATION	4 hours*	Contact the Haematology Dept. on 5199
ESR	No additional tests may be requested	N/A
BLOOD TRANSFUSION	72hrs* All transfusions must be completed before the 72hrs expires.	Contact the Blood Transfusion Dept. on 5156
MICROBIOLOGY	Variable – test and sample volume dependent	Contact the Microbiology Dept. (SVUH) on (01) 221 4589

*Time limits relate to the time the sample was taken.

13.3 Requesting a New Sample for Repeat Examinations.

On occasions the Laboratory may request a repeat sample for examination for the following reasons:

- Technical problems that may arise during the initial testing process.
- Unsuitability of the specimen ie sample requirements for testing have not been met eg. incorrect sample type
- Concern of Laboratory staff at authorisation stage over the validity of the results relative to recent previous results on specimens from the same patient.
- Contamination of sample
- To confirm abnormal findings
- Laboratory Error

Refer to Section 10 for additional information.

14 BLOOD TRANSFUSION SERVICE – SPECIFIC USER INFORMATION

14.1 Written Consent of Patient

Note: For each patient due to receive blood or blood products, written consent must be obtained prior to the transfusion, in line with the Hospital Consent Procedure SLRON P 03.

This consent is valid for 6 months only.

14.2 Transfusion of Blood Products

The Blood Transfusion Department at St. Luke's Hospital is only in a position to issue Red Cells and Platelets. Anti-D Immunoglobulin may also be issued if required.

Note: Transfusion of Blood Products should not be considered at the weekend unless there is a clinical reason which requires immediate transfusion to take place (BTC memo June 2023).

14.2.1 Transfusion of Red Cells

- A 7.5/4.9ml-EDTA sample is required for Blood Transfusion testing.
- Issued as ABO/Rhesus compatible and cross-matched
- Group and Hold sample identifies patient's ABO and RhD blood group and antibody status.
- Crossmatch determines compatibility between patient's blood and a donor unit for transfusion
- Cross-matched blood is valid for a time up to a maximum of 72hours after the crossmatch sample taken time.
- Crossmatched blood is available for collection from the Blood Issue Fridge in the Blood Bank Room (beside Theatre).
- However, in practice blood may be returned to the lab if unused after, a minimum of 24 hours post issue or, the intended time of use, following consultation with the patient's team.
- Start the transfusion immediately once blood is collected from the Issue Fridge.
- If delay is anticipated, blood must be returned to the blood refrigerator within 30 minutes
- Transfusion must be completed within >2hours and <4 hrs.
- The transfusion must be complete within 4 hours of leaving controlled storage ie the Issue Fridge.
- NEVER store Blood or Blood Product Units in ward fridges.

14.2.2 Indications for Red Cell Transfusion in Adults

1. Avoid blood transfusion if the patient is asymptomatic and the haemoglobin(Hb) is expected to recover spontaneously within a short period
2. Use alternatives to blood transfusion whenever available, in particular, patients with iron, vitamin B12 or folic acid deficiency.
3. Follow the one unit of blood at a time and re-assess practice, by repeating the FBC after each unit.[1] Hb increments vary according to the blood unit and patient factors.
4. Consider EPO injections for patients with anaemia of chronic disease, in particular patients with severe chronic kidney disease (CKD).
5. NICE Guideline NG24[1] recommend using restrictive red blood cell transfusion thresholds for patients who need red blood cell transfusions and who do not:
    - have major haemorrhage or
    - have acute coronary syndrome or
    - need regular blood transfusions for chronic anaemia.

For restrictive red cell blood transfusion consider the following:

Threshold Hb (g/dL)[1]	**Target Hb** *(Post Transfusion)* (g/dL)[1]
7	7-9
8 *Acute coronary syndrome*	8-10

Table 1: Clinical indications for restrictive red cells transfusions.

Note: There may be patients who fall outside the indications for restrictive red cells transfusions. Advice shall be obtained from the Consultant Haematologist in these cases.

[1] NICE Guideline: Blood Transfusion, Published: Nov 2015 Last updated: Feb 2026

14.2.2.1 Emergency Uncrossmatched O Red Cells.

POLICY STATEMENT REGARDING THE STOCKING OF EMERGENCY O NEGATIVE BLOOD AT SLH RATHGAR AND IMPORTANT NOTES:

- *It is important to note that the **BLOOD BANK ISSUE FRIDGE** holds a stock of **TWO EMERGENCY O NEGATIVE Red Cell Units.***

These are available for use only in critically urgent bleeding adult (>16yrs old) patients. However, critically urgent bleeding patients must still be referred to a larger tertiary referral hospital asap under the guidance of his/ her clinician.

Please refer to BTC-SLH-CI-BBH-020 Life Threatening Haemorrhage Protocol.

- The Blood Bank Issue Fridge is located in the Blood Bank Room beside Theatre.
- The laboratory cannot be relied upon in a massive bleeding situation.
- Where cross-matched blood is required asap, this may take up to 3 hours.
- The admission to SLH of any patient that has severe/active bleeding or who is at risk of bleeding is discouraged.
- The hospital laboratory does not hold a stock of platelets, plasma or other blood products to treat a critically bleeding patient.

SLRON Blood Transfusion Committee, Dec 2023.

14.2.3 Transfusion of Platelets

Usually issued ABO/Rhesus compatible.

- Sample type: 7.5/4.9ml EDTA Blood Transfusion bottle. *A sample is required if:*
  - *the patient's group is unknown*
  - *the previous sample is more than a week old*
  - *only one previous group sample has been received*
- ***Check ward enquiry to see if there has been a previous sample on the patient before sampling.***
- Platelets are stored at **room temperature**
- Start immediately once delivered to ward
- Transfusion must be completed within 30 – 60 minutes.

There is no on-site facility to keep platelets on standby – they must be ordered as necessary for immediate transfusion.

NB Platelets must never be placed in a fridge.

14.2.3.1 Indications for Platelet Transfusion in Adults

- **The standard dose of platelets is one unit**. Requests for amounts greater than this will be discussed with the Consultant Haematologist.
- If the reason for thrombocytopenia is unclear, further investigation is required.
- All indications require a platelet count on the day. **Individual patient review is required.**
- An increment in platelet count of **<5x10^9/L**, post transfusion of one unit of platelets, requires investigation before more platelets are transfused.
- Advice shall be obtained from the Consultant Haematologist for all requests that fall outside of this guideline.

Transfusion Trigger Platelet Counts (x10^9/L)	**Indications for Transfusion**	
≤10	• **Critical illness in the absence of bleeding or planned procedure** • Reversible bone marrow failure (BMF) with stem cell transplant • Chronic BMF receiving intensive therapy or to prevent persistent bleeding	
10 – 20 Consider increasing the threshold to between **10 and 20 x 10^9/L** for patients judged to have additional risk factors for bleeding.	Some additional risk factors are listed here **(not an exhaustive list);**	
	• Fever >38.5°C • Sepsis • Liver disease with impaired coagulation • Rapid fall in platelet count (>20x10^9/L / 72 hours)	• DIC • Necrotic Tumour • Acute Promyelocytic Leukaemia • Major headache or other significant CNS symptoms • Anti-thymocyte globulin therapy
≤20	• Central Venous Catheter (CVC) (excluding PICC line)	
≤30	• Bleeding but not severe or life-threatening	
≤40	• Lumbar Puncture	
≤50	• Severe Bleeding • Major Surgery • Percutaneous Liver Biopsy • Anticoagulant Therapy	
≤80	• Epidural catheter, insertion and removal	
≤100	• Multiple Trauma, brain or eye injury / planned surgery (posterior segment of the eye), spontaneous intracerebral haemorrhage.	

Platelet Transfusions; Not Indicated
• Immune Thrombocytopenia (**ITP**) • Removal of tunnelled CVC (Hickman line) • Cataract • PICC Line Insertion

Contraindications to Platelet Transfusions
• Thrombotic Thrombocytopenic Purpura (**TTP**) • Heparin-Induced Thrombocytopenia (**HIT**) • Thrombotic microangiopathies; Unless the patient has serious haemorrhage it is unnecessary and ineffective: *danger of precipitating fatal thrombosis*

These guidelines have been adapted from the HSE's 'Platelet Transfusion – Practice Points', January 2012 and the 'Guidelines for the Use of Platelet Transfusion' – A British Society for Haematology Guideline, August 2016.

14.2.4 Special Requirements including Cytomegalovirus (CMV) negative and Irradiated Products

Consideration **MUST** be given to the patient's clinical condition and whether special requirements are indicated for the products to be transfused to that patient – eg. CMV negative or irradiated blood products. Please check previous diagnoses and treatments given, which may dictate requirements. If CMV negative or irradiated products are required, this must be clearly stated on the blood transfusion request form, in addition to the Blood/Blood Product Prescription and Administration Record. Product requests will not be processed without this information.
Refer to page 2 of the 'CF-BBH-002 Blood/Blood Product Prescription and Administration Record' for a list of the indications.

14.2.5 Other Blood Products

Please contact the Blood Transfusion Laboratory if other blood products (eg Anti-D Immunoglobulin) are required.

14.3 Sample Requirement

A 7.5/4.9ml EDTA sample is required for all Blood Transfusion investigations. A request form must accompany each sample. Blood/Blood product requests on valid G&H samples can only be processed by the laboratory upon receipt of a completed request form, where both the 'patient details' and 'transfusion request' sections (Ref Section 7.2 above) have been completed in full by the relevant clinician.
Use of the PDA for blood transfusion sample taking is **mandatory**.

14.4 Group and Hold

The EDTA whole blood specimen received is grouped and screened for red cell antibodies. The sample is held for 72 hours from the sample collection time for crossmatching, if required.

Routine group and hold specimens received after 3pm Monday to Friday, may be processed on the next day of routine Monday to Friday laboratory service, depending on daily workload.
Urgent group and hold specimens are processed as indicated on the request form.
Routine specimens received during routine Saturday morning hours or on a Sunday will be processed on the next routine working day unless indicated following discussion with the patient's clinician.
All urgent blood transfusion requests must be phoned to the laboratory at ext.5156.

14.5 Group and Crossmatch

The specimen is grouped and cross-matched for the time documented on the request form during routine laboratory hours. Cross-matched blood is reserved for the patient for up to 72 hours after the sample was taken.

- Blood products must be requested early in the day, preferably in the morning.
- Processing of requests only commences upon receipt of the completed blood transfusion request form.

Routine(non-urgent) crossmatch specimens received after 3pm Monday to Friday, will not be issued that day, but instead on the next day of routine Monday to Friday laboratory service. Ref: MEMO-BBT-001-2026
Urgent crossmatch requests are processed as indicated on the request form.
Specimens received during routine Saturday morning hours or out of hours: **Note: Transfusion of Blood Products should not be considered at the weekend unless there is a clinical reason which requires immediate transfusion to take place (Ref: BTC memo June 2023).**
All urgent blood transfusion requests must be phoned to the laboratory at the above number.

14.5.1 Request for a confirmatory group sample

It is recommended best practice to perform a second confirmatory ABO (Rh) group on first time patients who are due to receive a transfusion (BCSH guidelines 2012). This is to avoid the potential for an ABO incompatible transfusion caused by a Wrong Blood In Tube error (WBIT) i.e. Blood sample and request form labelled with a different patients details. Ref: Section 10.4.

It is SLH blood transfusion laboratory policy that a patient must have two blood groups on file prior to product issue. Laboratory personnel will request a second EDTA sample for patients that do not have previous blood group history with the Blood Transfusion Laboratory and who require transfusion of red cells or platelets. This sample must be taken at least 30 minutes after the initial

sample. The requirement for this second sample will not impede the issue of urgent blood/blood products however. Emergency O Negative blood is available for use for critically urgent bleeding patients.

For patients scheduled for elective procedures, where blood component support may be required, blood grouping should be confirmed with a second sample in advance of the procedure day, therefore allowing sufficient time for completion of the second sample requirement where applicable.

For information on other services such as investigation of a suspected transfusion reaction, Direct Antiglobulin test; Autoimmune Haemolytic Anaemia etc contact the Blood Transfusion Department.

14.6 Procedure for Sending Samples to the IBTS

Occasionally the laboratory may need to refer samples to the IBTS for further investigation. In such instances, the laboratory may require additional PDA labelled 7.5ml samples of EDTA blood to be taken on a patient to allow for the appropriate IBTS testing. The laboratory will contact relevant clinical personnel if this is the case.

15 USER SATISFACTION FEEDBACK AND COMPLAINTS

Receipt of feedback from service users eg. hospital clinical staff or patients, presents a potential opportunity for improvement and the laboratory welcomes any service related feedback. The person offering feedback will be communicated with on any actions taken arising from their feedback.

15.1 USER/CLINICAL FEEDBACK

The laboratory periodically holds 1:1 user feedback sessions and circulates questionnaires to a representative group of its users in an effort to continuously improve its services. However, the laboratory always welcome comments and suggestions in between these surveys and we will always be happy to discuss any suggested improvements with service users.

If you, the user of our services, have any comments relating to the contents of this manual or any complaints you wish to make, please contact the Chief Medical Scientist directly, by the following means:

Phone: 4065198 (Ext. 5198 when dialling internally)

Email leon.flanagan@slh.ie

Your comments will be treated in the strictest of confidence. In the case of a complaint, each individual will be responded to directly by the Chief Medical Scientist, who will outline the next steps at that point. Progress reports and outcome will be provided, as applicable, in due course. Impartiality will be maintained throughout the course of complaint investigation and resolution processes.

15.2 PATIENT FEEDBACK

The laboratory welcomes feedback from patients about their laboratory service experience. Patients may contact the laboratory through the following email address if they wish to provide any direct feedback about the service laboratoryfeedback@slh.ie. All feedback will be treated in the same manner as per Section 15.1.

16 MANAGEMENT OF INFORMATION

The laboratory is responsible, through legally enforceable agreements ie the General Data Protection Regulation (GDPR) and the Data Protection Act 2018, for the management of all patient information obtained or created during the performance of laboratory activities.
The management of patient information within the laboratory is done so with safeguards in place to ensure the privacy and confidentiality of all data generated. These include physical, technical, administrative and monitoring systems. Such systems are incorporated into staff training procedures.
There may be instances where the laboratory is required by law to communicate some patient data including patient demographics, test results and/or outcome of interventions, including any incidents arising from transfusion of blood products, to other healthcare partners of the HSE, regulatory and safety monitoring bodies or third-party agencies. Only the minimum required data is shared on such occasions. Where this is required, the patient or the patient's medical team will be notified of the data which is required to be transferred to the relevant third party, in advance of this action.
Patient demographic data may be exchanged with other public or private healthcare institutions. This relates largely to when patient samples are referred to other laboratories when:

1. Specialised further testing of a sample, which cannot be provided on-site, is required to complete the test.
2. Testing of a sample, for a test, which is not available at the SLRON at SLH laboratory.

It may also concern the retrieval of, only pertinent, patient data, from previous healthcare institutions, a patient may have been in attendance at, to facilitate accurate interpretation of patient test result findings or to guide best practice interventions.
Only the minimum required data for these purposes is shared.
Occasionally, in the interest of ensuring a quality and timely level of patient care, there may be a follow-up exchange of minimal patient data with other public or private healthcare institutions. The laboratory forwards patient results to other healthcare facilities, as requested by a patient's medical team, and is performed in line with data safeguarding measures. This arises especially when there is shared care of a patient between healthcare facilities.

Patient demographic data concerns the following:

- Patient full name,
- Date of Birth (DOB),
- Medical record number (MRN),
- Address,
- Sex,
- Ward from which the test was requested and,
- the treating Consultant,

along with the relevant test(s) /test results and report information, as required.

The laboratory will inform the user and/or the patient in advance of the information it intends to place in the public domain. Except for information that the user and/or the patient makes publicly available, or when agreed between the laboratory and the patient (e.g. for the purpose of responding to complaints), all other information is considered proprietary information and is regarded as confidential.

It is the policy of the laboratory not to issue test results directly to patients themselves. Patients may raise a query to access blood test results if they wish to do so, by contacting either the medical secretary of their medical team, or by emailing rfi@slh.ie. Results are available in line with the turnaround times (TATs) outlined in Section 17.1 below. The TATs for referred samples may vary.

17 REPERTOIRE OF TESTS PERFORMED ON-SITE AND OTHER GENERAL INFORMATION

Important Explanatory Notes: PLEASE READ FIRST

The following table is organised alphabetically for user convenience. The reference ranges listed below apply to adults both males and females unless otherwise stated. A test frequency, which is stated as "daily" means that the test can be available on each **working day** (i.e. Monday to Friday). A Turnaround Time (TAT) described as "same day" means that the result should be available on the day that the sample was received, however for samples whose results are not specifically required by users on the same day, these may be available on a later routine day depending on the workflow of the laboratory.

While the laboratory will always do its best to achieve stated turnaround times, situations such as equipment malfunction or staff shortages may occasionally result in unavoidable delay. The laboratory will alert its on-site users to any such incidences or unexpected delays. Please don't hesitate to contact the laboratory if you are looking for early results.

For TATs on Referred Tests, please consult the relevant laboratory's user manual, which will contain the most up to date information. Refer to Section 6.4.2 for links. If you are unsure to which laboratory a test is referred, please contact the laboratory on 5191.

Please take the time to read any special instructions included alongside the test you are looking for. It may save time and inconvenience for both staff and patients by preventing a situation where the sample has to be repeated.

17.1 Tests Performed at St. Luke's Hospital

No tests performed at St. Luke's Hospital, Rathgar are accredited to ISO 15189 currently
NB: Regarding stated TATs in the following table, note Section 17.9 also, which highlights that TATs may be impacted in times of short staffing for all samples. Please refer to Sections 17.6 and 17.7 for both Biochemistry and Haematology Adult and Paediatric reference intervals

Test/Test Profile name	Turnaround Time (Routine) *From sample receipt to result authorisation*	Turnaround Time (Urgent) *From sample receipt to result authorisation*	Appropriate Specimen Container and Volume	Special Precautions/ Special Timing of Sample	Factors Affecting Test Results Interpretation	Overnight Specimen Storage
ABO Rh (D) Blood Group	Refer to 'Group & Hold'					
AFP (Alpha Fetoprotein)	Weekly	Contact Lab on 5133	Serum 5.5 ml tube	N/A	N/A	Do not store overnight. Send to Lab asap.
Albumin	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	N/A	N/A	Do not store overnight. Send to Lab asap.
Alkaline Phosphatase	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml	N/A	Moderate haemolysis Marked icterus	Do not store overnight. Send to Lab asap.
ALT (Alanine Transaminase)	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	N/A	Moderate haemolysis	Do not store overnight. Send to Lab asap.
APTT (Activated Partial Thromboplastin Time)	Same day	60 minutes	Sarstedt Coagulation Sodium Citrate 3 ml	None	Haemolysis Lipaemic sample Underfilled Clotted Sample Oritavancin	Analysis required within 4 hours of venepuncture
Amylase	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	N/A		Do not store overnight. Send to Lab asap.

Test/Test Profile name	**Turnaround Time (Routine)** *From sample receipt to result authorisation*	**Turnaround Time (Urgent)** *From sample receipt to result authorisation*	**Appropriate Specimen Container and Volume**	**Special Precautions/ Special Timing of Sample**	**Factors Affecting Test Results Interpretation**	**Overnight Specimen Storage**
Antibody Screen	Refer to 'Group & Hold'					
Antibody Investigation	Same day	Up to3 hours (*or longer depending on antibodies)*	7.5/4.9ml EDTA Whole Blood	Requires either fully labelled and signed specimen (Handwritten) or printed PDA sample label.	From colloid solutions and drip sites	Fridge
AST (Aspartate amino-transferase)	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	N/A	Haemolysis Marked lipaemia	Don't store overnight. Send to Lab asap.
Bilirubin (Total)	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	N/A	N/A	Don't store overnight. Send to Lab asap.
Biopsy	See 'Tissue for Histology'					
Blood Gases	10 minutes	10 minutes	3ml Heparin syringe	Test **by SHO** on GEM asap after taking sample	Eject air bubbles from sample first.	Do not store **Test immediately**
CA (Calcium)	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	N/A	Take with or without tourniquet as clinically recommended	Don't store overnight. Send to Lab asap.

Test/Test Profile name	Turnaround Time (Routine) *From sample receipt to result authorisation*	Turnaround Time (Urgent) *From sample receipt to result authorisation*	Appropriate Specimen Container and Volume	Special Precautions/ Special Timing of Sample	Factors Affecting Test Results Interpretation	Overnight Specimen Storage
Calcium - adjusted	Same Day	60 minutes	Serum/Plasma Lithium Heparin 5.5ml tube	N/A	Adjusted calcium may be unreliable when albumin < 20 g/L, globulins, bilirubin or free fatty acids are very high or pH is abnormal.	Don't store overnight. Send to Lab asap
CA153	Weekly	Contact Lab 5133	Serum 5.5 ml tube	N/A	N/A	Don't store overnight. Send to Lab asap.
CEA	Weekly	Contact Lab 5133	Serum 5.5 ml tube	N/A	N/A	Don't store overnight. Send to Lab asap.
Chloride	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	Do not take blood from limb with IV infusion.		Don't store overnight. Send to Lab asap.
Coagulation Screen (PT, INR and APTT)	Same day	60 minutes	Sarstedt Coagulation Sodium Citrate 3 ml	None	Haemolysis Lipaemic sample Underfilled Clotted Sample	Analysis required within 4 hours of venepuncture
Crossmatch	Same day, unless; blood not required that day or if requested after 3pm).	Up to3 hours excluding pts with RBC antibodies.	7.5/4.9ml EDTA Whole Blood	Requires a PDA sample label. Indication of any special requirements on request form	Unexpected antibody or incompatibility	Fridge
Creatinine Enzymatic	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	N/A	Marked icterus Marked lipaemia	Don't store overnight. Send to Lab asap.
CRP (C-Reactive Protein)	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5ml	N/A	N/A	Don't store overnight. Send to Lab asap.

Test/Test Profile name	Turnaround Time (Routine) *From sample receipt to result authorisation*	Turnaround Time (Urgent) *From sample receipt to result authorisation*	Appropriate Specimen Container and Volume	Special Precautions/ Special Timing of Sample	Factors Affecting Test Results Interpretation	Overnight Specimen Storage
DAT (Direct Antiglobulin Test)	Same day	30 minutes	7.5/4.9ml EDTA	Fully labelled specimens	Should be fresh sample	Not recommended. Do not refrigerate
D-Dimer	Same day	60 minutes	Sarstedt coagulation sodium citrate (3ml) tube	None	Haemolysis Bilirubinaemia Lipaemia. Sample underfilled Sample clotted	Analysis required within 4 hours of venepuncture.
e-GFR (Estimated Glomerular Filtration Rate)	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	None	None	Don't store overnight. Send to Lab asap.
ESR (Eyrthrocyte Sedimentation rate)	Same day	N/A	Sarstedt Sedivette sodium citrate 3.5 ml tube	N/A	Haemolysis Anaemia Sample clotted Sample underfilled	Fridge
Fibrinogen	Same day	60 minutes	Sarstedt coagulation sodium citrate 3ml tube	None	Haemolysis Bilirubinaemia Lipaemia. Sample underfilled/clotted	Analysis required within 4 hours of sampling
FNA (Fine Needle Aspirate)	FNA for Histology are not processed at St. Luke's. These are referred to SVUH via the laboratory at SLH.					Don't store overnight. Send to Lab asap.

Test/Test Profile name	Turnaround Time (Routine) *From sample receipt to result authorisation*	Turnaround Time (Urgent) *From sample receipt to result authorisation*	Appropriate Specimen Container and Volume	Special Precautions/ Special Timing of Sample	Factors Affecting Test Results Interpretation	Overnight Specimen Storage
Full Blood Count	Same day	60 minutes	Sarstedt EDTA 2.7 ml	Must be tested on the day it's taken.	Clotting of Blood, Platelet clumping, Haemoconcentration	Fridge
Gentamicin	Same day	N/A	Serum/Plasma Lithium Heparin 5.5ml State time taken.	Take 16-24hrs post-dose.	Sample taken at wrong time:	Fridge
GGT (Gamma Glutamyltrans-peptidase)	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	N/A	Moderate Haemolysis	Don't store overnight. Send to Lab asap.
Globulin	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5ml	N/A	Moderate Haemolysis Marked icterus	Don't store overnight. Send to Lab asap.
Glucose (plasma)	Same day	60 minutes	Sodium Fluoride (2.7 ml tube)	Fasting: Fast for ~12 hrs. Post-Prandial: ~ Sample 2 hrs after glucose load	N/A	Don't store overnight. Send to Lab asap.
Group and Hold	Same day, depending on work load. (Sun/Bank Holiday: next working day) Sat: same day if required by the clinician)	Up to3 hours excluding pts with RBC antibodies.	7.5/4.9ml EDTA Whole Blood	Requires a PDA sample label.	Haemolysis Contaminated specimens Samples from colloid solutions and drip sites	Send to lab ASAP Fridge
β-HCG (β-HCG tumour marker)	Weekly	Contact Lab 5133	Serum/Plasma Lithium Heparin 5.5 ml tube	N/A	Marked haemolysis	Don't store overnight. Send to Lab asap.

Test/Test Profile name	Turnaround Time (Routine) *From sample receipt to result authorisation*	Turnaround Time (Urgent) *From sample receipt to result authorisation*	Appropriate Specimen Container and Volume	Special Precautions/ Special Timing of Sample	Factors Affecting Test Results Interpretation	Overnight Specimen Storage
β-HCG (Serum Pregnancy test)	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	N/A	Marked haemolysis	Don't store overnight. Send to Lab asap.
INR	**See PT (Prothrombin Time)**					
Lactate	Same day	60 minutes	Sodium Fluoride (2.7ml)	N/A	Marked haemolysis	Don't store overnight. Send to Lab asap.
LDH (Lactate Dehydrogenase)	Same day	60 minutes	Serum 5.5 ml tube	N/A	Haemolysis	Don't store overnight. Send to Lab asap.
Magnesium	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	N/A	N/A	Don't store overnight. Send to Lab asap.
Phosphate	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	N/A	Moderate haemolysis	Don't store overnight. Send to Lab asap.
Platelet Blood Product request	Same day	3 hours	EDTA tube 7.5ml	Refer to Section 14.2.3 for when a sample is required to be sent to the lab.	N/A	Do not store on the ward – contact the laboratory if unable to use immediately
Potassium	Same day	60 minutes	Serum / Plasma Lithium Heparin 5.5 ml tube	(1) Do not take blood from limb with IV infusion. Assay immediately. (2) High platelet count may give falsely raised K – use Lithium Heparin (3) Do not freeze or refrigerate whole blood	Haemolysis will falsely elevate the result	Don't store overnight. Send to Lab asap.

Test/Test Profile name	Turnaround Time (Routine) *From sample receipt to result authorisation*	Turnaround Time (Urgent) *From sample receipt to result authorisation*	Appropriate Specimen Container and Volume	Special Precautions/ Special Timing of Sample	Factors Affecting Test Results Interpretation	Overnight Specimen Storage
Protein (total)	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	N/A	Haemolysis Marked icterus	Don't store overnight. Send to Lab asap.
PT (Prothrombin time)	Same day	60 minutes	Sarstedt Coagulation Sodium Citrate 3ml tube	N/A	Haemolysis Inhibitors (Lupus Anticoagulant) Underfilled/clotted sample	Analysis required within 4 hrs of sampling
PSA (total) (Prostate Specific Antigen)	Weekly	Contact Lab on 5133	Serum 5.5 ml tube	Sample Biopsy Prostatectomy Prostatic Massage	PSA alone not suitable as screen for prostate cancer as high levels also in Benign Prostatic Hyperplasia	Fridge
Red Cells	See 'Cossmatch'					
Sodium	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5ml tube	Do not take blood from limb with IV infusion	Marked lipaemia and high protein levels > 95 g/L	Don't store overnight. Send to lab asap
TSH (Thyroid Stimulating Hormone)	Weekly	Contact Lab on 5133	Serum 5.5 ml tube	N/A	Marked haemolysis and Lipaemia	Don't store overnight. Send to Lab asap.
Thyroglobulin (Tg) /Thyroglobulin antibody (Tg Ab)	Weekly	N/A	Serum 5.5ml	N/A	N/A	Fridge
FT4 (free T4)	Weekly	Contact Lab on 5133	Serum 5.5ml	N/A	Marked haemolysis and Lipaemia	Don't store overnight. Send to Lab asap.
Tissue for Histology	Tissues (Biopsies) for Histology are not processed at St. Luke's. These are referred to SVUH via the laboratory at SLH.					

Test/Test Profile name	Turnaround Time (Routine) *From sample receipt to result authorisation*	Turnaround Time (Urgent) *From sample receipt to result authorisation*	Appropriate Specimen Container and Volume	Special Precautions/ Special Timing of Sample	Factors Affecting Test Results Interpretation	Overnight Specimen Storage
Transfusion Reactions Investigation	Same day	2 hours (Depends on complexity of investigation).	7.5ml EDTA Whole Blood/ Coag and Bio sample/ MSU/ Blood Unit	As soon as possible following the event. Full account of incident + 7.5ml EDTA Sample/ MSU/Blood Culture	Wrong specimens collected.	Send to Lab ASAP for investigations.
hsTroponin-I	60 minutes	60 minutes	Lithium Heparin 4.9ml tube	Specimen taken at presentation and 3hrs later	Marked haemolysis	Don't store overnight. Send to Lab ASAP.
Urate	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	Plasma concentration on severe exercise	N/A	Send to Lab ASAP. Don't store overnight.
Urea (Serum)	Same day	60 minutes	Serum/Plasma Lithium Heparin 5.5 ml tube	N/A	N/A	Send to Lab ASAP. Don't store overnight.
Vancomycin Level	Same day	N/A	Serum/Plasma Lithium Heparin 5.5ml State time taken	Take < 1 hour pre-dose.	Sample taken at wrong time.	Fridge

17.2 Reporting of Results affected by Haemolysis

Haemolysis Severity	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Tests Deleted	AST LDH	AST LDH	AST LDH Total protein Globulin K+ Phosphate	AST ALP ALT GGT LDH Total protein Globulin K+ Phosphate	ALB AST ALP ALT GGT LDH Total protein Globulin K+ Phosphate hsTroponin-I▲ Total ß hCG ▲
Comments Added	Sample slightly haemolysed* Sample unsuitable for full analysis*	Sample slightly haemolysed, Sample unsuitable for full analysis* May over-estimate K+.	Sample haemolysed, unsuitable for full analysis.	Sample haemolysed, unsuitable for full analysis.	Sample haemolysed. Please repeat for tests affected. ▲Sample haemolysed, unsuitable for analysis. Please repeat for affected tests
Additional Info.	*N/A for samples where AST and LDH are not requested	For Haemolysis greater than Grade 5, no results are reported. The following comment is issued: 'Sample grossly haemolysed unsuitable for analysis. Please repeat.'			

17.3 Reporting of Results affected by Lipaemia and High Bilirubin (Icterus)

ICTERUS

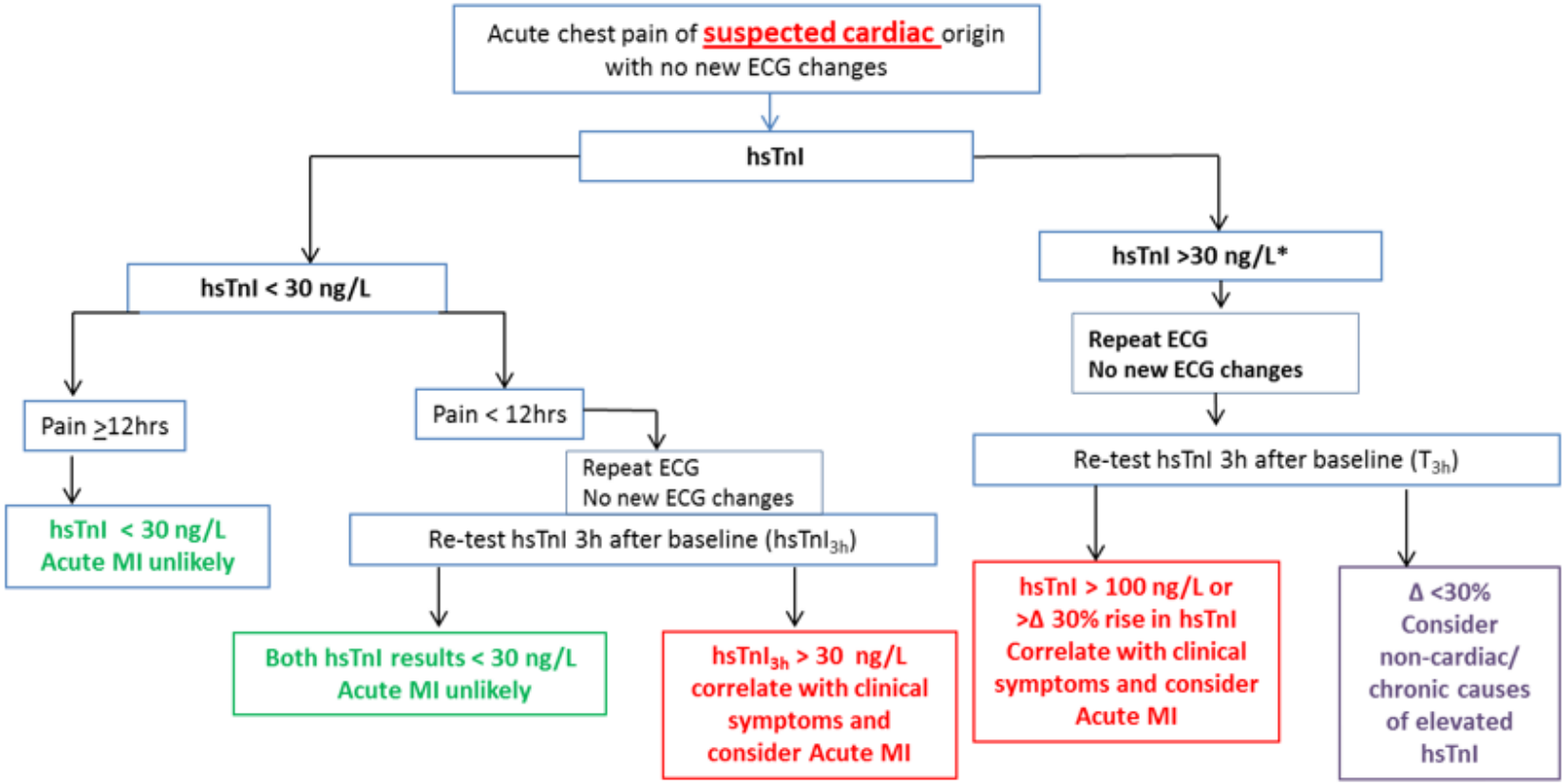
I Index	Assays Affected	Report Comment
≥445	ALP2 Cr Enz	*'* Icteric sample unsuitable for full analysis'*
>513	ALP2 Cr Enz TP2	
≥1026	ALL	

LIPAEMIA

L index	Assays Affected	Report Comment
≥2.26	Sodium **can be reported** with comment	*"Lipaemic sample interpret Sodium result with caution."*
≥6	CrEnz Sodium	*'* Lipaemic sample unsuitable for full analysis'*
≥8.5	AST2 CrEnz Sodium	
≥17	ALL	

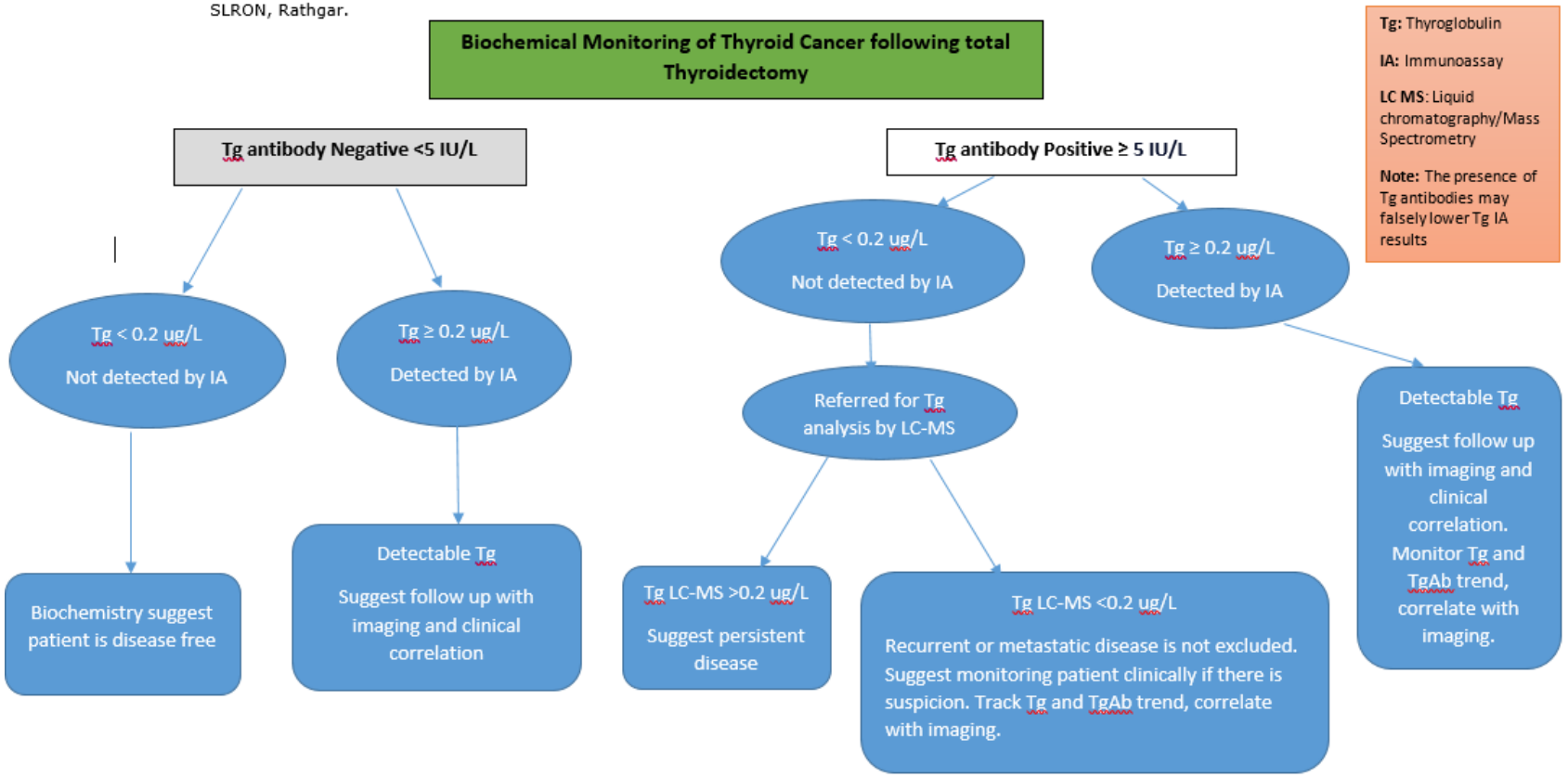
17.4 Clinical Guideline and High Sensitive Troponin I (Hs-TnI) Assessment

This guideline is to be used by clinicians in the treatment of acute chest pain of suspected cardiac origin with no new ECG changes. It is applicable only to staff at the St. Luke's Hospital, Rathgar site.



17.5 Biochemical Monitoring in Thyroid Cancer using Thyroglobulin

Purpose: This algorithm serves as an aid to clinicians for ensuring optimal biochemical monitoring of patients with Thyroid Cancer who have undergone total thyroidectomy. It is applicable only to staff at the St. Luke's Hospital, Rathgar site. Thyrogobulin testing is performed by Abbott Immunoassay at SLRON, Rathgar.



17.6 Biochemistry Adult & Paediatric Reference Intervals

Test Name	Age	Reference Range Male/Female	Reference Range Male	Reference Range Female
Urea	0-<15 days	1.0-8.2 mmol/L		
	15 days-<1year	1.2-6.0 mmol/L		
	1 year-<10years	3.2-7.9 mmol/L		
	10-<19 years		2.6-7.5 mmol/L	2.6-6.8 mmol/L
	19 years-< 60 years	2.1-7.1 mmol/L		
	≥60 years	2.9-8.2 mmol/L		
Sodium	0-<19 years	136-145 mmol/L		
	≥19 years	136-145 mmol/L		
Potassium Serum	0-<19 years	3.7-5.3 mmol/L		
	≥19 years	3.5-5.1 mmol/L		
Potassium Plasma			3.5-4.5 mmol/L	3.4-4.4 mmol/L
Chloride	0-<19 years	100-111 mmol/L		
	≥19 years	98-107 mmol/L		
Creatinine Enzymatic	0-<15 days	29-82 µmol/L		
	15days-<2 years	9-32 µmol/L		
	2-<5 years	18-38 µmol/L		
	5-<12 years	27-54 µmol/L		
	12-<15 years	40-72 µmol/L		
	15-<19 years		55-96 µmol/L	43-74 µmol/L
	≥19 years		64-104 µmol/L	49-90 µmol/L
Calcium	0-<1 year	2.13-2.74 mmol/L		
	1-<19 years	2.29-2.63 mmol/L		
	19 < 60 years	2.10-2.55 mmol/L		
	≥60 years		2.20-2.50 mmol/L	2.10-2.55 mmol/L
Adjusted Calcium	0-<1 year	2.13-2.74 mmol/L		
	1-<19 years	2.29-2.63 mmol/L		
	19-< 60 years	2.10-2.55 mmol/L		
	≥60 years		2.20-2.50 mmol/L	2.10-2.55 mmol/L
Phosphate	0-< 15days	1.80-3.40 mmol/L		
	15 days-<1year	1.54-2.72 mmol/L		
	1-<5 years	1.38-2.19 mmol/L		
	5-<13 years	1.33-1.92 mmol/L		
	13-<16 years		1.14-1.99 mmol/L	1.02-1.79 mmol/L
	16-<19 years	0.95-1.62 mmol/L		
	≥19 years	0.81-1.45 mmol/L		
Uric acid	0-<15 days	164-757 µmol/L		
	15days-<1year	94-377 µmol/L		
	1-<12 years	106-289 µmol/L		
	12-<19 years		156-454 µmol/L	153-349 µmol/L
	≥19 years		220-450 µmol/L	150-370 µmol/L

Test Name	Age	Reference Range Male/Female	Reference Range Male	Reference Range Female
Total Protein	0-<15 days	53-83 g/L		
	15days-<1 year	44-71 g/L		
	1-<6 years	61-75 g/L		
	6-<9 years	64-77 g/L		
	9-<19 years	65-81 g/L		
	19 years-< 60 years	64-83 g/L		
	≥60 years	62-81g/L		
Albumin	0-<15days	33-45 g/L		
	15 days-<1year	28-47 g/L		
	1-<8 years	38-47 g/L		
	8-<15years	41-48 g/L		
	15-<19 years		41-51 g/L	40-49 g/L
	19 years-< 60 years	35-52 g/L		
	60-<90years	32-46 g/L		
	≥90 years	29-45g/L		
Globulin	0-<30 days	12-36 g/L		
	≥30 days	25-35 g/L		
Total Bilirubin	0-<15 days	3-284 µmol/L		
	15 days-<1year	1-12 µmol/L		
	1-<9 years	1-7 µmol/L		
	9-<12 years	1-9 µmol/L		
	12-<15 years	2-12 µmol/L		
	15-<19 years	2-14 µmol/L		
	≥19 years	5-21 µmol/L		
Alkaline Phosphate	0-<15 days	90-273 U/L		
	15 days-<1year	134-518 U/L		
	1-<10 years	156-369 U/L		
	10-<13 years	141-460 U/L		
	13-<15 years		127-517 U/L	62-280 U/L
	15-<17 years		89-365 U/L	54-128 U/L
	17-<19 years		59-164 U/L	48-95 U/L
	19-<21 years		56-167 U/L	44-107 U/L
	21-<29 years		50-116 U/L	44-107 U/L
	≥29 years		50-116 U/L	46-122 U/L
AST	0-<15 days	32-162 U/L		
	15days-<1 year	20-67 U/L		
	1-<7 years	21-44 U/L		
	7-<12 years	18-36 U/L		
	12-<19 years		14-35 U/L	13-26 U/L
	≥19 years	11-34 U/L		
ALT	0-<1 year	5-33 U/L		
	1-<13 years	9-25 U/L		
	13-<19 years		9-24 U/L	8-22 U/L
	≥19 years		0-44 U/L	0-33 U/L

Test Name	Age	Reference Range Male/Female	Reference Range Male	Reference Range Female
GGT	0-<15 days	23-219 U/L		
	15 days-<1year	8-127 U/L		
	1-<11 years	6-16 U/L		
	11-<19 years	7-21 U/L		
	≥19 years		0-54 U/L	0-37 U/L
LDH	0-<15 days	309-1222 U/L		
	15 days-<1year	163-452 U/L		
	1-<10 years	192-321 U/L		
	10-<15 years		170-283 U/L	157-272 U/L
	15-<19 years	130-250 U/L		
	≥19 years	125-220 U/L		
Magnesium	0-<15 days	0.82-1.62 mmol/L		
	15 days-<1year	0.81-1.27 mmol/L		
	1-< 19 years	0.86-1.17 mmol/L		
	≥19 years	0.66-1.07 mmol/L		
CRP	0-<15days	0.3-6.1 mg/L		
	15 days-<15 years	0.1-1.0 mg/L		
	15-<19 years	0.1-1.7 mg/L		
	≥19 years	0.0-5.0 mg/L		
Amylase	0-<15 days	3-10 U/L		
	15 days-<13 weeks	2-22 U/L		
	13 weeks-< year	3-50 U/L		
	1-<19 years	25-101 U/L		
	≥19 years	28-100 U/L		
Lactate	0-<19 years	1.1-3.6 mmol/L		
	≥19 years	0.5-2.2 mmol/L		
Glucose	0-<19 years	3.5-5.9 mmol/L		
	≥19 years-< 60 years	3.9-5.8 mmol/L		
	≥60-<70 years	4.4-6.4 mmol/L		
	>70 years	4.6-6.1 mmol/L		
	NOTE: American Diabetic Association recommends use of a fasting glucose of 5.5 mmol/L as the upper limit of normal.			

References:

All paediatric (0 -< 19 years) reference ranges from https://caliper.research.sickkids.ca/#/
Adult reference ranges from Abbott kit inserts.

17.7 Haematology Adult and Paediatric Reference Intervals

Parameter	Units	Adult	
		Male	Female
RBC	$x10^{12}/L$	4.5-5.5	3.8-4.8
HgB	g/dL	13.0-17.0	11.5-15.0
Hct	%	40-50	37-47
MCV	fl	80-100	
MCH	pg	27-32	
MCHC	g/dL	31.5-35.0	
RDW	%	10.0-15.5	
Plt	$x10^9/L$	150-400	
WBC	$x10^9/L$	3.7-11.0	
Neut	$x10^9/L$	2.0-8.0	
Lymph	$x10^9/L$	1.0-4.0	
Mono	$x10^9/L$	0.2-1.0	
Eos	$x10^9/L$	0-0.5	
Baso	$x10^9/L$	0-0.2	

Parameter	Units	Adult Male	Adult Female
ESR	mm/hr	0-14	0-20

Parameter	Units	Range			
		Adult	11-16y	6-10y	1-5y
PT	seconds	9.3-11.4	10.0– 14.1*	10.0-14.0*	10.7 -13.4*
APTT	seconds	21.8-28.0	26-37	26 – 36	24 – 36
Fibrinogen	g/L	2.1-3.58	1.54- 4.48	1.57 – 4.0	1.70 –4.05
Innovance D-Dimer	mg/L FEU	0-0.49			

Adult Reference Ranges are based on the work contained in the following documents:

- Practical Haematology. Lewis, Bains and Bates (10^{th} Ed.): 2006
- Haematology Basic Principles and Practice. Hoffman (4^{th} Ed.):2005
- Blood Cells; A Practical Guide. Bain (4^{th} Ed.):2006

Paediatric Coagulation Reference Ranges: CHI Crumlin 2026

Paediatric Reference Range (1 day old to 11 months old)

Age \ Units	RBC	HgB	Hct	MCV	MCH	MCHC	RDW	Plt	WBC	Neut	Lymph	Mono	Eos	Baso
	x 10^{12}/L	g/dL	%	fl	pg	g/dL	%	x10^9/L	x10^9/L	x10^9/L	x10^9/L	x10^9/L	x10^9/L	x10^9/L
1 day	3.9-5.3	13.5-19.5	42-60	98-118	31-37	30-33	11-16	150-450	10-26	5-13	3.5-8.5	0.5-1.5	0.1-2.5	0-0.1
2 day	4.0-6.6	13.5-19.5	42-60	98-118	31-37	29-34	11-16	150-450	10-26	1.5-70	3.5-8.5	0.3-1.1	0.2-2.0	0-0.1
3 day	4.0-6.6	14.5-22.5	45-67	95-121	31-37	28-35	11-16	150-450	10-26	1.5-7.0	2.0-5.0	0.3-1.1	0.2-2.0	0-0.1
4 day	3.9-6.3	14.5-22.5	45-67	95-121	31-37	28-35	11-16	150-450	10-26	1-8.5	3.0-13.5	0.3-1.5	0.1-0.3	0-0.1
7 day	3.9-6.3	13.5-21.5	42-66	88-126	28-40	28-35	11-16	150-450	10-26	1-8.5	3.0-13.5	0.3-1.5	0.1-0.3	0-0.1
8 day	3.6-6.2	13.5-21.5	42-66	88-126	28-40	28-35	11-16	150-450	6-18	1-8.5	3.0-13.5	0.3-1.5	0.1-0.3	0-0.1
14 day	3.6-6.2	12.5-20.5	39-63	86-124	28-40	28-35	11-16	150-450	6-18	1-8.5	3.0-13.5	0.3-1.5	0.1-0.3	0-0.1
21 day	3.0-5.4	12.5-20.5	39-63	86-124	28-40	29-34	11-16	150-450	6-18	1-8.5	3.0-13.5	0.3-1.5	0.1-0.3	0-0.1
1 mth	3.0-5.4	10.0-18.0	31-55	85-123	28-40	29-34	11-16	150-450	6-18	1-8.5	3.0-13.5	0.3-1.5	0.1-0.3	0-0.1
2 mth	2.7-4.9	9.0-14.0	29-42	77-115	26-34	29-34	11-16	150-450	6-18	1-8.5	3.0-13.5	0.3-1.5	0.1-0.3	0-0.1
3 mth	3.1-4.5	10.5-13.5	29-41	74-118	25-35	30-33	11-16	150-450	6-18	1-8.5	3.0-13.5	0.3-1.5	0.1-0.3	0-0.1
6 -11 mth	3.7-5.3 M 3.9-5.3 F	10.5-13.5	33-39	70-86	23-31	30-33	11-16	150-450	6-18	1-8.5	3.0-13.5	0.3-1.5	0.1-0.3	0-0.1

Paediatric Reference Range (1-17 years)

Units / Age	RBC	HgB	Hct	MCV	MCH	MCHC	RDW	Plt	WBC	Neut	Lymph	Mono	Eos	Baso
	x 10^{12}/L	g/dL	%	fl	pg	g/dL	%	x10^9/L	x10^9/L	x10^9/L	x10^9/L	x10^9/L	x10^9/L	x10^9/L
1 year	3.7-5.3 M 3.9-5.3 F	10.5-13.5	33-39	70-86	23-31	30-33	11-16	150-450	6-18	1-8.5	3.0-13.5	0.3-1.5	0.1-0.3	0-0.1
2 years		10.5-13.5	33-39	70-86	23-31	30-33	11-16	150-450	5-15	1-8.5	3.0-13.5	0.3-1.5	0.1-0.3	0-0.1
3 years	3.9-5.3	10.5-13.5	33-39	70-86	23-31	31.5-37	11-16	150-450	5-15	1.5-8.5	2.0-9.5	0.3-1.5	0.3-0.8	0-0.1
4 years	3.9-5.3	11.5-14.5	35-45	75-87	24-30	31.5-37	11-16	150-450	5-15	1.5-8.5	2.0-9.5	0.3-1.5	0.3-0.8	0-0.1
5 years	3.9-5.3	11.5-14.5	35-45	75-87	24-30	31.5-37	11-16	150-450	5-15	1.5-8.5	2.0-9.5	0.3-1.5	0.3-0.8	0-0.1
6 years	3.9-5.3	11.5-14.5	35-45	75-87	24-30	31.5-37	11-16	150-450	5-15	1.5-8.5	2.0-9.5	0.3-1.5	0.3-0.8	0-0.1
7 years	4.0-5.2	11.5-14.5	35-45	77-96	24-30	31.5-37	11-16	150-450	5-15	1.5-8	1.5-7.0	0.1-0.8	0.1-0.8	0-0.2
8 years	4.0-5.2	11.5-15.5	35-45	77-96	25-33	31.5-37	11-16	150-450	5-15	1.5-8	1.5-7.0	0.1-0.8	0.1-0.8	0-0.2
9 years	4.0-5.2	11.5-15.5	35-45	77-96	25-33	31.5-37	11-16	150-450	4.5-13.5	1.5-8	1.5-7.0	0.1-0.8	0.1-0.8	0-0.2
10 years														
11 years														
12 years														
13 years	4.5-5.3 M 4.1-5.1 F	11.5-15.5	35-45	77-96	25-33	31.5-37	11-16	150-450	4.5-13.5	1.8-8	1.2-5.2	0.1-0.8	0.1-0.8	0-0.2
14 years	4.5-5.3 M 4.1-5.1 F	13-16 M 12-16 F	37-49 M 36-46 F	78-97	25-35	31.5-37	11-16	150-450	4-11	1.8-8	1.2-5.2	0.1-0.8	0.1-0.8	0-0.2
15 years														
16 years														
17 years														

Paediatric Reference Ranges: Source Our Lady's Hospital for Children, Crumlin: 2026

17.8 Critical Alert Values & Communication to Clinicians:

In the event that the laboratory discovers a critical result for a patient, the laboratory will phone the clinician responsible for that patient. Critical results are categorised into 3 categories depending on the severity of potential underlying diagnoses, imminent risk to the patient and the urgency of intervention required. The 3 categories dictate the timeframes within which critical results must be communicated to a clinician and also the timeframe within which the clinician must take action.

- **Category A results** require communication within 2 hours: potential immediate danger to the patient, or a potentially life-threatening illness where urgent intervention is required.
- **Category B results** require communication within 24 hours, and preferably on the same working day: results have urgent implications to the patient.
- **Category C results** require communication within 24 hours, and preferably on the same working day. Results could have an immediate impact on a patient's management (either treatment or investigation), however action is likely to be taken on the next working day.

Important to Note: While the lab makes every reasonable effort to verbally alert the clinician about a critical result, it is the responsibility of the requester of those bloods to review them in a timely manner. All authorised results are available on "Ward Enquiry."

The successful or unsuccessful communication of critical alerts is documented and maintained within the laboratory including the date & time, person communicated to, the result and it's urgency.

17.8.1 Biochemistry Critical Alert Values

Analyte	Units	Low threshold	High threshold	Urgency	Comment
Sodium	mmol/l	≤ 120	≥ 155 (IP) ≥ 150 (OP)	A	
Serum & Plasma Potassium	mmol/L	< 2.8	≥6.0	A	**If H index is >1.26 and K+ is <3.5 or >5.8mmol/L phone SHO/REG/ward** to request **a repeat sample** due to degree of haemolysis & due to K+ not reported K+ ON HAEMOLYSED SAMPLE (H >1.26) IS NOT REPORTED.
			≥5.8	B	
Urea	mmol/L		≥ 30	A	
Creatinine	µmol/L		≥ 354	A	
Adj Calcium	mmol/L	≤ 1.80	≥ 3.0	A	
Phosphate	mmol/L	≤ 0.3		A	
AST	IU/L		≥ 510	A	
ALT	IU/L		≥ 675	A	
Magnesium	mmol/l	≤ 0.4		A	
C-Reactive Protein	mg/L		≥ 300	A	
Lactate	mmol/L		≥ 4.0	A	
Glucose	mmol/L	≤ 2.5	≥ 20.0	A	Fasting
Amylase	U/L		≥ 250	A	
Serum Pregnancy Test	N/A	n/a	≥ 5-25 > 25	A	Phone to Ward to repeat @48hrs Phone to Ward
***hs*Troponin-I**	ng/L		≥16 (female) ≥ 34 (male)	A	Phone all OOH hsTrop results
Free T4	pmol/L	≤ 5.0	≥ 50	C	On OPD & non-oncology patients. Especially patients with no TFT history.
TSH	mIU/L		≥ 25	C	

1st time patient	with several markedly abnormal results (but which may not meet the above criteria)			
Deteriorating patient	**Urea**	(mmol/L)	>15	Provided that the Urea result is >8.0 above previous result trends
	Creatinine	(µmol/L)	High Creatinine phoned at >100 above top of range and again at >100 above previously phoned result	
	Other parameters as per a professional judgement of significant shift eg. in liver enzymes.			
	• **All results should be communicated at time of Validation & Authorisation** ○ Category A results must be communicated within 2 hours of becoming available. ○ Category B and C: communicate on the same day; however, if contact is unsuccessful on day of V&A; V&A report including attempted phone comments & contact the Dr. the next morning (Mon –Thurs only).			

17.8.2 Haematology Critical Result Values

Test Parameter	Units	Low threshold	High threshold	Urgency	Comment
FBC Parameters					
Haemoglobin	g/dL	≤7.0	≥ 20	B	
Platelet Count	$x10^9$/L	≤ 20	N/A	A	
		21 - 50	≥600	B	See report comment
White Blood Cell Count	$x10^9$/L		≥ 30	B	
Neutrophil Count	$x10^9$/L	≤ 0.2		A	
	$x10^9$/L	≤ 0.5		B	
	$x10^9$/L	≤ 1.0		B	A/C Ward pts.
Lymphocytosis	$x10^9$/L		≥10	C	If no history of CLL
Blood Film	N/A			A	Acute Leukaemia / Malaria
Blood Film	N/A		Schistocytes ≥1% per high-power Microscopic field.	A	TTP
				B	DIC / MAHA / Sepsis
Coagulation Parameters					
INR	N/A		≥ 5.0	A	
APTT	Seconds		≥ 100	B	
Fibrinogen	g/L	≤ 1.0		A	
First time patient	with markedly abnormal results (but which may not meet the above criteria)				
Deteriorating patient	any major change in blood indices from previous records				

17.9 Laboratory contingency Procedures in the event of Critical Short Staffing

Over the past number of years the laboratory has experienced fluctuations in staffing levels.
Consequently, there have been occasions where the staffing level on-site at a particular time point / period was low enough to impact the level of service offered.
During 2026, it it should be noted that while staffing levels have returned to optimal levels, the laboratory has committed to a number of projects which will draw on it's staffing resources, which may at times impact the level of service offered. The laboratory wishes to assure the user that laboratory staff will alter work practices, at such times, to ensure that the safe processing of patient samples and issue of results required for daily patient care, will be held in top priority. In doing so, this will minimise the potential risk low staffing levels might have on the reporting of results.
The laboratory will endeavour to notify users of these deviations to normal practices ahead of time, where possible. There may however be occasions where advance notice is not possible, but communication will be made as early as possible on the day affected.
Please note the following, as areas which may/will be impacted:

Routine Day:

- Continued suspension of accreditation – for Biochemistry & Haematology
- Reporting turn around times may be impacted, including for urgent samples.
- Hard copy reports may not be issued, however these will be issued retrospectively.
- Phones may not be answered as quickly as usual. Non-urgent requests may not be followed up that day.
- Routine work may be batched – samples received early in the day may not be processed until later that afternoon.
- Some late OPD samples may not be processed until the following day.
- Weekly processing of tumour markers may not be possible and may be extended to fortnightly. The day of processing may differ from week to week.
- Non-urgent blood transfusion samples/requests or those not required for pre procedure work up, may be processed the day after receipt.
- Blood product requests should be sent down as early as possible.
- Blood film review may be restricted to critical indications only, with routine reviews occurring the following day.

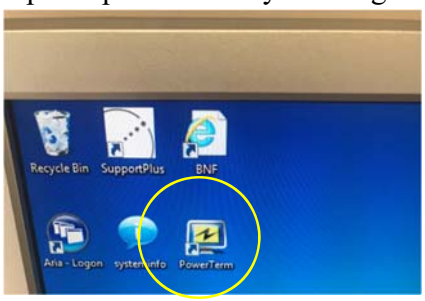
- **On-call**:

- It may not be possible to offer the on-call service on-site, on exceptional occasions, and this may arise at short notice, but users will be informed as early as possible of this. Samples would have to be referred to another site. Instructions and packaging in such an event will be made available to the wards.

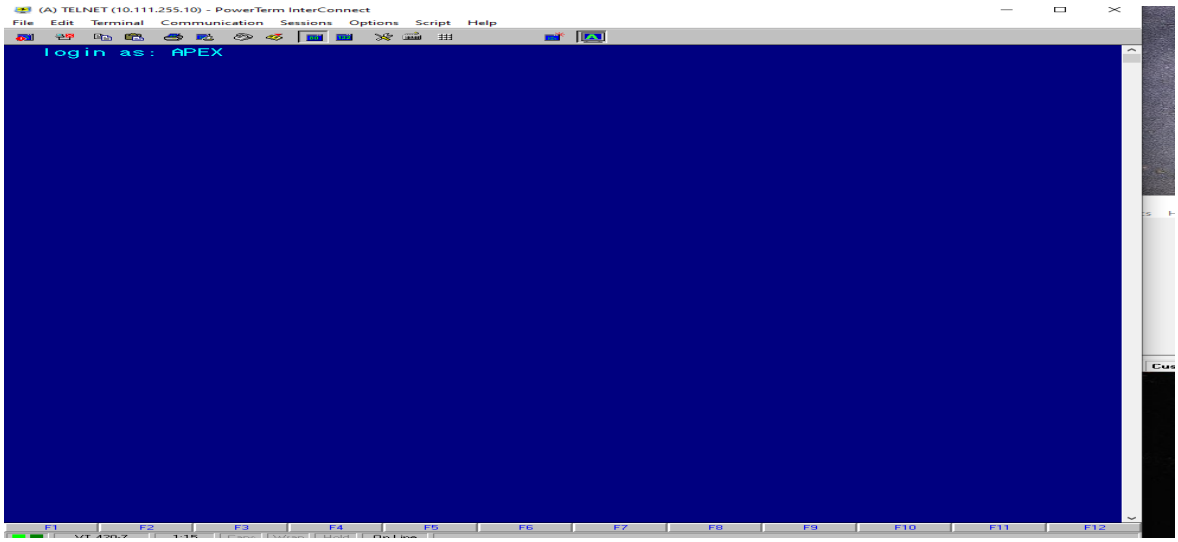
18 APPENDICES

18.1 Appendix I: SLH User Guide to Apex Viewer

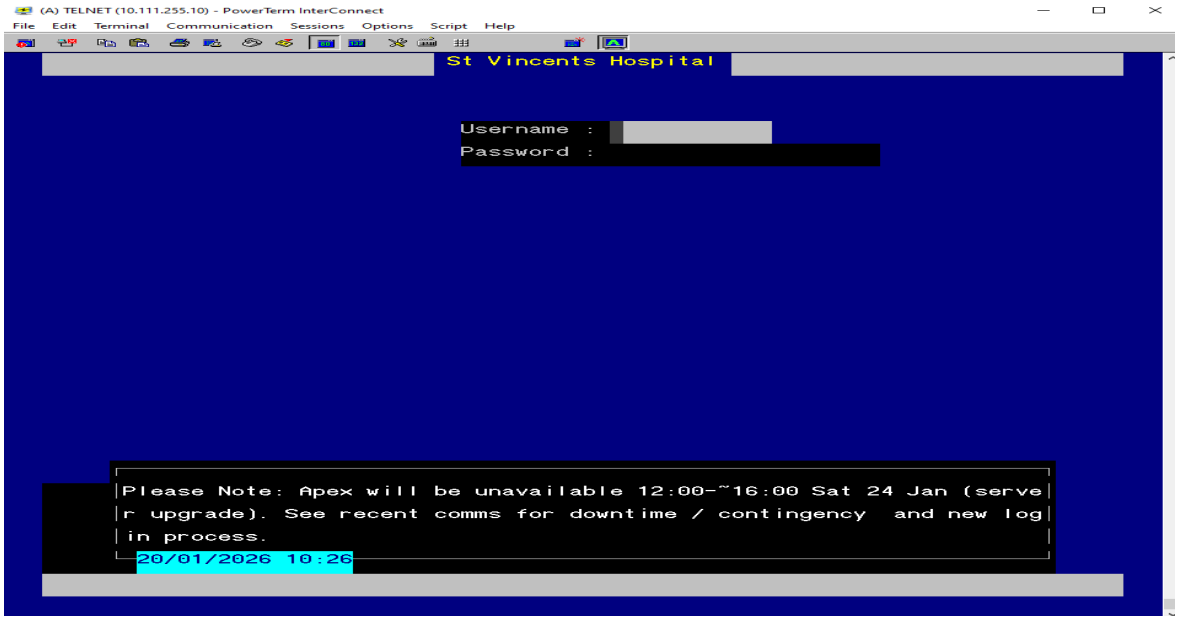
1. Open Apex viewer by clicking on 'Power Term' icon on desktop



2. When Power-Term opens, three options display. Click the "APEX" option then "Connect".
3. The first (preliminary) log-in screen (below) will display:



4. Type APEX beside "log-in as" and press <Enter>
5. The second log-in screen (below) will display.



6. Enter username and password
   Username:

   Password:

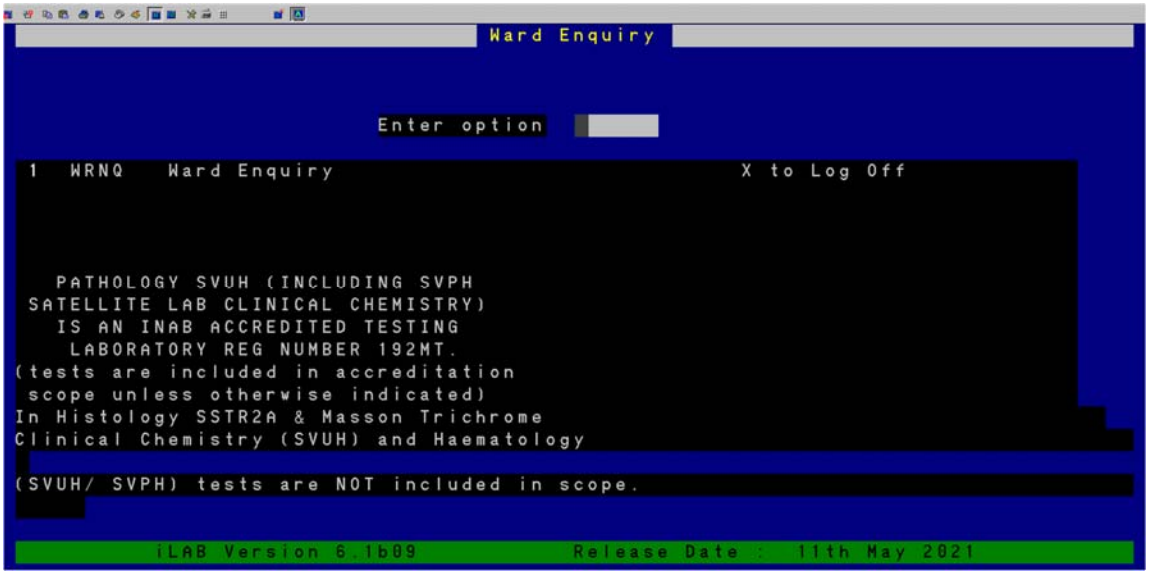
   ***Note**: passwords are updated at intervals in order to comply with software security requirements.*

   If the password is not accepted/out of date, please contact the laboratory on extension 5191.

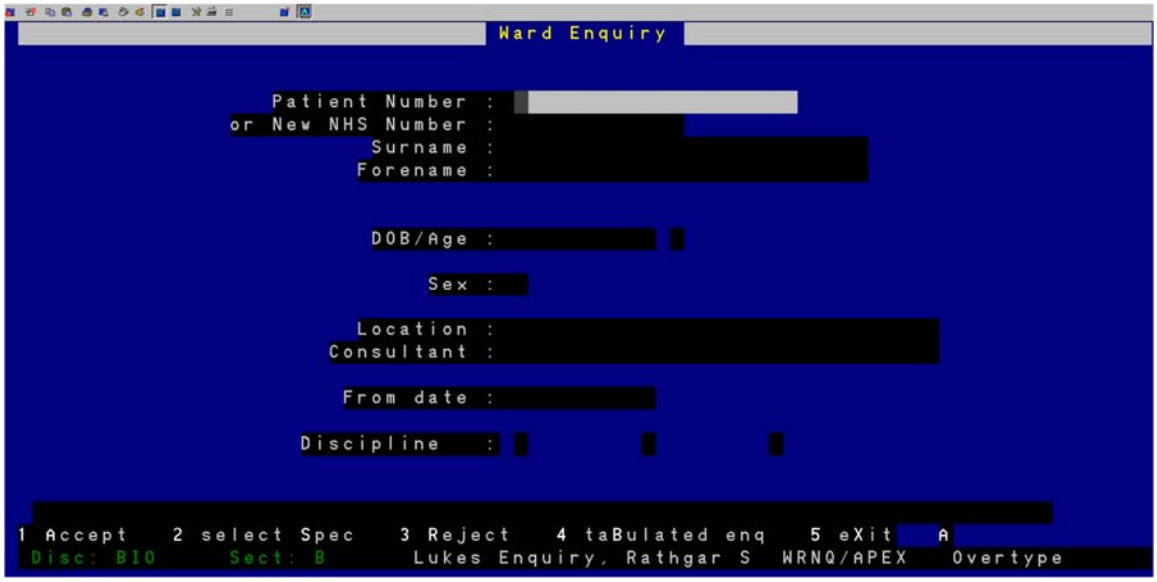
   Remember to be careful here as it's case-sensitive and the password doesn't display when typing!

7. Ward enquiry page will open with 'Enter option' at top of page.
   Enter 1.

   Press return.



8. New page will open under ward enquiry.



9. Enter 'U' on top line for 'Patient Number'.
   Press return.

   Enter patient surname.

   Press return.

   Enter patient forename.

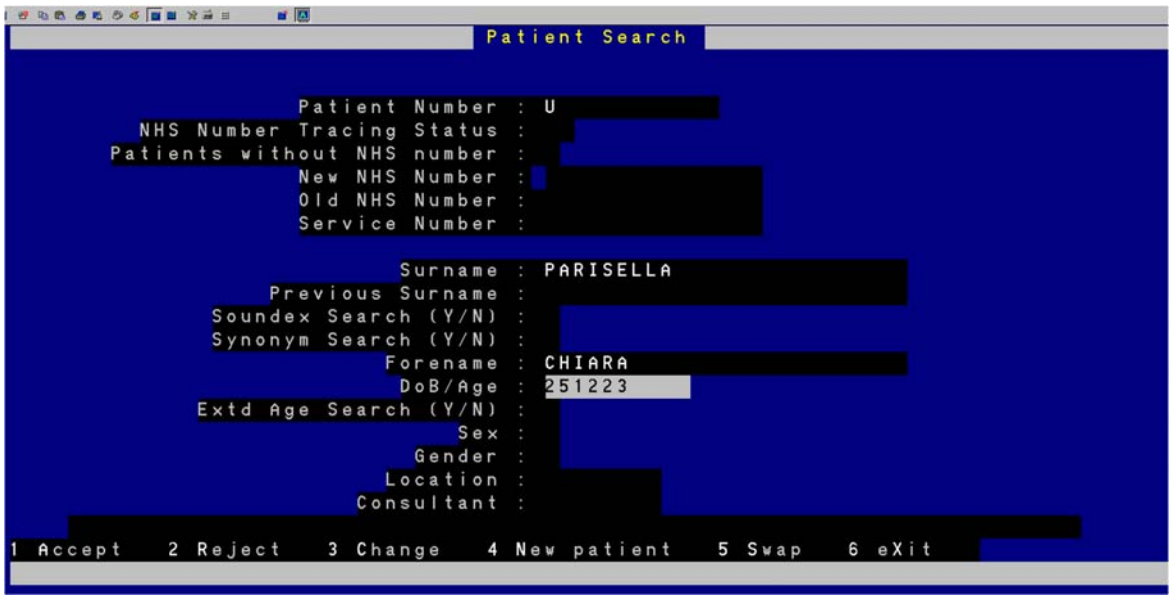
   Press return.

   Enter patient DOB (e.g. 251223, no need to add / or. in between day, month, year).

Press return.

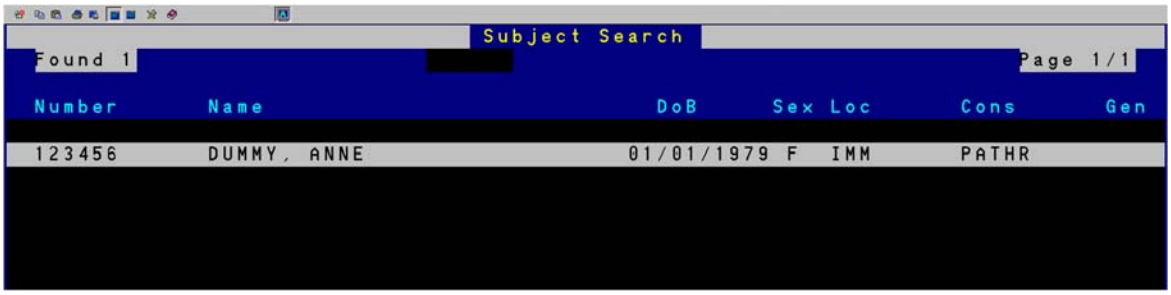
Keep pressing return until cursor flashing over 'A' in bottom right hand corner of screen.

Press return again.



10. Subject search screen will appear.
    Use down arrow ⬇ until required patient is highlighted.

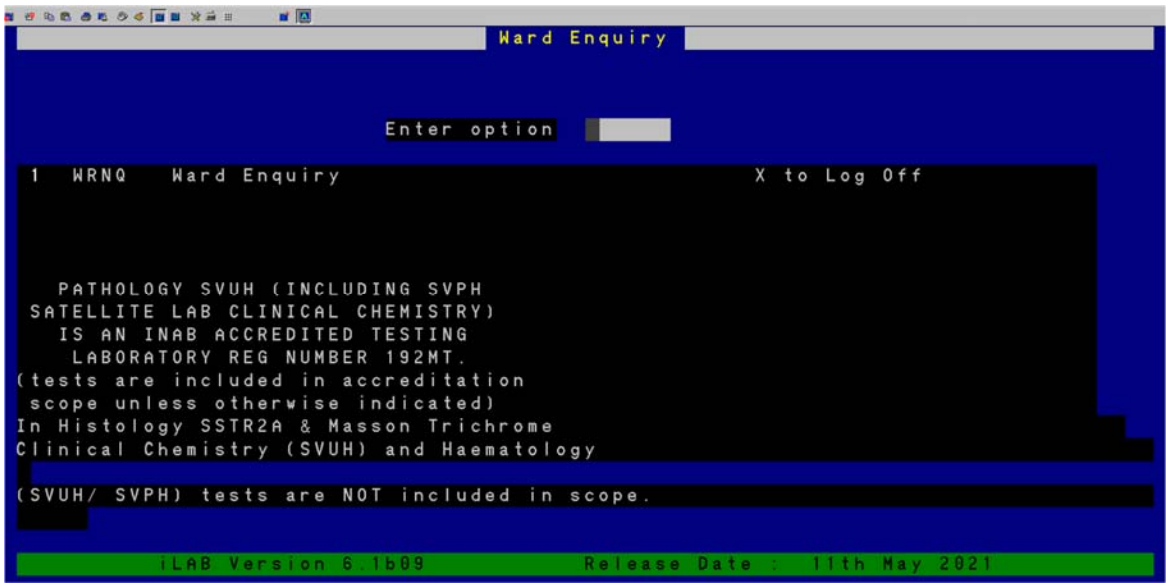
    Press return.



11. Results screen will appear.
    Use 'Page Up' and 'Page Down' to navigate results.

    Press F10 or tab to move back to ward enquiry screen.

12. To log out, enter 'X' under 'Enter option' on first ward enquiry screen.
    Press return.



18.2 Appendix II: Staff Read and Understood Record

Print Name	Signed	Date

18.3 Appendix III: Procedure Amendment Record

	Date	Amendment	Authorised by
1.	15/06/2026	Section 1: Introduction: included statement re impartiality and provision of services to patients of SLRON only.	AM/LF
2.	15/06/2026	Section 2 Quality Statement updated to reflect that the laboratory is currently not accredited	AM/LF
3.	15/06/2026	Section 5 Contacts updated to reflect updated BT & POCT SMS post and DM for POCT Co-ordinator role	AM/LF
4.	15/06/2026	Section 6.4 Specimen Referrals: procedure for urgent referral tests expanded	AM/LF
5.	15/06/2026	Section 6.4.2 External Laboratories, links to external laboratory websites updated. Hyperlink created for LF-PATH-021	AM/LF
6.	15/06/2026	Section 6.5 Point of Care Testing updated to reflect current status of project	AM/LF
7.	15/06/2026	Section 7.1 Combined request form updated to current. Added statement re sending an unprocessed sample back to the ward	AM/LF
8.	15/06/2026	Section 7.2 Blood Transfusion Request form completion – included G&H request by ANP	AM/LF
9.	15/06/2026	Section 7.3 Updated microbiology request form. Added that SVUH request that only one sample is sent per request form	AM/LF
10.	15/06/2026	Section 8.3.5 added 24hr urine creatinine clearance collection procedure	AM/LF
11.	15/06/2026	Section 8.4 Order of Draw Chart included alternate bottle size for Blood Transfusion sample (4.9ml). Added note relating to room temperature and transport asap.	AM/LF
12.	15/06/2026	Section 8.4.3.4 removed disposal information, to 8.4.3.3.	AM/LF
13.	15/06/2026	Section 8.5.3 added requirement for barcoded label not to be removed from blood culture bottle	AM/LF
14.		Section 10.1, 10.3, replaced QF-PATH-001 with QF-PATH-062	AM/LF
15.	15/06/2026	Section 10.6.1: Reformatted display of information & input new imagery regarding target sample volumes for FBC, ESR and Coagulation testing.	AM/LF
16.	15/06/2026	Section 10.6.5: input table with the analysis time limits for various testing	AM/LF
17.	15/06/2026	Section 10.6.6: removed statement relating to transfer of leaking samples to a clean container. No longer done.	AM/LF

18.	15/06/2026	Section 11 included statement that results are not communicated directly to patients.	AM/LF
19.	15/06/2026	Section 11.2 added re delayed reporting	AM/LF
20.	15/06/2026	Section 11.6: removed reference to faxing of results. Inserted 'personal email addresses are not accepted'	AM/LF
21.	15/06/2026	Section 11.7: included statement that the laboratory has a no fax policy	AM/LF
22.	15/06/2026	Section 11.8: Specified known healthcare institutions as the destination of postal reports	AM/LF
23.	15/06/2026	Section 11.9: Expanded requirements for data collection/dissemination when giving verbal results	AM/LF
24.	15/06/2026	Section 11.12 removed reference to uncertainty of measurement	AM/LF
25.	15/06/2026	Section 11.12 added slh scientific staff to communication of results from referral labs. Updated Biomnis contact details	AM/LF
26.	15/06/2026	Section 12 input reference to laboratory issue of password and ICT responsibility for icon availability	AM/LF
27.	15/06/2026	Section 13.2 Information tabulated	AM/LF
28.		Section 14.2.2 Indications for red cell transfusion reformatted in line with updated LI-BBT-023	AM/LF
29.	15/06/2026	Section 14.2.2.1 updated document number and intranet link to Life threatening Haemorrhage Protocol	AM/LF
30.	15/06/2026	Section 14.2.3 amended valid sample time for platelets from 1 week to 1 month. Amended platelet transfusion time from 30mins to 30-60mins	AM/LF
31.	15/06/2026	Section 4.2.3.1 removed reference to rad onc 05	AM/LF
32.	15/06/2026	Section 14.2.4 inserted sentence 'Please check previous diagnoses and treatments given.'	AM/LF
33.		Section 14.5: content expanded to include bullet pointed statements	AM/LF
34.	15/06/2026	Section 14.5.1 inserted policy statement re two blood groups on file prior to product issue and required timing of 2nd sample. Inserted re group confirmation prior to elective procedures	AM/LF
35.	15/06/2026	Section 15 reformatted and divided into user/clinical and patient feedback	AM/LF
36.	15/06/2026	Section 16 management of information section added	AM/LF
37.	15/06/2026	Section 17.1 updated to reflect current accreditation status. Added serum lithium heparin for sample types as appropriate for biochemistry testing. Factors affecting interpretation updated to current. Removed adult reference values to Section 17.6	AM/LF
38.	15/06/2026	Section 17.2 Haemolysis indices updated to current	AM/LF

39.	15/06/2026	Section 17.3 Lipaemic and Icterus affected tests updated to current	AM/LF
40.	15/06/2026	Section 17.5: Monitoring of Thyroid Cancer algorithm updated to current	AM/LF
41.	15/06/2026	Section 17.6 created to accommodate all Biochemistry reference intervals	AM/LF
42.	15/06/2026	Section 17.7 paediatric reference ranges for PT testing updated	AM/LF
43.	15/06/2026	Section 17.8.1 Table updated with comment for haemolysed serum or plasma potassium	AM/LF

NOTES:

Hand Amendment Procedure

- Procedure only to be used for minor amendments eg. typographical
- The amendment must be authorised by the author of the procedure
- The amendment must be noted as a change request in Qpulse
- Strike out the error in the procedure and write amendment above in block capitals
- The amendment must be underlined in this procedure and the corresponding number from the above table written in the margin alongside the change with an asterisk
- Complete the amendment section of the above table
- Where relevant, ensure all applicable staff are notified of the amendment
- Correction fluid must not be used
  Major changes must result in the immediate review of the procedure