Enfer Medical GP User Manual

Our Lady of Lourdes Hospital Drogheda GPs

enfer Medical

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Contents

FOREWORD

Enfer Medical is committed to being the most accessible and efficient clinical diagnostic laboratory service in Ireland. Our goal is always to provide a high level of service to our colleagues in the health services, on behalf of their patients. We are clinically led and patient focused. We strive to continually improve our operational expertise, responding to the needs of our users and providing innovative testing solutions.

The Enfer Medical team works to the highest possible standards in all aspects of the company's business. We subscribe to ISO 15189:2022 international standard of accreditation and are accredited by the Irish National Accreditation Board (INAB) for medical testing. We are strongly committed to service development and the continuous professional development of our team to maintain excellence in all our undertakings.

The purpose of this manual is to act as a reference guide for the provision of a quality service to General Practitioners (GPs) and for their adult patients operating and residing, primarily, within their respective catchment areas. Specimens are processed from adults aged 16 years or older.

GPs requiring access to services at Enfer Medical should reside within the designated Hospital HSE Hub areas for Our Lady of Lourdes Hospital Drogheda and can only request the service as agreed with Our Lady of Lourdes Hospital Drogheda.

GPs requiring access to services that are outside the scope of general practice are required to contact Our Lady of Lourdes Hospital, Drogheda, as this is not included in the testing service at Enfer Medical.

Included in the manual are details about the scope of service, requirements from GPs, range of tests available, expected turnaround times, our location, hours of operation, contact details for key personnel, availability of clinical advice, and other relevant information to allow users to easily access our services.

Rosemary Curran
Medical Director

1.0 INTRODUCTION

Enfer Medical provides a clinical diagnostic laboratory service in the specialities of clinical chemistry, haematology, microbiology, immunology, virology, and genomics. Our service is available to all public and private hospital laboratories, general practitioners, and clinicians from private services throughout Ireland. The laboratory is consultant-led, patient-centred, and quality-focused. A clinical advisory service is available for healthcare professionals and includes advice on the interpretation of individual patient results and appropriate patient management pathways.

The Enfer Medical team works to the highest possible standards in all aspects of the company's business. We subscribe to both ISO 15189:2022 international standard of accreditation and the highest standards of continuous professional development to maintain excellence in all our undertakings. In December 2021, we were awarded our INAB (Irish National Accreditation Board) certificate, registration number 395MT, and we are accredited to the ISO 15189:2022 standard as a medical testing laboratory. We are strongly committed to service development and to the provision of innovative testing solutions for our users.

Our list of accredited tests is detailed in our INAB Schedule of accreditation, and this, alongside our accreditation certificate, are both available on our website (https://www.enfermedical.ie/enfer-medical-accreditation/). The schedule provides details on the test or assay used, specimen types, equipment or technique, and the relevant procedure number in use.

For the purpose of this User Manual, we have included in Appendix 1 to this document, a list of tests available to Our Lady of Lourdes Hospital Drogheda GPs.

Clients will be immediately notified of any changes to testing that may impact ongoing testing. We also provide updates to changes on the schedule of accreditation through our website. Enfer Medical is committed to the sustained innovation of our services through continuous quality improvement, which may include formal academic research and the evaluation of novel approaches aimed at improving the health of patients and the wellbeing of the wider population.

Contact Us:

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Client Services: clientqueries@enfermedical.ie
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2.0 ENFER MEDICAL SUPPORTING OLOLHD GENERAL PRACTITIONERS

Enfer Medical is committed to providing a quality service to General Practitioners (GPs) and for their adult patients operating and residing, primarily, within the OLOLHD catchment areas. Specimens are processed from adults aged 16 years or older. The defined timelines for the delivery and receipt of patient GP specimens collected by General Practitioner services for testing in Enfer Medical are Monday to Friday from 8 am to 6 pm.

The current test repertoire available to General Practitioners is determined by the OLOLHD laboratory consultants, based on best practice guidelines, including the requirements of national programmes. Medical scientists may assess the suitability of any laboratory tests ordered and reject requests based on laboratory procedures, technical/scientific competency, and patient history.

The aim of this manual is to:

1. Provide guidance to General Practitioners on the procedures and standards required to ensure a safe and effective laboratory service.
2. Define the laboratory investigations routinely available to GPs.
3. Outline the standard requirements from GPs in the receipt of the laboratory services.

The laboratory testing services available to General Practitioners are listed in the Appendix 1 to this User Manual, where information on individual tests is available. Laboratory tests not listed in Appendix 1 will be reviewed and assessed based on clinical information provided.

The laboratory at Enfer Medical processes and tests specimens until from 08:00 AM to 10:00 PM daily. This ensures a prompt turnaround for all test results.

3.0 STANDARD REQUIREMENTS FROM GENERAL PRACTITIONERS

Enfer Medical operates a normal service between 8am and 10pm. All GP practitioners are responsible for developing a system whereby test results returned from Enfer Medical are examined and appropriate action is taken in a timely manner.

Enfer Medical requires a register of General Practitioners (GPs) and all health care professionals and services who send specimens to the laboratory, including details of the appropriate contact number for transmission of critical results.

3.1 PROVISION OF EMERGENCY CONTACT DETAILS FOR REPORTING OF "CRITICAL RESULTS" OUTSIDE NORMAL PRACTICE HOURS

It is recognised that occasionally, unexpected critically abnormal results are found on analysis, such that laboratory staff become aware of a potential emergency before the treating General Practitioners. In these circumstances, laboratory staff must follow procedures to contact the requesting GP to relay the result.

Enfer Medical supports the communication of critical results to GP practices and Our Lady of Lourdes Hospital, Drogheda (OLOLHD) and follows these general steps:

1. *Routine Hours Reporting:*

   Critical results are reported directly to GP practices during their routine operating hours (Monday to Friday, 9:00 am to 6:00 pm) using the contact details provided by the practice.

2. *Out-of-Hours Reporting:*

   All General Practitioners requiring laboratory medicine services **MUST** provide contact details for the reporting of "critical" results outside normal practice hours *(Reference: HSE Communication of Critical Results for Patients in the Community National Laboratory Handbook).* **THIS IS A REQUIREMENT FOR ACCESS TO HSE APPROVED LABORATORY SERVICES PROVIDED BY ENFER MEDICAL.**

   GP practices are responsible for establishing an agreed pathway for out-of-hours critical result communication. This may include direct contact to be provided to Enfer Medical via a designated mobile number or through an agreement with a proxy agency like North East Doc On Call (NEDOC). Where a proxy agency e.g. NEDOC is used by a GP Service, arrangements must be made between the relevant parties to ensure that markedly abnormal results can be telephoned directly to the agency, without complication and that follow-up action can occur. This is a critical clinical risk management issue for all parties concerned. It is important to note that the recording of the patient's phone number on the request form will assist communication between parties.

   IMPORTANT: Enfer Medical will follow the agreed protocol for out-of-hours reporting. However, if all avenues are exhausted, including attempts to contact the GP out-of-hours contact and/or any designated proxy agency, Enfer Medical will have no choice but to record all attempts at reporting the critical result and report the critical result on the next working day.

   Additionally, where "Out of Hours Contact Information" is not provided by GPs referring patient specimens for testing at Enfer Medical and where Enfer Medical cannot fulfil its' obligation to report a critical result in accordance with statutory requirements, then referring GPs acknowledge and accept that Enfer Medical, will have no choice but to record all attempts at reporting the critical result and report the critical result on the next working day. The referring GP shall be responsible for the receiving of these critical results and any delays arising.

   Emergencies
   In rare life-threatening emergencies, such as a new diagnosis of acute leukaemia or Thrombotic Thrombocytopenia Purpura (TTP), Enfer Medical will escalate this directly to the OLOLHD laboratory if the GP out-of-hours contact and proxy services are unreachable. This is subject to the relevant clinical information being provided in the patient request form received for this patient.

3. *Documentation:*

   Enfer Medical will document all critical result communication, including the date, time, individuals involved, results conveyed, verification of communication accuracy, and any challenges encountered during notification.

By adhering to agreed protocols and documenting all actions taken, Enfer Medical ensures a robust and reliable process for managing critical results in collaboration with GP practices and OLOLHD.

IMPORTANT: While Enfer Medical supports the communication pathways for critical results, the responsibilities and agreements with GP practices and proxy agencies lie with the respective parties.

Enfer Medical remains a facilitating partner to ensure smooth and effective communication of critical results.

3.2 CRITERIA REQUIRED FOR LABELLING PATIENT SPECIMENS

The use of printed labels produced by the GP practice management system, tailored to the specimen container size, is the preferred labelling method as it enhances the accuracy and legibility of information.

We have outlined below, both mandatory and desirable criteria for the labelling of patient specimens.

MANDATORY:

All specimens, including the specimen container, must be labelled with the following minimum dataset:

- **Patient's Full Name:** Surname and forename must be clearly identified. Please note that addressograph/patient labels must clearly differentiate between the patient's surname and forename.
- **Patient's Date of Birth**
- **Date of Collection:** The date when the specimen was collected.
- **Time of Collection:** The time of collection is a mandatory requirement to determine specimen integrity and of importance also for self-collected specimens such as stool specimens.

DESIRABLE:

- **Gender of Patient:** Particularly important where investigations have gender-related reference ranges (e.g., hormone testing).
- **Specimen Type or Site:** For non-blood specimens (e.g., MSU, Ear Swab).

Important: Kindly note that incomplete labelling requirements or where minimum criteria is not met, this may lead to specimen rejection. This could result in the need for a repeat specimen, potentially causing inconvenience to patients and delaying results. Enfer Medical has developed a schedule of Specimen Receipt Anomalies (SRAs), describing the scenarios in which testing analysis may be affected and/specimens may be rejected. This Schedule of SRAs also outlines scenarios in which testing proceeds but where test comments are included with results.

We appreciate your attention to ensuring all forms are fully completed to avoid any disruptions.

3.3 CRITERIA REQUIRED FOR MANUAL PATIENT REQUEST FORMS

We respectfully request that he Request Form accompanying the specimen/specimen be legibly written. The legibility of the manual request form is crucial to ensure accurate patient details. Use of block capitals or a clearly typed form is recommended to reduce errors in patient identification, test selection, or location.

MANDATORY: The Request Form must include the following minimum dataset:

- **Patient's Full Name:** Forename and surname
- **Patient's Date of Birth**
- **Patient's Address:** This is a mandatory field required for Healthlink result transfer
- **Date of Collection:** The date when the specimen was collected
- **Time of Collection:** Required in specific cases, such as stool specimen testing
- **Requesting Doctor's Name and MCRN:** Used as the destination for the report (GP practice stamp and sticker are very welcome).
- **Specimen Type/Site:** Mandatory for all non-blood specimens (e.g., Ear Swab, MSU)
- **Laboratory Test Required:** Please ensure that all laboratory test names are used exactly as they appear in Appendix 1. This consistency is crucial for our specimen reception team to accurately match incoming specimens with the correct tests, reducing delays and minimizing errors during intake. In situations where there is uncertainty regarding the requested test name then testing will be put on hold pending clarification with the requesting GP.

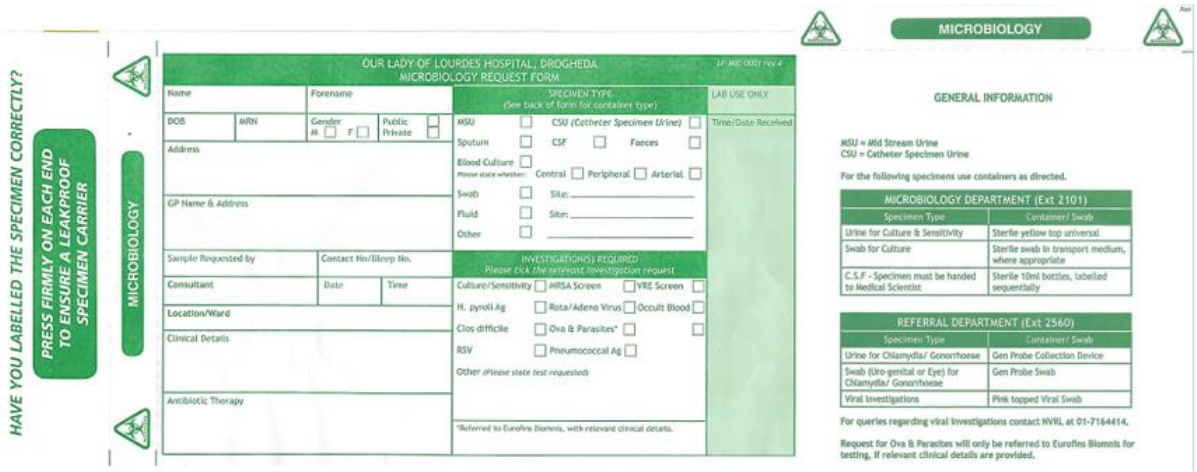
STRONGLY RECOMMENDED:

- **Gender:** Especially relevant where Male or Female are significant
- **Patient's Clinical Details and Relevant History:** Including drug, anticoagulant, or antibiotic therapy, to aid in the interpretation of results
- **Patient Preparation Conditions:** Such as fasting

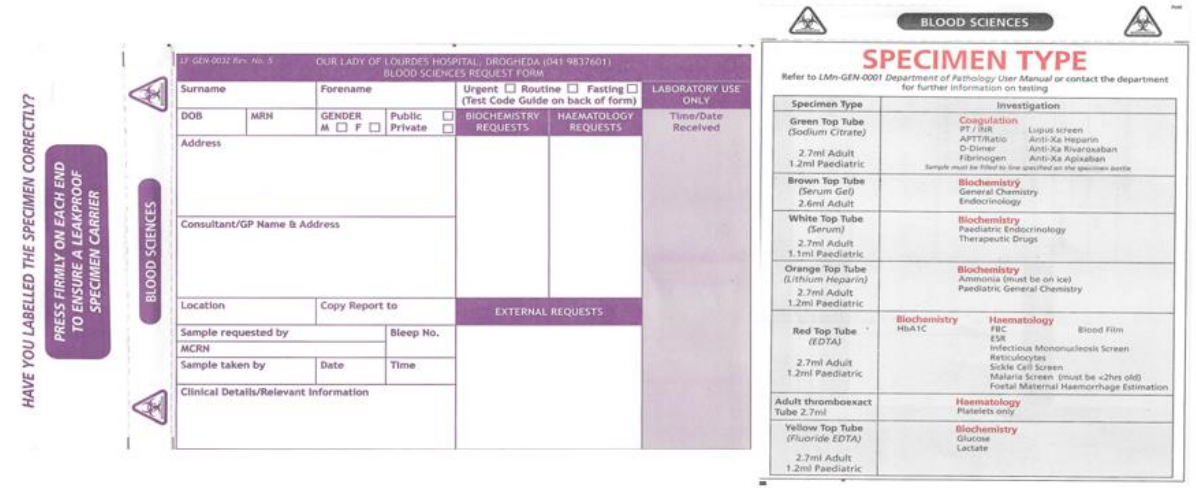
Certain investigations may require additional information on the specimen or request form and we encourage GPs to provide all relevant clinical information where available.

Important: Kindly note that incomplete patient request forms may lead to specimen rejection. This could result in the need for a repeat specimen, potentially causing inconvenience to patients and delaying results. We appreciate your attention to ensuring all forms are fully completed to avoid any disruptions.

OLOLHD Microbiology Request Form:



OLOLHD Blood Science Request Form:



IMPORTANT:

The use of the GP Practice stamp and printed sticker are best practice when completing manual patient request forms.

All writing on the request form must be clearly legible (BLOCK CAPITALS preferred) so that the information provided is legible, thus ensuring proper identification of the patient and all tests requests. Writing should be in ballpoint pen (not marker) to ensure the information is copied through to each sheet of the request form.

3.4 CRITERIA REQUIRED FOR SENDING URGENT SPECIMENS

is important to follow specific steps to ensure quick identification and efficient handling by the laboratory. The following guidelines will help prioritise your samples and ensure that all necessary information is clearly communicated:

- Clearly mark both the specimen and the patient request form as **URGENT**.

- Confirm all information on the label and request form is complete and legible, verifying test names are accurate as per Appendix 1.
- **PROVIDE THE CLINICAL REASON FOR THE URGENT REQUEST IN ADDITION TO OUT OF HOURS CONTACT DETAILS FOR THE REFERRING CLINICIAN ON THE REQUEST FORM. IN THE ABSENCE OF EITHER, SPECIMENS WILL BE PROCESSED AS ROUTINE REQUESTS.**
- Place the specimen and patient request form into the provided **RED URGENT SPECIMEN BAG** for easy identification.
- **NOTIFY** the laboratory of the urgent status upon collection to help expedite processing. Email or call Enfer Medical on 353 (0)45 819000 or gpclinicalqueries@healthmail.ie to notify the lab about incoming urgent samples for immediate patient management; this is an **essential** requirement to enable the laboratory to prioritise testing.

3.5 PROTOCOLS FOR 24-HOUR STABILITY AND SAME-DAY URGENT SPECIMEN PROCESSING

IMPORTANT: PLEASE NOTE THAT THE FOLLOWING TESTS HAVE A 24-HOUR STABILITY AND FOR GPS WHO DO NOT HAVE A DAILY COLLECTION OF SPECIMENS FROM HSE PRIMARY CARE LOGISTICS, THEN WE KINDLY ADVISE THAT THE FOLLOWING TESTS ARE ONLY CARRIED OUT ON DAYS THAT SPECIMENS ARE COLLECTED FOR DELIVERY TO THE LABORATORY.

- Urine Chlamydia/Gonorrhoea (please note that the 24hr stability applies where a general urine pot is used, the use of Aptima urine collection pots extends stability to 30 days).
- ESR - specimens should be tested within 24 hours of collection, however, specimens over 24hrs and under 48hrs can be tested but will be reported with a test comment.
- Blood Film – please note that where an FBC result reflexes to a Blood Film, specimens must be <= 24 hours to proceed to Blood Film analysis.
- Pro-BNP - Specimens must be spun within 24 hours and tested within 6 days of collection and stored at 2-8°C.
- Potassium - Specimens must be tested within 1 day of collection if spun and stored at 2-8°C. Specimens must be tested within 4 hours if unspun.
- TPO Antibodies - Specimens must be spun within 8 hours and tested within 3 days of collection and stored at 2-8°C. Remove serum from the clot if testing will be delayed for more than 8 hours.

- Anti Thyroglobulin Antibody - Specimens must be spun within 8 hours and tested within 3 days of collection and stored at 2-8°C. Remove serum from the clot if testing will be delayed for more than 8 hours.
- Cortisol - Specimens must be spun within 8 hours and tested within 7 days of collection and stored at 2-8°C. Remove serum from the clot if testing will be delayed for more than 8 hours.

COAGULATION TEST PROTOCOLS FOR SAME-DAY PROCESSING

At Enfer Medical, we recognise the importance of timely warfarin dosing in patient care. To support GPs in delivering effective treatment, coagulation requests, including Prothrombin Time (PT) and International Normalised Ratio (INR), will be processed on the same day they are received. To facilitate same, it is essential that the process for requesting urgent specimen analysis as outlined above is adhered to when submitting Coagulation specimens.

By following these guidelines, you will help ensure that coagulation tests are prioritised and processed promptly, allowing for timely patient management and critical decision-making, such as adjusting warfarin doses within the required 24-hour window.

POTASSIUM TESTING - SAMPLE COLLECTION AND PROCESSING CRITERIA

Potassium testing requires careful attention to timing due to its short stability i.e. the sample must be tested within 4 hours of sample collection time, as it is unstable beyond this point. Given the time delay between sample collection times and the delivery of samples to Enfer Medical, Enfer Medical in the majority of cases may not be in position to provide a potassium test. However, if samples are centrifuged within 4 hours of being drawn from the patient, they can be tested at Enfer Medical, provided they have been centrifuged at 3500rpm for 10 minutes. This process helps to extend the testing window, allowing the sample to remain viable for analysis. **It is essential to include the centrifuge speed, duration and time of centrifugation on the PRF to meet the necessary testing criteria and ensure accurate results. Additionally,** please ensure that the process for requesting urgent specimen analysis as outlined above is adhered to when submitting requests for potassium analysis.

Instructions for Potassium Testing and Sample Handling

Timing and Stability:

- Potassium samples are highly time-sensitive and must be tested within 4 hours of sample collection.
- Samples that are not tested within this 4-hour window will be considered unstable and cannot be processed at Enfer Medical.

Centrifugation Criteria (to extend testing window):

If centrifuging the sample within 4 hours of collection, it can be processed at Enfer Medical, provided the following conditions are met:

- The sample must be centrifuged at 3500rpm for 10 minutes.
- This procedure helps to preserve the stability of the sample, extending the testing window and allowing the potassium test to be performed beyond the initial 4-hour period.

Documentation Requirements:

It is critical to include the following details on the PRF (Patient Request Form) to ensure the sample meets testing criteria:

- Centrifuge Speed (3500rpm)
- Centrifuge Duration (10 minutes)
- Time of Centrifugation (specific time the centrifugation process was completed)

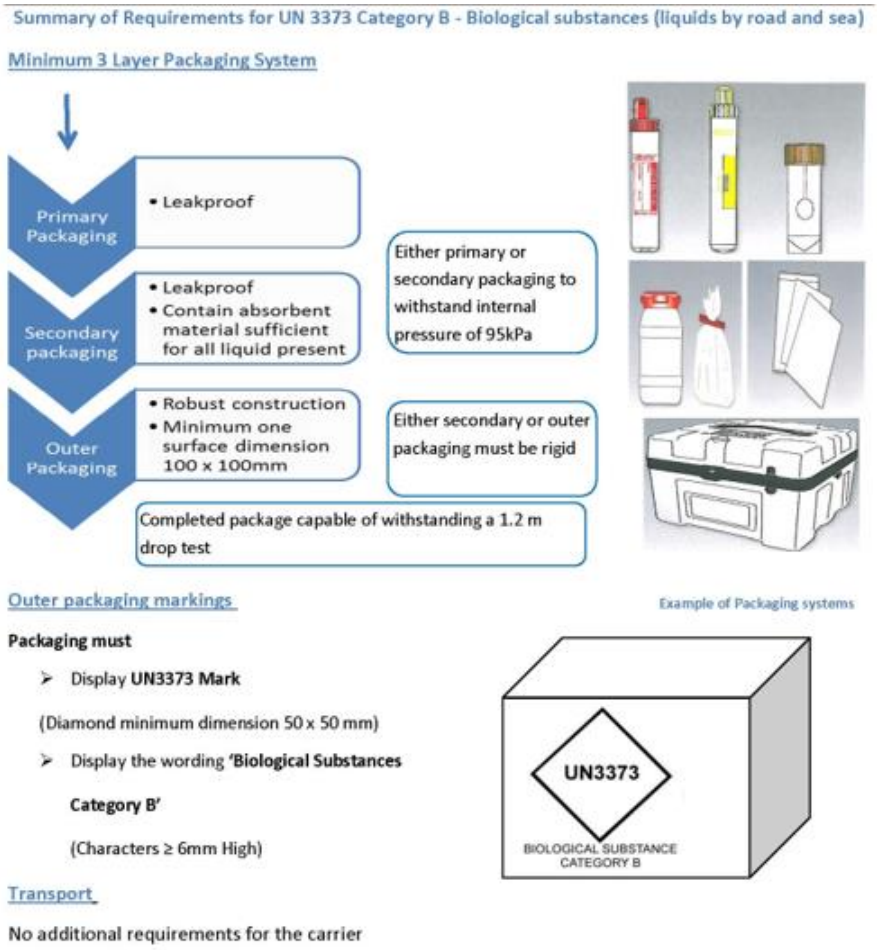
4.0 SPECIMEN TRANSPORT

OLOLHD GPs currently receive dedicated support from the HSE Primary Care logistics team to collect and transport specimens from GP practices to OLOLHD.

To ensure the timely processing and integrity of specimens, Enfer Medical collects specimens twice daily from OLOLHD for delivery to Enfer Medical in Naas at 2:30pm and 4.30/5pm. This systematic approach allows for seamless logistics, minimizing delays and maintaining the integrity of the specimens. The Enfer Medical logistics team and partners are committed to providing a reliable service that meets the needs of OLOLHD GPs and their patients. Specimens are handled with care and transported promptly; we aim to uphold the highest standards of clinical excellence.

In accordance with the ADR 2019 Safety Legislation, there are specific packaging instructions and labelling requirements requiring triple packaging including:

- ✓ Primary leak-proof container – tube or vial containing the specimen.
- ✓ Secondary watertight packaging, with absorbent material, intended to protect the primary container i.e. biohazard envelope.
- ✓ Outer rigid container protects the secondary container.
- ✓ Patient Request forms must be placed between the secondary container and the outer shipping container.



5.0 PRE-ANALYTICAL GUIDANCE

Factors affecting test results – Specimen Stability:

Serum specimens which are highly haemolysed, or hyperlipaemic should not be sent to the laboratory. We have provided detailed specimen stability information for each test in Appendix 2.

In the absence of daily specimen pick-up from individual GP practices by the HSE Primary Care logistics team, specimens sent to Enfer Medical may have been taken some time prior to their arrival at the laboratory. This could potentially lead to stability issues, which may affect the accuracy and reliability of the test results.

It is crucial that GPs refer to Appendix 2, "Specimen Collection Guidance for Approved Services for Our Lady of Lourdes Hospital Drogheda," to ensure that specimens remain stable and suitable for testing, particularly for those with stabilities under 24-48 hours.

Proper adherence to these guidelines helps to maintain the quality and integrity of the specimens during transportation and processing.

Criteria for rejection of specimens:

In rare cases specimens may not be suitable for testing on arrival to the laboratory. In that case the specimen will be rejected at the receipt stage and the service user will be notified immediately and an explanation as to why the specimen could not be processed will be provided. Reasons why specimens are rejected include but are not limited to:

- Specimens received beyond the stability limits and/or not at the correct temperature indicated for each test.
- Incorrect specimen type received.
- Leaking specimens, specimen not received or specimen insufficient for analysis as stated below within specimen requirements.
- Non-compliant specimens or request forms, i.e., those missing specimen date information, missing specimen test request and/or missing specimen site/type information.
- Specimens received without the necessary patient identifiers.
- Problems during transport of specimens where the specimen is compromised.
- Illegibility

The laboratory reports SRAs (Specimen Receipt Anomalies) within 4 hours of identification of an issue to facilitate prompt recall of patients if required. Please review the SRA policy and Appendix 3 within.

6.0 CRITICAL RESULTS REPORTING GUIDE

Please review the following *Enfer Medical Critical Results Guide and Procedure* for specific result details.

Category	Reporting
Category A	**Results require communication within 2 hours.** This classification indicates potential immediate danger to the patient, or a potential life-threatening illness when urgent intervention is required.
Category B	**Results require Communication within 24 hours**, and preferably on the same working day.
Category C	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. **Communication on the next working day is satisfactory.**

Microbiology		
Analyte	**Result**	**Category**
C. difficile*	**Toxin Positive**	**A**

Faecal Microbiological Analysis*	**VTEC Positive**	**A**
HBsAg*	**Detected - new detection only**	**B**
HCV Ab*	**Detected - new detection only**	**B**
HIV 1 or 2*	**Detected - new detection only**	**B**
Surveillance Screen -CPE (rectal/stool)*	**Positive (first)**	**B**
Swab (Pus / Fluid aspirate)	**Any unexpected culture result (unusual pathogen, MDRO) where patient likely to be on inappropriate empiric therapy**	**C**
Treponema Pallidum*	**Positive specific serology- new detection in pregnancy only**	**B**

Haematology			
Analyte	**Critical Low**	**Critical High**	**Category**
Blood Film Morphology	**Blasts Significant schistocytes**		**A**
Haemoglobin	**<7.0 g/dL**	**≥ 20.0 g/dL**	**B**
INR		**≥5.0**	**A**
Neutrophil Count	**≤ 0.5 x 10^9 /L**		**A**
Platelet Count	**≤ 30 x 10^9 /L**		**A**
	31 -50 x 10^9/L	**≥ 600 x 10^9 /L**	**B**
White Blood Cell Count		**≥ 30 x 10^9/L**	**B**
PT*		**>40 seconds**	**C**
APTT*		**>70 seconds**	**C**
Fibrinogen*	**<1.0 g/L**		**C**
D-Dimer*		**>500 ng/mL**	**C**

Biochemistry			
Analyte	**Critical Low**	**Critical High**	**Category**
Active B12*	**<25 pmol/L**		**B**
Vitamin B12	**≤ 100 pg/L**		**B**
Adjusted Calcium*	**≤ 1.7 mmol/L**	**≥ 3.5 mmol/L**	**A**
		3.0 - 3.5 mmol/L	**B**
ALT*		**≥ 510 U/L on first occurrence**	**A**
Amylase		**≥ 625 U/L**	**A**
AST*		**≥ 510 U/L on first occurrence**	**A**
Carbamazepine*		**≥25 mg/L**	**A**
CO2*		**>35.0 mmol/L**	**B**
	<15.0 mmol/L		**A**

Cortisol	**≤50 nmol/L**		**A**
Creatine Kinase*		**≥ 5000**	**B**
Creatinine		**≥ 354 µmol/L (on first occurrence)**	**A**
CRP*		**≥ 300 mg/L**	**B**
Digoxin*		**≥2.5 µg/L**	**A**
eGFR	**≤ 15 mL/min (on first occurrence)**		**A**
FT4		**≥ 50 pmol/L**	**C**
Glucose*	**≤ 2.5 mmol/L**	**≥ 25.0 mmol/L**	**B**
Hypogammaglobulinaemia	**IgG <3 g/L**		**C**
Lithium*		**>1.5 mmol/L**	**A**
Magnesium*	**≤ 0.3 mmol/L**		**A**
Paraprotein	**Any IgE/IgD**	**IgG >15 g/L**	**C**
		IgA > 10g/L	
		IgM > 10 g/L	
Phenytoin*		**≥25 mg/L**	**A**
Phosphorus	**≤ 0.3 mmol/L**		**A**
	≤ 0.45 mmol/L		**B**
Potassium*	**≤ 2.3 mmol/L**	**≥ 6.0 mmol/L**	**A**
Sodium*	**≤ 120 mmol/L on first occurrence**	**≥ 155 mmol/L on first occurrence**	**A**
Triglycerides		**≥ 20 mmol/L**	**B**
Troponin*		**≥99 percentile ng/L on first occurrence**	**A**
TSH		**>75 mIU/L**	**B**
Urea		**≥ 30 mmol/L on first occurrence**	**A**

Source: Communication of Critical Results for Patients in the Community National Laboratory Handbook 2019 (EMED131) and * as per consultant recommendation.

7.0 COMMUNICATION

Client Services Support

- Enfer Medical is committed to providing a seamless and responsive experience for our clients, including General Practitioners.
- The Client Service Team at Enfer Medical plays a central role in this process, triaging queries in real-time to the appropriate personnel. This enables us to address inquiries as efficiently as possible, aligning with our dedication to exceptional client service. We understand the importance of timely and accurate information, and our commitment to real-time query management reflects our ongoing efforts to exceed client expectations.
- A telephone service for healthcare professionals is available from 08:00 to 20:00 each working day. All enquiries to the laboratory shall be dealt with promptly by the client services team with referral to a member of the laboratory, commercial or clinical team where appropriate.

Tel no. details: +353 (0) 45 819 000

- Additional communication is facilitated through the ENFER MEDICAL website and by direct contact with the laboratory.
- In the event an urgent report is required, the GP must alert the laboratory by telephone/by email at gpclinicalqueries@healthmail.ie and state the nature of the urgency and must ensure it is clearly indicated on the Request Form. Additionally, the out of hours contact details for the referring clinician must be included in the Request Form.
- Phoning the laboratory for results: Please contact the Client Services team at 353 (0) 45 819 000.

Key Laboratory Personnel

Position	Name
Medical Director	Dr Rosemary Curran
Operations Director	Dr Paul Simmons
Consultant Chemical Pathologist	Prof. Carel Le Roux
Consultant Microbiologist	Dr Rosemary Curran
Consultant Haematologist	Dr Saad Ahmed
Quality Manager	Margaret Buggy
Laboratory Manager	Jonny Finnegan
Laboratory Manager (Genomics)	Elaine Kenny
IT Manager	Tom Tobin
Commercial Director	Dolores Barry
Group Health and Safety Manager	Susan Wall
Clinical Advice	Consultants on duty
Client Services Team	Client Service Team Member
Service Feedback	Commercial and QA Managers
GDPR Requests	Data Protection Officer

8.0 CLINICAL ADVISORY SERVICES

Enfer Medical provides a consultant led clinical advisory service to our users. Our Medical Consultants are responsible for the provision of clinical advice. Our Clinical and Medical Scientists with the appropriate training can provide technical advice on the interpretation of laboratory results.

- OLOLHD GPs may contact members of our Clinical Team between the hours of 08:00 to 18:00 Monday to Friday by email at gpclinicalqueries@healthmail.ie OR by contacting our Client

Services Team who will direct the query without delay to the relevant member of the Clinical Team (see below) or their Deputy.

Enfer Medical Clinical Advisory Team/Consultants

Position	Name
Consultant Chemical Pathologist	Prof. Carel Le Roux
Deputy Consultant Chemical Pathologist	Dr Royce Vincent
Consultant Haematologist	Dr Saad Ahmed
Deputy Consultant Haematologist	Dr Kanthi Perera
Consultant Microbiologist	Dr Rosemary Curran
Deputy Consultant Microbiologist	Dr Billie Caceda
Deputy Consultant Microbiologist	Dr. Ciaran O'Gorman
Clinical Advice	Relevant Consultant or Clinical/Medical Scientist on duty
Client Services Team	Client Service Team Member

- Enfer Medical takes pride in offering a comprehensive and traceable clinical advisory service to Healthcare Professionals, ensuring optimal support when needed for patient result interpretation and management pathways.

- At Enfer Medical, the Client Service Team plays a central role in this process, triaging queries in real-time to the appropriate personnel. This enables us to address enquiries such as urgent clinical queries as efficiently as possible, aligning with our dedication to exceptional client and clinical service. We understand the importance of timely and accurate information, and our commitment to real-time query management reflects our ongoing efforts to exceed client expectations.

9.0 CHRONIC DISEASE MANAGEMENT

We respectfully request that GPs be cognisant of the national referral criteria for the GP direct access to the Chronic Disease Management program. Please ensure that you only refer tests fulfilling the criteria below to the laboratory, to ensure that this service can be continued.

- One NTproBNP test will be facilitated for the first GP Structured Chronic Disease Management registration visit for each patient who has a diagnosis of type 2 diabetes, ischemic heart disease or atrial fibrillation. This is in line with the GP Agreement 2019. An allowance may also be made for individuals who have a pre-existing clinical diagnosis of one of the above chronic diseases and who are already registered on the Structured Chronic Disease Management Programme but who still require an NTproBNP test to establish a baseline for their condition;

- Outside of these criteria, an NTproBNP may be ordered in the following circumstances, where the GP feels it's clinically indicated:
  1. For investigation of a patient who has one of the above diagnoses and presents with deterioration in symptoms; consistent with heart failure; and
  2. As part of the investigative work up of a patient who presents with symptoms consistent with heart failure.

10.0 VITAMIN D TESTING AND GUIDELINES

Please note that Vitamin D testing should be restricted to specific patient groups as outlined in the HSE Laboratory Services Reform Programme Advice Note (2024) - Indications for the measurement of Vitamin D levels.

See Link Below:
National Guidelines for Vitamin D measurement

National Guidelines Advice for Laboratories and Users

1. Vitamin D testing should be reserved for specific patient groups; it should not be used as a general screen.

2. In general indications for testing for vitamin D should be one of the following:

   a) metabolic bone disease
   i. Osteoporosis or Osteopaenia
   ii. Rickets or Osteomalacia
   iii. Paget's Disease of Bone
   iv. Pathological Fracture
   v. Unexplained Hypocalcaemia, raised PTH, low or high Phosphate

   b) Specific named clinical condition due to or leading to Vitamin D Deficiency
   i. Malabsorption, CKD, Liver Disease
   ii. Muscle weakness
   iii. Chronic inflammation
   iv. Certain Drug therapies: Glucocorticoids, Anticonvulsants, Antiretrovirals, Antifungals, Anti Oestrogens or Cholestyramine

3. Routine repeat resting is not required. For those with low baseline and malabsorption retesting in 6 months may be helpful.

4. The Department of Health have issued advice for the general population regarding vitamin D supplementation (see link above).

11.0 USER FEEDBACK

Enfer Medical highly values client feedback as an integral component of our quality management systems. We actively encourage users to share their experiences, suggestions, or concerns through our dedicated feedback channels. This valuable input not only contributes to the enhancement of our services but is also a testament to our dedication to providing the best possible laboratory experience. Clients can access real-time feedback on our website or submit their comments directly.

We prioritise the integration of client feedback into our quality management system meetings, where it forms a crucial part of our discussion points. By engaging with and implementing feedback, Enfer Medical ensures that our laboratory services align with the needs and expectations of our clients, fostering a collaborative and responsive approach to quality assurance.

Beyond improvement efforts, this feedback process is a critical component of our complaints handling process. By actively engaging with and addressing client feedback, we ensure a robust and responsive approach to resolving concerns and maintaining the highest standards of service quality.

Where a GP needs to raise a complaint, they should contact one of the below:

Designated Client Service Contact: Mags Treacy (clientqueries@enfermedical.ie)

- Quality Manager: Margaret Buggy (quality@enfermedical.ie)
- Operations Director: Paul Simmons (paulsimmons@enfermedical.ie)
- Client Services section on www.enfermedical.ie

Or alternatively by raising a ticket here using the following link here or by using the link on our website. The information will be treated as confidential and investigated thoroughly. This process will link into the Quality Management System procedure for incident investigation.

Complaints will be acknowledged on receipt. Resolution of complaints will be undertaken within the shortest timeframe achievable. If resolution cannot be achieved within one month, the complainant will be notified.

The findings and corrective actions are documented in an investigation report, and the findings are then shared with the client, from our Enfer Medical Quality Assurance Manager, within one month of the NC being raised. This transparent and proactive communication ensures clients are informed and reassured about the steps taken to address the issue.

12.0 DATA PROTECTION

Policy on protection of personal information:

Enfer Medical is committed to protecting the privacy of personal information of its service users and patients. In the course of their work our staff are required to collect and use certain types of information about people, including 'personal data' as defined by the Data Protection Act 2018. The service user has a responsibility to ensure that this personal data is:

- Obtained fairly.
- Recorded correctly, kept accurate and up to date.
- Used and shared both appropriately and legally.
- Stored securely.
- Not disclosed to unauthorised third parties.
- Disposed of appropriately when no longer required.

All staff working at Enfer Medical are required under the Data Protection Act 2018 to ensure the security and confidentiality of all personal data they process on behalf of service users and patients.

13.0 REFERRAL POLICY

For the purposes of additional or confirmatory investigations, specimens may be referred to an accredited external laboratory, where possible. Enfer Medical approves referral Laboratories for use, and these are evaluated, selected, and monitored by the clinical and quality teams at Enfer Medical and will be listed on the Approved Referral Laboratory List. The referral laboratory is clearly identified on the final report.

14.0 CHANGE HISTORY

Revision	Amendment details	Revision Date
1	New document	24/10/2024
2	Section 3.4 - updated criteria for urgent samples Section 3.5 - updated criteria for stability and urgent samples Section 11 - findings shared within one month Section 8 Dr Ciaran O'Gorman added Appendices 1 – 3 updates to test list details and SRAs	18/04/2025

APPENDIX 1:

List of HSE Approved Laboratory tests routinely available to OLOLHD GPs (V2)

Biochemistry		Haematology	Immunology	Microbiology
Thyroid Function (Free T4/TSH)	Urate	Vitamin B12/Folate (Fasting sample)	Anti-CCP	Culture & Sensitivity
LH & FSH	Amylase		Rheumatoid Factor	Fungal Culture
Cortisol (time must be stated)	Magnesium	Infectious Mononucleosis screen	Thyroid microsomal antibodies (TPO)	Mycobacterial investigation
PSA (Supply Clinical details)	Creatinine Kinase	Coagulation screen (PT & INR only)	Tissue Transglutaminase antibody (tTg) / Anti-Gliadin TTG IgA and TTG IgG	Stool investigation: - Routine Stool Investigation: Bacteria/Bacterial Toxins: Salmonella, Campylobacter, Shigella, VTEC - Extended Stool Investigation: Bacteria and Bacterial Toxins C. difficile Toxin A/B gene, Campylobacter spp., Enteroaggregative E.coli (EAEC), Enteroinvasive E.coli (EIEC)/Shigella, Enterotoxigenic E.coli (ETEC), Enteropathogenic E.coli (EPEC), Plesiomonas shigelloides, Salmonella, Shiga-toxin producing E.coli (STEC) stx1/stx2, Shiga-toxin producing E.coli (STEC) O157:H7, Vibrio cholerae, Vibrio parahaemolyticus, Vibrio vulnificus, Yersinia enterocolitica. Viruses Adenovirus 40/41, Astrovirus, Norovirus GI, Norovirus GII, Rotavirus A, Sapovirus (I, II, IV, V)
Oestrodial	Iron studies	INR (Warfarin) –	IgG/A/M Protein Electrophoresis (SPEP)	Ova & Parasites (based on clinical details) (MOCP)

Biochemistry		Haematology	Immunology	Microbiology
Progesterone	Digoxin	ESR	Connective Tissue Disease (CTD) Screen	Chlamydia / Gonorrhoea / MGEN
			Intrinsic Factor	
			Anti-parietal cell screen	
			ANCA – Vasculitis screen only	
Prolactin	Carbenamazapine	Ferritin	Only 3 Allergy tests permitted: - Animal Disorders (allergy) - House dust mite (allergy) - Peanut Allergy - Mixed Grass pollen (allergy) (This assay includes Sweet Vernal Grass, Bermuda Grass and Cocksfoot)	Herpes Simplex Virus
Sex Hormone Binding Globulin	Phenobarbitone	G6PD		Varicella Zoster Virus (VZV) IgG (Immune status)
Testosterone	Phenytoin	Sickle cell/ Thalassaemia		STI screen (syphilis, HIV, HBsAg)
Lithium	B-HCG	FBC & WBC Differential - *Note for patients with known platelet clumping, the platelet count can be reported on a coagulation (citrated) tube – this must be done in house not referred to Enfer Medical.*		Measles/Mumps/Rubella IgG screen
CA 125	Theophylline			Viral Hepatitis B & C screen (HBsAg + anti-HCV)
CA 15.3	Valproate			Hepatitis B Infection status (HBsAg, anti-HBc)
CA 19.9	C Reactive Protein (CRP)			Hepatitis A IgG (HAV IgG)
Alpha Feto-protein (AFP)	Lactate Dehydrogenase			Hepatitis B surface Antigen (HBsAg)
Carcinoembryonic Ag (CEA)	NT Pro-BNP			Hepatitis B surface Antibody (Post vaccination)
Androstenedione	Vitamin D			Hepatitis C Antibody (anti-HCV core IgG)
Lipid Profile (fasting)	Renal Profile			Hepatitis C PCR (HCV RNA; current infection)
Liver Profile	Bone Profile			Syphilis serology
Glucose (random)	Microalbumin – ACR			HIV Ag/An Combo assay
Glucose (fasting)	Protein/Creatinine Ratio - PCR			Individual serology screens (HIV, Hep B, Hep C, Hep A)
Glucose (2hr PP)	HbA1c			Individual Molecular screens (HSV PCR)

APPENDIX 2: Specimen Stability/Collection Guidance, TATs and reference ranges for Approved Services for OLOLHD

Profile Analytes							
OLOLHD Ref.	**Profile**	**Specimen Type**	**Turnaround Time**	**Stability and Storage**	**Units**	**Demographics**	**Reference Range**
BONE PROFILE							
Calcium	Bone	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mmol/L	Adult ≥ 18 years 0 to <1 year 1 year to < 18 years	2.10 to 2.55 2.13 to 2.74 2.29 to 2.63
Phosphate	Bone	5mL venous serum or plasma	Next working day	Specimens should be tested within 3 days of collection and stored at 2-8°C	mmol/L	Adult ≥ 18 years Female 0 to < 15 Days Female 15 Days to < 1 year Female 1 to < 5 years Female 5 to < 13 years Female 13 to < 16 years Female 16 to < 18 years Male 0 to < 15 Days Male 15 Days to < 1 year Male 1 to < 5 years Male 5 to < 13 years Male 13 to < 16 years Male 16 to < 18 years	0.74 to 1.52 1.80 to 3.4 1.54 to 2.72 1.38 to 2.19 1.33 to 1.92 1.02 to 1.79 0.95 to 1.62 1.80 to 3.4 1.54 to 2.72 1.38 to 2.19 1.33 to 1.92 1.14 to 1.99 0.95 to 1.62

Albumin	Bone	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	g/L	Adult ≥18 years Adult 60-90 years Adult >90 years Female 0 to < 15 Days Female 15 Days to < 1 year Female 1 to < 8 years Female 8 to < 15 years Female 15 to < 18 years Male 0 to < 15 Days Male 15 Days to < 1 year Male 1 to < 8 years Male 8 to < 15 years Male 15 to < 18 years	35 to 50 32 to 46 29 to 45 28 to 41 25 to 46 35 to 45 37 to 47 35 to 49 28 to 41 25 to 46 35 to 45 37 to 47 38 to 50
Adjusted Calcium	Bone	Adjusted Calcium	Calculation	Next working day	Mmol/L	Adult ≥ 18 years	2.09 to 2.47
LIPID PROFILE							
Total Cholesterol	Lipid	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mmol/L	Fasting Non-Fasting Female 0 to < 15 Days Female 15 Days to < 1 year Female 1 to < 18 years Male 0 to < 15 Days Male 15 Days to < 1 year Male 1 to < 18 years	≤ 5.0 ≤ 5.0 1.2 to 3.23 1.66 to 6.13 2.9 to 5.4 1.1 to 2.82 1.66 to 6.13 2.9 to 5.4
HDL	Lipid	5mL venous	Next working day	Specimens should be tested	mmol/L	Fasting Adult ≥ 18 years Non-Fasting ≥ 18 years	1.0 to 2.0 1.0 to 2.0

		serum or plasma		within 7 days of collection and stored at 2-8°C.		Female 0 to < 15 Days Female 15 Days to < 1 year Female 1 to < 4 years Female 4 to < 13 years Female 13 to < 18 years Male 0 to < 15 Days Male 15 Days to < 1 year Male 1 to < 4 years Male 4 to < 13 years Male 13 to < 18 years	0.4 to 1.08 0.3 to 1.85 0.84 to 1.63 0.92 to 1.88 0.83 to 1.86 0.4 to 1.08 0.3 to 1.85 0.84 to 1.63 0.92 to 1.88 0.82 to 1.77
LDL	Lipid	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mmol/L	Adult Fasting ≥ 18 years Adult Non-Fasting ≥ 18 years Female 0 to < 1 year Female 1 to < 10 years Female 10 to < 18 years Male 0 to < 1 year Male 1 to < 10 years Male 10 to < 18 years	≤ 3.0 ≤ 3.0 0.34 to 4.48 1.52 to 3.32 1.18 to 3.4 0.34 to 4.48 1.22 to 3.14 1.18 to 3.4
Triglycerides	Lipid	5mL venous serum or plasma	Next working day	Specimens should be tested within 3 days of collection and stored at 2-8°C.	mmol/L	Fasting Non-Fasting 0 to < 15 Days 15 Days to < 1 year 1 to < 18 years	≤ 1.7 ≤ 2.0 0.93 to 2.93 0.6 to 2.92 0.5 to 2.23
LIVER PROFILE							
Total Protein	Liver	5mL venous	Next working day	Specimens should be tested	g/L	Adult ≥ 18 years >60 years	64 to 83 62 to 81

		serum or plasma		within 7 days of collection and stored at 2-8°C.		0 to < 15 Days 15 Days to < 1 year 1 to < 6 years 6 to < 9 years 9 to < 18 years	53 to 83 44 to 71 61 to 75 64 to 77 65 to 81
Albumin	Liver	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	g/L	Adult ≥18 years Adult 60-90 years Adult >90 years Female 0 to < 15 Days Female 15 Days to < 1 year Female 1 to < 8 years Female 8 to < 15 years Female 15 to < 18 years Male 0 to < 15 Days Male 15 Days to < 1 year Male 1 to < 8 years Male 8 to < 15 years Male 15 to < 18 years	35 to 50 32 to 46 29 to 45 28 to 41 25 to 46 35 to 45 37 to 47 35 to 49 28 to 41 25 to 46 35 to 45 37 to 47 38 to 50
ALP	Liver	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	U/L	Male >=18 to 21 years Male ≥ 22 years Male 0 to < 15 Days Male 15 Days to < 1 year Male 1 to < 10 years Male 10 to < 13 years Male 13 to < 15 years Male 15 to < 17 years Male 17 to < 18 years Female >=18 – 29 years Female ≥30 years Female 0 to < 15 Days	56 to 167 50 to 116 90 to 273 134 to 518 156 to 369 141 to 460 127 to 517 89 to 365 59 to 164 44 to 107 46 to 122 90 to 273

						Female 15 Days to < 1 year Female 1 to < 10 years Female 10 to < 13 years Female 13 to < 15 years Female 15 to < 17 years Female 17 to < 18 years	134 to 518 156 to 369 141 to 460 62 to 280 54 to 128 48 to 95
ALT	Liver	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	U/L	Male 0 to<1 year Male 1 to <13 years Male 13 to <18 years Male >=18 years Female 0 to <1 year Female 1 to <13 years Female 13 to <18 years Female >=18 years	5 to 33 9 to 25 9 to 24 <45 5 to 33 9 to 25 8 to 22 <34
GGT	Liver	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	U/L	Male Adult ≥ 18 years Female Adult ≥ 18 years 0 to < 15 Days 15 Days to < 1 year 1 to < 11 years 11 to < 18 years	12 to 64 9 to 36 23 to 219 8 to 127 6 to 16 7 to 21
Total Bilirubin	Liver	5mL venous serum or plasma	Next working day	Specimens should be tested within 3 days of collection and stored at 2-8°C.	µmol/L	Adult ≥ 18 years 0 to < 15 Days 15 Days to < 1 year 1 to < 9 years 9 to < 12 years	3.4 to 20.5 3 to 284 1 to 12 1 to 7 1 to 9

						12 to < 15 years 15 to < 18 years	2 to 12 2 to 14
Globulin	Liver	5mL venous serum or plasma	Next working day	Specimens should be tested within 6 days of collection and stored at 2-8°C.	g/L	18 to 150 years	20 to 35
RENAL PROFILE							
Sodium	Renal	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mmol/L	Adult ≥ 18 years <18 years	136 to 145 133 to 146
Chloride	Renal	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mmol/L	Adult ≥ 18 years <18 years	98 to 107 95 to 106
Urea	Renal	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mmol/L	Male <50 years Male >50 years Female <50 years Female >50 years Female 0 to < 15 Days	3.2 to 7.4 3.0 to 9.2 2.5 to 6.7 3.5 to 7.2 1.0 to 8.2

						Female 15 Days to < 1 year Female 1 to < 10 years Female 10 to < 18 years Male 0 to < 15 Days Male 15 Days to < 1 year Male 1 to < 10 years Male 10 to < 18 years	1.2 to 6 3.2 to 7.9 2.6 to 6.8 1.0 to 8.2 1.2 to 6 3.2 to 7.9 2.6 to 7.5
Creatinine	Renal	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	µmol/L	Female Adult ≥ 18 years Female 0 to <15 days Female 15 days to <2 years Female 2 to <5 years Female 5 to <12 years Female 12 to < 15 years Female 15 to < 18 years Male Adult ≥ 18 years Male 0 to <15 days Male 15 days to <2 years Male 2 to <5 years Male 5 to <12 years Male 12 to < 15 years Male 15 to < 18 years	49 to 90 29 to 82 9 to 32 18 to 38 27 to 54 40 to 72 43 to 74 64 to 104 29 to 82 9 to 32 18 to 38 27 to 54 40 to 72 55 to 96
eGFR	Renal	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mL/min/1.73m2	≥18 years <18 years	60-150 90 to 150

IRON STUDIES/IBC PROFILE							
Iron	Iron Studies	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	µmol/L	Male Adult ≥ 18 years Female Adult ≥ 18 years Female 0 to < 14 years Female 14 to < 18 years Male 0 to < 14 years Male 14 to < 18 years	11.6 to 31.2 9.0 to 30.4 2.8 to 22.9 3.5 to 29.0 2.8 to 22.9 5.5 to 30.0
Ferritin	Iron Studies	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	ng/mL	Female Adult ≥ 18 years Female 4 to 14 Days Female 15 Days to < 6 Months Female 6 Months to < 1 year Female 1 to < 5 years Female 5 to < 14 years Female 14 to < 18 years Male Adult ≥ 18 years Male 4 to 14 Days Male 15 Days to < 6 Months Male 6 Months to < 1 year Male 1 to < 5 years Male 5 to < 14 years Male 14 to < 16 years Male 16 to < 18 years	4.6 to 204.0 99.6 to 717.0 14.0 to 647.2 8.4 to 181.9 5.3 to 99.9 13.7 to 78.8 5.5 to 67.4 21.8 to 274.7 99.6 to 717.0 14.0 to 647.2 8.4 to 181.9 5.3 to 99.9 13.7 to 78.8 12.7 to 82.8 11.1 to 171.9
TIBC	Iron Studies	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	µmol/L	All ages	45 to 91

Transferrin	Iron Studies	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mg/dL	Male 18 to 60 years Male 61 to 80 years Female 18 to 60 years Female 61 to 80 years 0 to < 9 Weeks 9 Weeks to < 1 year 1 to < 18 years	174 to 364 163 to 344 180 to 382 173 to 360 104 to 224 107 to 324 220 to 337
Transferrin Saturation	Iron Studies	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	%	Males ≥ 18 years Females ≥ 18 years Female 0 to < 1 year Female 1 to < 14 years Female 14 to < 18 years Male 0 to < 1 year Male 1 to < 14 years Male 14 to < 18 years	≤50 % ≤45 % 4.1 to 59 6.5 to 39 5.2 to 44 4.1 to 59 6.5 to 39 9.6 to 58
LH/FSH							
FSH	LH/FSH	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mIU/mL	Male Adult ≥ 18 years Adult Follicular Phase Adult Ovulatory Phase Adult Luteal Phase Adult Post-menopause Female 30 Days to < 1 year Female 1 to < 9 years Female 9 to < 11 years Female 11 to < 18 years	1.27 to 19.26 3.85 to 8.78 4.54 to 22.51 1.79 to 5.12 16.74 to 113.59 0.38 to 10.4 0.42 to 5.45 0.44 to 4.22 0.26 to 7.77

						Male 30 Days to < 1 year Male 1 to < 5 years Male 5 to < 10 years Male 10 to < 13 years Male 13 to < 18 years	0.09 to 2.41 0 to 0.91 0 to 1.62 0.35 to 3.91 0.78 to 5.1
LH	LH/FSH	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mIU/Ml	Male Adult ≥ 18 years Adult Follicular Phase Adult Mid-Cycle Adult Luteal Phase Adult Post-menopause Female 4 Days to < 3 Months Female 3 Months to < 1 year Female 1 to < 10 years Female 10 to < 13 years Female 13 to < 15 years Female 15 to < 17 years Female 17 to < 18 years Male 4 Days to < 3 Months Male 3 Months to < 1 year Male 1 to < 10 years Male 10 to < 13 years Male 13 to < 15 years Male 15 to < 17 years Male 17 to < 18 years	1.24 to 8.62 2.12 to 10.89 19.16 to 103.03 1.20 to 12.86 10.87 to 58.64 0 to 2.41 0 to 1.19 0 to 0.33 0 to 4.34 0.37 to 6.52 0 to 13.1 0 to 8.38 0.19 to 3.81 0 to 2.89 0 to 0.33 0 to 4.34 0 to 4.11 0.79 to 4.76 0.94 to 7.1

VITAMIN B12 & FOLATE FASTING PROFILE							
Vitamin B12	Vit12 & Folate Profile	5mL venous serum	Next working day	Specimens should be tested within 3 days of collection and stored at 2-8°C.	pg/ml	Adult ≥ 18 years 5 days to <1 year 1 year to < 9 years 9 to < 14 years 14 to < 17 years 17 to < 18 years	187 to 883 259 to 1576 283 to 1613 252 to 1125 244 to 888 203 to 811
Folate	Vit12 & Folate Profile	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	ng/mL	Adult ≥ 18 years 5 Days to < 1 year 1 to < 3 years 3 to < 6 years 6 to < 8 years 8 to < 12 years 12 to < 14 years 14 to < 18 years	3.1 to 20.0 10.6 to 45.3 3.9 to 45.3 11.9 to 45.3 13.1 to 45.3 11.4 to 45.3 11.9 to 45.3 7.9 to 45.3
TFT PROFILE							
TSH	TFT	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mIU/L	Adult ≥ 18 years 4 Days to < 6 Months 6 Months to < 14 Years 14 to < 18 Years	0.35 to 4.94 0.73 to 4.77 0.70 to 4.17 0.47 to 3.41
FT4	TFT	5mL venous serum	Next working day	Specimens should be tested within 6 days of collection and stored at 2-8°C.	pmol/L	Adult ≥ 18 years 0 to <1 year 1 to <18 years	9.01 to 19.05 10.5 to 18.8 9.98 to 14.29

CTD – Connective Tissue Disease Screen							
ANAB	CTD Screen	5mL venous serum	3 working days	Specimens should be tested within 7 days of collection and stored at 2-8°C.	IU/mL	N/A	Pos/Neg
DNAA	CTD Screen	5mL venous serum	3 working days	Specimens should be tested within 14 days of collection and stored at 2-8°C.	IU/mL	N/A	<10 Negative
ENA	CTD Screen	5mL venous serum	3 working days	Specimens should be tested within 14 days of collection and stored at 2-8°C.	IU/mL	N/A	Pos/Neg

Clinical Chemistry Analytes

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
25-OH Vitamin D2 and D3 (please include clinical indications on the patient test request form) per section 10.0 above	5mL venous serum	Next working day	Specimens should be tested within 3 days of collection and stored at 2-8°C.	nmol/L	Adult ≥ 18 years 5 to 14 Days 15 Days to < 3 Months 3 Months to < 1 year 1 to < 9 years 9 to < 14 years 14 to < 18 years	50 to 125 4.25 to 85 15.4 to 101 17.3 to 118 33.1 to 137 31.7 to 116 12 to 106
Adjusted Calcium	Calculation	Next working day	NA	Mmol/L	Adult ≥ 18 years	2.09-2.47
Alpha-fetoprotein (AFP)	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	ng/mL	Adult ≥ 18 years 0 to < 1 Month 1 to < 6 Months 6 Months to < 1 year 1 to < 18 years	0.89 to 8.78 0 to 2000 9.8 to 1359 0.4 to 103.1 0.8 to 34.8
Anti Mullerian Hormone (AMH)	5mL venous serum	Next working day	Specimens should be tested within 6 days of collection and stored at 2-8°C.	pmol/L	Female 18-25 years Female 26-30 years Female 31-35 years Female 36-40 years Female 41-45 years Female ≥ 46 years Female 0 to 28 days Female 29 days to <1 year	6.82 to 95.22 1.22 to 52.66 0.53 to 52.48 0.20 to 51.03 0.00 to 23.35 0.00 to 8.19 ≤ 6.7 ≤ 31.2

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
					Female 1 to <5 years Female 5 to <8 years Female 8 to <12 years Female 12 to <15 years Female 15 to <18 years Male 0 to 2 days Male 3 to 7 days Male 8 to 10 days Male 11 to 20 days Male 21-28 days Male 29 days to <1 year Male 1 to <5 years Male 5 to <8 years Male 8 to <12 years Male 12 to <15 years Male 15 to <18 years Males ≥ 18 years	1.3 to 43.7 1.4 to 39.5 2.9 to 52.8 3.0 to 46.6 2.1 to 84.1 68.0 to 523.7 138.3 to 1023.7 195.2 to 1200.9 140.1 to 1130.9 212.0 to 951.4 203.8 to 971.7 268.6 to 1229.9 206.2 to 956.5 84.0 to 976.4 8.8 to 286.8 16.8 to 130.0 5.20 to 114.60
Amylase	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	U/L	Adults 18-70 years Adults ≥70 years 1-18 years 13 weeks to <1 year 15 days to <13 weeks 0 to <15 days	25 to 125 20 to 160 25 to 101 3 to 50 2 to 22 3 to 10
Thyroid microsomal antibodies (Anti-TPO)	5mL venous serum	Next working day	Specimens must be spun within 8 hours and be tested within 3	IU/mL	0 to 150 years	< 5.61

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
			days of collection and stored at 2-8°C. Remove serum from clot or separator gel if testing will be delayed more than 8 hours.			
Anti-TG (Anti Thyroglobulin antibody)	5mL venous serum	Next working day	Specimens must be spun within 8 hours and be tested within 3 days of collection and stored at 2-8°C. Remove serum from clot or separator gel if testing will be delayed more than 8 hours.	IU/mL	Adult ≥ 18 years <18 years	< 4.11 0.4 to 17.7
AST	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	U/L	Adult > 18 years Female 0 to < 15 Days Female 15 Days to < 1yr Female 1 to < 7 years Female 7 to < 12 years Female 12 to < 18 years Male 0 to < 15 Days Male 15 Days to < 1 year	5 – 34 32 to 162 20 to 67 21 to 44 18 to 36 13 to 26 32 to 162 20 to 67

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
					Male 1 to < 7 years Male 7 to < 12 years Male 12 to < 18 years	21 to 44 18 to 36 14 to 35
Beta-HCG	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	IU/L	Adult ≥ 18 years Female 0-3 months Female > 3months to <18 yrs Male 0-3 months Male > 3months to <18 years	<5 ≤50 <1.0 ≤50 <1.4
Bicarbonate (CO2)	5mL venous serum or plasma	Next working day	Specimens must be tested within 3 days of collection and stored at 2-8°C.	Mmol/L	Adult ≥ 18 years Adult > 60 years Female 0 to <15 days Female 15 days to <1 year Female 1 to <5 years Female 5 to <15 years Female 15 to < 18 years Male 0 to <15 days Male 15 days to <1 year Male 1 to <5 years Male 5 to <15 years Male 15 to < 18 Years	22 to 29 23 to 31 5 to 20 10 to 24 14 to 24 17 to 26 17 to 26 5 to 20 10 to 24 14 to 24 17 to 26 18 to 28

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
CA-125	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	U/mL	Female ≥ 18 years Female 0 to < 4 Months Female 4 Months to < 5 years Female 5 to < 11 years Female 11 to < 18 years Male 0 to < 4 Months Male 4 Months to < 5 years Male 5 to < 11 years Male 11 to < 18 years	≤35.0 2.4 to 22 7.7 to 33 4.7 to 30 5.9 to 39 2.4 to 22 7.7 to 33 4.7 to 30 5.4 to 28
CA15-3	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	U/mL	Adult ≥ 18 years 0 to < 1 Week 1 Week to < 1 year 1 to < 18 years	≤31.3 3.4 to 24 4.9 to 33 3.9 to 21
CA19-9	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	U/mL	Adult ≥ 18 years 0 to < 1 year 1 to < 18 years	≤ 37 0 to 64 0 to 41
Calprotectin	QFIT	3-6 working days	Specimens should be tested within 28 days of collection and stored at 2-8°C.	ug/g	Adult ≥ 18 years	<50 ug/g 50-250 ug/g 100 - 250 ug/g >250 ug/g

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
Carbamazepine	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mg/L	Adults ≥ 18 years	In combination with other anti convulsants: 4-8mg/L If prescribed on its own 6-12mg/L
Carcinoembryonic Antigen (CEA)	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C. Specimens Should be tested within 24 hours if unspun.	ng/ml	Adult ≥ 18 years 0 to < 1 Week 1 Week to < 2 years 2 to < 18 years	≤5.00 8.1 to 62 8.1 to 62 0 to 2.6
Creatinine Kinase (CK)	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	U/L	Male Adult ≥ 18 years Female Adult ≥ 18 years <18 years	30 to 200 29 to 168 25 to 300
Cortisol	5mL venous serum	Next working day	Specimens must be spun within 8 hours and tested within 7 days of collection and stored at 2-8°C. Remove serum from clot or	nmol/L	Adult ≥ 18 Before 10am collection Adult ≥ 18 After 5pm collection 2 to < 15 Days 15 Days to < 1 year 1 to < 9 years 9 to < 14 years	102.1 to 535.2 80.0 to 477.3 13.1 to 339.5 14.3 to 458.1 47.8 to 297 60.5 to 349.2

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
			separator gel if testing will be delayed more than 8 hours.		14 to < 17 years 17 to < 18 years	76.9 to 452.5 97 to 505.7
Digoxin	5mL venous serum SST	1-2 working days	Specimens should be tested within 14 days of collection and stored at 2-8°C.	ug/L	Adult ≥ 18 years	0.5-2.0
Folate	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	ng/mL	Adult ≥ 18 years 5 Days to < 1 year 1 to < 3 years 3 to < 6 years 6 to < 8 years 8 to < 12 years 12 to < 14 years 14 to < 18 years	3.1 to 20.0 10.6 to 45.3 3.9 to 45.3 11.9 to 45.3 13.1 to 45.3 11.4 to 45.3 11.9 to 45.3 7.9 to 45.3

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
FSH	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mIU/mL	Male Adult ≥ 18 years Adult Follicular Phase Adult Ovulatory Phase Adult Luteal Phase Adult Post-menopause Female 30 Days to < 1 year Female 1 to < 9 years Female 9 to < 11 years Female 11 to < 18 years Male 30 Days to < 1 year Male 1 to < 5 years Male 5 to < 10 years Male 10 to < 13 years Male 13 to < 18 years	1.27 to 19.26 3.85 to 8.78 4.54 to 22.51 1.79 to 5.12 16.74 to 113.59 0.38 to 10.4 0.42 to 5.45 0.44 to 4.22 0.26 to 7.77 0.09 to 2.41 0 to 0.91 0 to 1.62 0.35 to 3.91 0.78 to 5.1
FT3 Free T3	5mL venous serum	Next working day	Specimens must be tested within 6 days of collection and stored at 2-8°C.	Pmol/L	Adult ≥ 18 years Female 4 Days to < 1 year Female 1 to < 12 years Female 12 to < 15 years Female 15 to < 18 years Male 4 Days to < 1 year Male 1 to < 12 years Male 12 to < 15 years Male 15 to < 18 years	2.43 to 6.00 3.56 to 7.48 4.29 to 6.79 3.84 to 6.06 3.55 to 5.7 3.56 to 7.48 4.29 to 6.79 4.44 to 6.65 3.46 to 5.92

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
Glucose	5mL venous sodium fluoride/potassium oxalate plasma	Next working day	Specimens Should be tested within 7 days of collection and stored at 2-8°C.	mmol/L	Fasting Adult ≥ 18 years Fasting <4 weeks Fasting 4 weeks to <18 years	4.0 to 7.0 2.5 to 5.5 3.0 to 6.0
Glucose Tolerance	X2 5mL venous sodium fluoride/potassium oxalate plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mmol/L	Two-hour plasma glucose concentration two hours after 75g anhydrous glucose in an oral glucose tolerance test (OGTT) Gestational Diabetes	Normal <7.8 Impaired glucose tolerance 7.8-11.1 Diabetes >11.1
Haemochromatosis Genetic Screen	EDTA 4ml/6ml (6ml EDTA tubes are used for specific PCR assays). Clinical History must be provided.	1 – 4 working days	Specimens must be tested within 14 days of collection.	N/A	N/A	N/A
HbA1c	5mL Whole blood EDTA	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mmol/mol	Adults ≥ 18 years <18 years	<42 20 to 42

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
High Sens. CRP	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mg/L	Adult ≥ 18 years 0 to <15 days 15 days to < 15 years 15 to <18 years	≤5 0.3 to 6.1 0.1 to 1 0.1 to 1.7
LDH	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	U/L	Adult ≥ 18 years Female 0 to < 15 Days Female 15 Days to < 1 year Female 1 to < 10 years Female 10 to < 15 years Female 15 to < 18 years Male 0 to < 15 Days Male 15 Days to < 1 year Male 1 to < 10 years Male 10 to < 15 years Male 15 to < 18 years	125 to 220 309 to 1222 163 to 452 192 to 321 157 to 272 130 to 250 309 to 1222 163 to 452 192 to 321 170 to 283 130 to 250
Lithium	5mL venous serum or plasma (Sodium heparin K2 EDTA)	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mmol/L	Trough Toxicity	1.00 to 1.20 0.6 to 1.50
Magnesium	5mL venous serum or plasma	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mmol/L	18-20 years Adult > 20 years 0 to < 15 Days 15 Days to < 1 year 1 to < 18 years	0.7 to 0.91 0.66 to 1.07 0.82 to 1.62 0.81 to 1.27 0.86 to 1.17
Microalbumin	Urine (MSU)	Next working day	Specimens should be tested	mg/L	0 to 150 years	<30

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
			within 6 days of collection and stored at 2-8°C.			
Oestradiol	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	pmol/L	Male ≥18 years Adult Follicular Phase Adult Ovulatory Phase Adult Luteal Phase Adult Post-menopause Female 15 days to <1 year Female 1 to < 9 years Female 9 to < 11 years Female 11 to < 12 years Female 12 to < 14 years Female 14 to < 18 years Male 15 days to < 1 year Male 1 to < 11 years Male 11 to < 13 years Male 13 to < 15 years Male 15 to < 18 years	88 to 161.52 88 to 921.42 139.50 to 2382.48 88 to 1145.35 88 to 102.79 0 to 25 0 to 10 0 to 48 0 to 94 11 to 172 0 to 255 0 to 25 0 to 13 0 to 26 0 to 28 0 to 38
Phenytoin	5mL venous serum SST	1-2 working days	Specimens should be tested within 4 days of collection and stored at 2-8°C.	mg/l	Adult ≥ 18 years	40-80mg/l
Potassium*	5mL venous serum	Next working day if centrifuged at	Sample must be centrifuged at	mmol/L	Adult ≥ 18 years Serum Adult ≥ 18 years Male Plasma	3.5 to 5.1 3.5 to 4.5

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
		3500rpm for 10 minutes within 4 hours of sample collection	3500rpm for 10 minutes It is critical to include the following details on the PRF (Patient Request Form) to ensure the sample meets testing criteria: • Centrifuge Speed (3500rpm) • Centrifuge Duration (10 minutes) • Time of Centrifugation (specific time the centrifugation process was completed)		Adult ≥ 18 years Female Plasma <18 years Serum	3.4 to 4.4 3.5 to 5.5
Pro-BNP*	5mL venous serum	Next working day	Specimens must be spun within 24 hours and tested within 6 days of collection	pg/ml	Adult ≥ 75 years Adult<75 years <18 years	≤ 125.0 ≤ 450.0 ≤ 300

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
			and stored at 2-8°C. Remove serum from clot or separator gel if testing will be delayed more than 24 hours..			
Progesterone	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	nmol/L	Male Adult ≥ 18 years Follicular Phase Luteal Phase Post-menopause 1st Trimester Pregnancy 2nd Trimester Pregnancy 3rd Trimester Pregnancy Female 4 Days to < 1 year Female 1 to < 10 years Female 10 to < 15 years Female 15 to < 18 years Male 30 Days to < 1 year Male 1 to < 10 years Male 10 to < 15 years Male 15 to < 18 years	<1.60 <1.60 3.82 to 50.56 <1.60 8.90 to 468.41 71.55 to 303.05 88.72 to 771.15 0 to 4.2 0 to 1.1 0.4 to 2.7 0.64 to 32.62 0 to 2.1 0 to 1.1 0.4 to 2.7 0.5 to 1.8
Prolactin	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mIU/L	Males ≥ 18 years Females ≥ 18 years 0 to <1 year 1 to <18 years	72.66 to 407.40 108.78 to 557.13 115 to 1342 72 to 592

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
			Early morning or fasting specimens are preferable			
TPSA	5mL venous serum	Next working day	Specimens should be tested within 7 day of collection and stored at 2-8°C.	ng/mL	Adult <50 years 50-59 years 60-69 years ≥ 70 years Female 0 to < 1 Week Female 1 Week to < 1 year Female 1 to < 18 years Male 0 to < 1 Week Male 1 Week to < 6 Months Male 6 Months to < 12 years Male 12 to < 18 years	< 2.00 <3.00 <4.00 <5.00 0 to 0.039 0 to 0.01 0 to 0.015 0 to 0.047 0 to 0.038 0 to 0.353 0 to 0.566
Rheumatoid Factor	5mL venous serum	Next working day	Specimens should be tested within 8 days of collection and stored at 2-8°C.	IU/mL	Adult ≥ 18 years	<14.0 IU/mL
Uric Acid (Urate)	5mL venous serum or plasma	Next working day	Specimens should be tested within 3 days of collection and stored at 2-8°C.	µmol/L	Male Adult ≥ 18 years Female Adult ≥ 18 years Female 0 to < 15 Days Female 15 Days to < 1 year Female 1 to < 12 years Female 12 to < 18 years Male 0 to < 15 Days Male 15 Days to < 1 year	220 to 450 150 to 370 164 to 757 94 to 377 106 to 289 153 to 349 164 to 757 94 to 377

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
					Male 1 to < 12 years Male 12 to < 19 years	106 to 289 156 to 454
Urinary Creatinine	Urine – 30ml aliquot from 24 hr collection – state total volume	Next working day	Specimens should be tested within 6 days of collection and stored at 2-8°C.	umol/L	Male Adult ≥ 18 years Female Adult ≥ 18 years	5.1-14.2mmol/L (1st morning urine) 3.9-9.4mmol/L (1st morning urine)
Urinary Protein	Urine – 30ml aliquot from 24 hr collection – state total volume	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	g/L, g/24hr	Adult ≥ 18 years	10-140 mg/24hr
Valproic Acid (Valproate)	5mL venous serum SST	1-2 working days	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mg/L	Adult ≥ 18 years	50-100mg/L
Sex Hormone Binding Globulin	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	nmol/L	Female ≥ 18 years Female 4 Days to < 1 Month Female 1 Month to < 1 year Female 1 to < 8 years Female 8 to < 11 years Female 11 to < 13 years Female 13 to < 15 years Female 15 to < 17 years Female 17 to < 18 years	19.8 to 155.2 14.4 to 120 36.2 to 229 41.8 to 189 26.4 to 162 14.9 to 108 11.2 to 98.2 9.8 to 84.1 10.8 to 155

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
					Male 4 Days to < 1 Month Male 1 Month to < 1 year Male 1 to < 8 years Male 8 to < 11 years Male 11 to < 13 years Male 13 to < 15 years Male 15 to < 18 years Male ≥ 18 years	14.4 to 120 36.2 to 229 41.8 to 189 26.4 to 162 14.9 to 108 11.2 to 98.2 9.7 to 49.6 13.5 to 71.4
Testosterone	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	nmol/L	Male 18 to 49 years Male ≥ 50 years Female 18 to 49 years Female ≥ 50 years Female 4 Days to < 9 years Female 9 to < 13 years Female 13 to < 15 years Female 15 to < 18 years Male 4 Days to < 6 Months Male 6 Months to < 9 year Male 9 to < 11 years Male 11 to < 14 years Male 14 to < 16 years Male 16 to < 18 years	8.33 to 30.19 7.66 to 24.82 0.48 to 1.85 0.43 to 1.24 0.04 to 2.15 0 to 0.98 0.36 to 1.54 0.49 to 1.7 0.3 to 10.4 0 to 1.24 0 to 0.81 0 to 15.4 1.25 to 21.9 5.13 to 27.6
Protein/Creatinine Ratio	As above. Random Urine.	Next working day	Specimens should be tested within 6 days of collection and stored at 2-8°C.	mg/mmol	Adult ≥ 18 years	0-45mg/mmol

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
Microalbumin/Creatinine Ratio	As above. Random Urine.	Next working day	Specimens should be tested within 6 days of collection and stored at 2-8°C.	mg/mmol	Adult ≥ 18 years	0-2.9mg/mmol
Androstenedione	5mL venous serum	1-6 working days	Specimens should be tested within 7 days of collection and stored at 2-8°C.	nmol/L	Adult ≥ 18 years	Male 1.5 - 6.5 Female 0.0 - 10.1
Phenobarbitone	5mL venous serum	1-2working days	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mg/L	Adult ≥ 18 years	10-30mg/L
Theophylline	5mL venous serum	1-2 working days	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mg/L	Age 0 - 30d Other	28 - 70 55 - 111
Carbenamazapine	5mL venous serum	1-2 working days	Specimens should be tested within 7 days of collection and stored at 2-8°C.	mg/L	N/A	In combination with other anti convulsants: 4-8mg/L If prescribed on its ownL 6-12mg/L -

OLOLHD Ref.	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
						Should be managed according to local guidelines

* Time-sensitive tests that must be performed in accordance with testing protocols.

Haematology Analytes

Test	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
Coagulation Screen* (PT/INR)	Sodium Citrate Plasma	Next working day	Specimens should be tested within 24 hours of collection and stored at room temperature.	Seconds	Up to 5yrs 5 to 10yrs 10 to 16yrs 17 to 99yrs	**PT** 10.6 – 11.4 10.1 – 12.1 10.2 – 12.0 10.8 – 13.9
INR*	Sodium Citrate Plasma	Next working day	Specimens should be tested within 24 hours of collection and stored at room temperature.	Ratio	0 – 99 yrs	**INR** Non anticoagulated 1.0-1.3
ESR*	Whole blood EDTA	Next working day	Specimens should be tested within 24 hours of collection and stored at 2-8°C.	mm/hr	<16 years Male 17- 70 yrs	1- 13mm/hr ≤ 15mm/hr ≤ 20mm/hr

Test	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
			Specimens over 24hrs and under 48hrs can be tested but will be reported with a test comment.		Female 17- 70 years Male > 70 Female > 70	 ≤ 30mm/hr ≤ 35mm/hr
FBC & Differential	Whole blood EDTA	Next working day	Specimens should be tested within 3 days of collection and stored at 2-8°C.	<u>Parameter</u> Red Blood Count (10^12/L) Haemoglobin (g/dL) Haematocrit (L/L) Mean Cell Volume (fL) Mean cell haemoglobin (pg) Mean cell haemoglobin concentration (g/dL)	Adults >18 yrs	<u>Adult Male</u> <u>Adult Female</u> 4.5-5.5 3.8-4.8 13.0-17.0 12.0-15.0 0.40-0.50 0.36-0.46 <u>Male and Female (>18)</u> 83-101 27-32 31.5-34.5

Test	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
				Red-cell distribution width (%)		11.6-14
				Red-cell distribution width (fL)		39-46
				Platelet count (10^9/L)		150-410
				White blood cell count (10^9/L)		4.0-10.0
				Neutrophil count (10^9/L)		2.0-7.0
				Lymphocyte count (10^9/L)		1.0-3.0
				Monocyte		

Test	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
				count (10^9/L)		0.2-1.0
				Eosinophil count (10^9/L)		0.02-0.5
				Basophil count (10^9/L)		0.02-0.1
				Reticulocyte count (10^9/L)		50-100
				NRBC count (10^9/L)		0
				Neutrophil percent (%)		40-80
				Lymphocyte percent (%)		20-40
				Monocyte percent (%)		2.0-10.0

Test	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
				Eosinophil percent (%) Basophil percent (%) Reticulocyte percent (%) NRBC percent (%)		1.0-6.0 0.01-2.0 0.5-2.5 0
Blood Film	Whole blood EDTA	1-3 working days from FBC result	Specimens should be tested within 24 hours of collection and stored at 2-8°C.	N/A	All ages	N/A
Ferritin	5mL venous serum	Next working day	Specimens should be tested within 7 days of collection and stored at 2-8°C.	ng/mL	See test specific ranges	See test specific ranges
Sickle Cell Screen/Thalassaemia	Whole blood EDTA	1-5 working days	Specimens should be tested within 7 days of collection and stored at 2-8°C.	Qualitative (%, pg, fL, and x10^12/L)	See appendix 2.1	See appendix 2.1

Test	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
G6PD	5ml EDTA Plasma	1-5working days	Specimens should be tested within 7 days of collection and stored at 2-8°C.	U/g Hb	Adult ≥ 18 years	5.6 - 11.2 U/g Hb
Infectious Mononucleosis (Monospot)	5ml EDTA Plasma	Next working day	Specimens should be tested within 6 days of collection and stored at 2-8°C.	Detected/ Not Detected/ Invalid	NA	NA

*Time-sensitive tests that must be performed in accordance with testing protocols.

Immunology Analytes

Test	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
Tissue Transglutaminase antibody (TTG IgA)	5mL venous serum	1-3 working days	Specimens should be tested within 14 days of collection and stored at 2-8°C.	U/mL	N/A	0U/mL-10U/mL Coeliac disease unlikely (please note that if the patient has no dietary gluten results may appear false negative. Consistent with coeliac disease
Tissue Transglutaminase antibody (TTG IgG TAAG)	5mL venous serum	1-5 working days	Specimens should be tested within 14 days at ambient room temperature.	Index	N/A	<1.0
Protein Electrophoresis IgA/IgG/IgM	5mL venous serum	1-66working days	Specimens should be tested within 2 days of collection and stored at 20-25°C. In EMQM002 User manual under Analyte Serum Protein electrophoresis - Specimens must be tested within 10 days of collection and stored at 2-8°C or within 5 days of collection and stored at room temperature. Information to be updated.	g/L	**Albumin** Age 3d Age 13 Age 17 Over **Globulin** **IgA** Age 1 Age 3 Age 9 Age 13	 28 - 44 38 - 54 32 - 45 34 – 50 19 - 35 0.00 - 0.83 0.20 - 1.00 0.30 - 3.00 0.50 - 3.60

Test	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
					Age 19 Over >19 **IgG** Age 11m Age 3 Age 6 Age 9 Over >9 **IgM** Age 3 Age 9 Age 13 Age 19 Over >19 **Paraprotein** **Protein** **Protein Immunofix**	0.50 - 3.50 0.70 - 4.00 2.3 - 14.1 4.5 - 9.2 5.0 - 14.6 5.7 - 14.7 7.0 - 16.0 0.0 - 1.50 0.20 - 2.10 0.30 - 2.4 0.20 - 2.6 0.40 - 2.30 - Detected/Not detected 63 - 83 Detected/not detected

Test	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
Animal Disorders – Dog and Cat Dander(allergy) *(only 3 allergy tests per sample across all allergens)*	5mL venous serum	1-3 working days	Venous blood specimens should be tested within 7 days of collection and stored at 2-8°C.	kIU/l	N/A	Allergy Grading
House dust mite (allergy) *(only 3 allergy tests per sample across all allergens)*	5mL venous serum	1-3 working days	Venous blood specimens should be tested within 7 days of collection and stored at 2-8°C.	kIU/l	N/A	Allergy Grading
Peanut Allergy *(only 3 allergy tests per sample across all allergens)*	5mL venous serum	1-3 working days	Venous blood specimens should be tested within 7 days of collection and stored at 2-8°C.	kIU/l	N/A	Allergy Grading
Mixed Grass pollen (allergy) *(only 3 allergy tests per sample across all allergens – Please see the list of allergens below. If you require testing for allergens not listed, please contact Enfer Medical."* - *Sweet Vernal Grass* - *Bermuda Grass* - *Cocksfoot*	5mL venous serum	1-3 working days	Venous blood specimens should be tested within 7 days of collection and stored at 2-8°C.	kIU/l	N/A	Allergy Grading

Test	Specimen Type	Turnaround Time	Stability and Storage	Units	Demographics	Reference Range
Anti-CCP	5mL venous serum	1-3 working days	Venous blood specimens should be tested within 14 days of collection and stored at 2-8°C.	U/mL	N/A	<7 U/mL : Negative 7/10 U/mL : Equivocal >10 U/mL : Positive
Intrinsic Factor	5mL venous serum SST	1-3 working days	Venous blood specimens should be tested within 7 days of collection and stored at 2-8°C.	U/mL	N/A	0-6 u/ml
Anti-parietal cell screen	5mL venous serum SST	1-3 working days	Venous blood specimens should be tested within 2 days of collection and stored at 2-8°C.	N/A	N/A	N/A
ANCA – Vasculitis screen only	5mL venous serum SST	1-3 working days	Venous blood specimens should be tested within 7 days of collection and stored at 2-8°C.	N/A	N/A	N/A

Microbiology Analytes

Test	Specimen Type	Turnaround Time	Stability and Storage
C&S (Urine)	Female and male MSU or CSU, urine minimum volume 10ml in urine monovette ideally containing boric acid.	1-3 working days depending on +/-	Specimens should be tested within 7 days of collection and stored at 2-30°C prior to testing. Specimens collected in a non monovette device without boric acid - should be delivered to the laboratory and transferred to a monovette tube within 7 days of collection.

Test	Specimen Type	Turnaround Time	Stability and Storage
C&S (Swab)	eSwab with regular flock swab used for collection of material from eye, ear, mouth, throat, nose, high- vaginal, superficial wound and deep wound sites MRSA Dual eSWAB White Cap used for collection of swabs from nasal and groin sites for MRSA screening Gel amies swabs used for collection of material from eye, ear, mouth, throat, nose, high-vaginal, superficial wound and deep wound swab sites. Can also be used for MRSA, VRE, CPE screens.	2-3 days depending on +/- result.	Specimens should be delivered to the laboratory within 7 days.
Faeces O,C&P (PCR preferable)	Random Faeces *Separate sample should be provided for this test.*	3-5 working days	Specimens should be tested within 2 days of collection and stored at 2-8°C.
Stool Investigation: Routine Bacteria/Bacterial Toxins: Salmonella, Campylobacter, Shigella, VTEC	Random Faeces	5 working days	Specimens should be tested within 2 days of collection and stored at 2-8°C.
Stool Investigation: Extended	Random Faeces	4 working days	Specimens should be tested within 2 days of collection and stored at 2-8°C.

Test	Specimen Type	Turnaround Time	Stability and Storage
Bacteria and Bacterial Toxins C. difficile Toxin A/B gene, Campylobacter spp., Enteroaggregative E.coli (EAEC), Enteroinvasive E.coli (EIEC)/Shigella, Enterotoxigenic E.coli (ETEC), Enteropathogenic E.coli (EPEC), Plesiomonas shigelloides, Salmonella, Shiga-toxin producing E.coli (STEC) stx1/stx2, Shiga-toxin producing E.coli (STEC) O157:H7, Vibrio cholerae, Vibrio parahaemolyticus, Vibrio vulnificus, Yersinia enterocolitica **Viruses** Adenovirus 40/41, Astrovirus, Norovirus GI, Norovirus GII, Rotavirus A, Sapovirus (I, II, IV, V)			

Test	Specimen Type	Turnaround Time	Stability and Storage
Fungal Culture	Specimens should be collected into folded paper squares secured and placed in a plastic bag or in commercially available packets designed specifically for the collection and transport of skin, nail and hair specimens.	3-8 working days	Specimens should be kept at ambient room temperature and transported and processed as soon as possible although, provided the specimens are kept dry, the fungus will remain viable for 14 days.
Stool Investigation Helicobacter Pylori Antigen	Random Faeces *A separate sample should be provided for this test.*	3-4 working days	Specimens should be tested within 3 days of collection and stored at 2-8°C.
Syphilis Serology Screen	5mL venous serum or plasma	Next working day	Venous blood specimens should be tested within 72 hours of collection hours if stored at room temperature. Venous blood specimens should be tested within 7 days of collection if stored at 2- 8°C.
Urine Chlamydia & Gonorrhoea	Female and male urine specimens, with a final volume between the black fill lines of an Aptima urine specimen transport tube.	Next working day	Specimens should be tested within 30 days of collection and stored at 2-30°C prior to testing. Specimens collected in a non-Aptima collection device should be delivered to the laboratory and transferred to an Aptima tube within 24 hours of collection. First Catch Urine (FCU) technique should be applied in order to maximise chances of a positive specimen (due to overnight accumulation of organisms in the urethra).
STI screen (syphilis, HIV, HBsAg)	5mL venous serum or plasma	Next working day	Venous blood specimens should be tested within 14 days of collection and stored at 2-8°C.
Viral Hepatitis B & C screen (HBsAg + anti-HCV)	5mL venous serum or plasma	Next working day	Venous blood specimens should be tested within 14 days of collection and stored at 2-8°C.

Test	Specimen Type	Turnaround Time	Stability and Storage
Hepatitis B Infection status: (HBsAg, anti-HBc)	5mL venous serum or plasma	Next working day	Venous blood specimens should be tested within 14 days of collection and stored at 2-8°C.
Hepatitis A IgG (HAV IgG)	5mL venous serum	1-2 working days	Venous blood specimens should be tested within 14 days of collection and stored at 2-8°C.
Hepatitis B surface Antigen (HBsAg)	5mL venous serum or plasma	Next working day	Venous blood specimens should be tested within 14 days of collection and stored at 2-8°C.
Hepatitis B surface Antibody (Post vaccination) - AHBs	5mL venous serum or plasma	Next working day	Venous blood specimens should be tested within 14 days of collection and stored at 2-8°C.
Hepatitis C Antibody (anti-HCV core IgG)	5mL venous serum or plasma	Next working day	Venous blood specimens should be tested within 7 days of collection and stored at 2-8°C.
Hepatitis C PCR (HCV RNA; current infection)	2 x EDTA	1-4 working days	Venous blood specimens must be tested in the laboratory within two days of sample collection.
HIV Ag/Ab Combo assay	5mL venous serum or plasma	Next working day	Venous blood specimens should be tested within 14 days of collection and stored at 2-8°C.
Herpes Simplex Virus PCR	Aptima multisite swab/Urine	5-6 working days	Venous blood specimens should be tested within 2 days of collection and stored at 2-8°C.
Varicella Zoster Virus (VZV) IgG (Immune status)	5mL venous serum	1-3 working days	Specimens should be tested within 7 days of collection and stored at 2-8°C.
Measles/Mumps/Rubella IgG screen	5mL venous serum	1-3 working days	Specimens should be tested within 7 days of collection and stored at 2-8°C.

Test	Specimen Type	Turnaround Time	Stability and Storage
Mycobacterial Investigation TB/ TB Culture	Sputum in 60ml Sterile Container	Up to 8 weeks	Specimens should be tested within 3 days of collection and stored at 2-8°C. Stable 72 hours max, best kept refrigerated. Transport ambient urgently.
Individual serology screens (HIV, Hep B, Hep C, Hep A)	See individual test information above.	See individual test information above.	See individual test information above.
Individual Molecular screens (HSV PCR)	Aptima multisite swab/urine	2-5 working days.	Specimens should be tested within 7 days of collection and stored at 2-8°C.

APPENDIX 2.1: Sickle Cell Screen/Thalassaemia Demographics and Reference Range

TFC	TFC Description	Range	Units
ARHB	Haemoglobin F	0-1	%
HA2	Haemoglobin A2	1.5-3.5	%
HBC	Haemoglobin C	N/A	%
HBCO	Conclusion:	N/A	
HBDB	Haemoglobin D	N/A	
HBEC	Haemoglobin phenotype	N/A	

HBGL	HAEMOGLOBIN (g/L)	Age - 2d - 135-195 4d - 145 - 225 8d - 135-215 21d - 125-205 1m - 100-180 2m - 90-140 2 - 100 - 135 3 - 105 - 135 7 - 115 - 145 13 - 115 - 155 Gender - f - 115 - 155 m - 130 - 170 u - 115 - 170	g/L
HBS	Haemoglobin S	N/A	%
HBX	Haemoglobin E	N/A	%

HCT	HCT	Age - 1d - 0.42 - 0.6 4d - 0.45 - 0.67 8d - 0.42 - 0.66 21d - 0.39 - 0.63 1m - 0.31 - 0.55 2m - 0.28 - 0.42 3m - 0.29 - 0.41 3 - 0.33 - 0.39 13 - 0.35 - 0.45 Gender - f - 0.33 - 0.45 m - 0.37 - 0.5 u - 0.33 - 0.5	
HGSC	Haemoglobin S plus C	N/A	%
HGSD	Haemoglobin S plus D	N/A	%
HPLC	Haemoglobin A0	N/A	%
MCH	MCH	Age - 4d - 31 - 37 1m - 28-40 2m - 26-34 3m - 25-35 3 - 23-31 13 - 25-33 Unk - 27-33.5	pg

MCV	MCV	Age - 2d - 97-118 4d - 95-121 8d - 88-126 21d - 86-124 1m - 85-123 2m - 77-115 3m - 74-118 3 - 70-86 7 - 75-87 13 - 77-94 Unk - 80-99	fL
RBC	RED CELL COUNT	Age - 2d - 3.9-5.3 4d - 4-6.6 8d - 3.9 - 6.3 21d - 3.6-6.2 1m - 3-5.4 2m - 2.7-4.9 3m - 3.1 - 4.5 3 - 3.7 - 5.3 7 - 3.9-5.3 13 - 4-5.2 Gender - f - 3.95 - 5.15 m - 4.4-5.8 u - 3.95 - 5.8	x10^12/L

APPENDIX 3: Specimen receipt anomalies (Specimen receipt anomaly protocol and codes)

Reason for SRA	SRA Code	Comment
Unlabelled Specimen* **(Will NOT be tested)**	SRA_NL	We have received a request form for the above patient. However, the accompanying specimen was not labelled. Testing will **NOT** proceed. Please send a repeat specimen if clinically indicated.
Insufficient identifiers* **(Will NOT be tested)**	SRA_OP1	Please note that the specimen received was not labelled with the minimum requirement of three patient identifiers. Testing will **NOT** proceed. To prevent patient identification errors please ensure all request forms are completed with a minimum of 3 patient identifiers which match the specimen.
Form not Complete* **(Will NOT be tested)**	SRA_FNC	Please note, the request form received for this patient was not fully completed. Testing will **NOT** proceed. To prevent patient identification errors please ensure all request forms are completed with a minimum of 3 patient identifiers which match the specimen.

Reason for SRA	SRA Code	Comment
Discrepant DOB* **(Will be tested, hold until patient details are confirmed)**	SRA_DDB	Please confirm patient Date of Birth. DOB on specimen: DOB on request form:
Discrepant Name* **(Will be tested, hold until patient details are confirmed)**	SRA_DPN	Please confirm patient name Name on specimen: Name on request form:
Gender unknown **(Will be tested, hold until patient details are confirmed)**	SRA_GEN	Please confirm patient gender.
No specimen received* **(Will NOT be tested)**	SRA_NSR	A form was received for the above patient. However, there was no accompanying specimen. Testing will **NOT** proceed.
Unlabelled Specimen* **(Will NOT be tested)**	SRA_NL	We have received a request form for the above patient. However, the accompanying specimen was not labelled. Testing will **NOT** proceed. Please send a repeat specimen if clinically indicated.

Reason for SRA	SRA Code	Comment
Insufficient identifiers* **(Will NOT be tested)**	SRA_OP1	Please note that the specimen received was not labelled with the minimum requirement of three patient identifiers. Testing will **NOT** proceed. To prevent patient identification errors please ensure all request forms are completed with a minimum of 3 patient identifiers which match the specimen.
Form not Complete* **(Will NOT be tested)**	SRA_FNC	Please note, the request form received for this patient was not fully completed. Testing will **NOT** proceed. To prevent patient identification errors please ensure all request forms are completed with a minimum of 3 patient identifiers which match the specimen.
Discrepant DOB* **(Will be tested, hold until patient details are confirmed)**	SRA_DDB	Please confirm patient Date of Birth. DOB on specimen: DOB on request form:
Discrepant Name* **(Will be tested, hold until patient details are confirmed)**	SRA_DPN	Please confirm patient name Name on specimen: Name on request form:
Gender unknown **(Will be tested, hold until patient details are confirmed)**	SRA_GEN	Please confirm patient gender.

Reason for SRA	SRA Code	Comment
No specimen received* **(Will NOT be tested)**	SRA_NSR	A form was received for the above patient. However, there was no accompanying specimen. Testing will **NOT** proceed.
Compromised specimen. **(Will be tested, confirm with client and consultant)**	SRA_ Com_Tested	This specimen has been compromised. Please interpret the results with caution.
No Form Received* **(Will NOT be tested)**	SRA_SNF	Please note, no request form was received with the specimen for this patient. Please send a repeat specimen and request form for testing if clinically relevant. Testing will **NOT** proceed.
Specimen Leaked* **(Will NOT be tested)**	SRA_LK	The specimen received for the above patient has LEAKED IN TRANSIT. This specimen will **NOT** be tested. Please send a repeat specimen if clinically indicated.
Specimen Date* **(Will NOT be tested)**	SRA_SDT	The collection date on the specimen received exceeds the time period for testing. This specimen will **NOT** be tested. Please send a repeat specimen if clinically indicated.
Specimen Stability **(Will NOT be tested)**	SRA_STAB	The specimen received for the above patient was beyond its stability. Please send a repeat specimen if clinically indicated.

Reason for SRA	SRA Code	Comment
Incorrect collection device used. **(Will NOT be tested)**	SRA_SC	The specimen received for this patient was collected in the incorrect collection device. This specimen will **NOT** be tested. Please send a repeat specimen if clinically indicated.
Matching request form/specimen received* **(Will NOT be tested)**	SRA_SCF	This specimen was received with a matching request form, however a second specimen for a different patient was also within the package. As we are unable to confirm the provenance of the specimen, testing will **NOT** proceed. Please send a repeat specimen if clinically indicated.
Matching request form/specimen received* **(Will NOT be tested)**	SRA_SIF	The specimen received for the above patient was received with a matching request form however a second form for a different patient was also received. As we are unable to confirm the provenance of this specimen, testing will **NOT** proceed. Please send a repeat specimen if clinically indicated.
Insufficient specimen **(Will NOT be tested)**	SRA_INS	Insufficient specimen for testing. Testing will **NOT** proceed.
Expired Collection Device* **(Will NOT be tested)**	SRA_EXP _/_/_	The specimen received for the above patient was collected in an expired device. This specimen will **NOT** be tested. Please send a repeat specimen if clinically indicated.
Duplicated Specimen* **(Will NOT be tested)**	SRA_DUP	Duplicate specimens and PRF forms were received for this patient, the PRFs were dated with differing request times. We are unable to process these

Reason for SRA	SRA Code	Comment
		specimens as the origin of the specimen cannot be confirmed. Please send a repeat specimen if clinically indicated.
Process Error **(Will NOT be tested)**	SRA_PE	We apologise that this specimen could **NOT** be tested due to a laboratory processing error. Please send a repeat specimen if clinically indicated.
Specimen Mismatch (Specimen received with form for another patient)* **(Will NOT be tested)**	SRA_MMAT	The specimen for the above-named patient was received with a request form for a different patient. Testing will **NOT** proceed. Please send a repeat specimen if clinically indicated.
Specimen Leaked* **(Will be tested)**	SRA_MESS	The outside of the tube containing this specimen was contaminated, posing a *** POTENTIAL RISK OF INFECTION*** Testing will proceed. Please ensure that this does not occur in the future.
Damaged Label **(Will NOT be tested)**	SRA_DAML	The specimen(s) received for this patient had a damaged label on the collection device and the patient information cannot be confirmed. Testing will **NOT** proceed. Please send a repeat specimen if clinically indicated.
Damaged collection device **(Will NOT be tested)**	SRA_DAMCD	The specimen for this patient was received in a damaged collection device. Testing will **NOT** proceed. Please send a repeat specimen if clinically indicated.
Empty collection device **(Will NOT be tested)**	SRA_ECD	A request form was received for the above patient however, the accompanying collection device was empty. Testing will **NOT** proceed. Please send a repeat specimen if clinically indicated.

Reason for SRA	SRA Code	Comment
Undetermined content **(Will NOT be tested)**	SRA_UDC	We received a specimen for this patient however, the laboratory could not determine the contents of the specimen. Testing will **NOT** proceed. Please send a repeat specimen if clinically indicated.
Discrepant Date Format **Will be tested, hold until date details are confirmed**	SRA_DDF	Please note the collection date on the specimen received is in a discrepant format.
Collection Time **(Will be tested. Hold, confirm time if clinically relevant)**	SRA_Time	Please note there is no collection time for the specimen received.
Collection Date & Time **(Will be tested. Hold, confirm date & time if clinically relevant)**	SRA_DANDT	Please note there is no collection date and time for the specimen received.
Incorrectly used device **Will NOT be tested**	SRA_IUD	Please note the specimen received was incorrectly collected and not suitable for analysis. Testing will not proceed. Please send a repeat specimen if clinically indicated.
Haemolysed specimen **(Will NOT be tested)**	SRA_HAEM	Please note this specimen was grossly haemolysed and is not suitable for analysis. Testing will NOT proceed.
Paediatric specimen **(Will NOT be tested)**	SRA_PAED	Please note the specimen received was for a paediatric patient. Testing will NOT proceed.

Reason for SRA	SRA Code	Comment
Pregnancy Status **(Will be tested)**	SRA_PNN	A form was received for the above patient. However please confirm patient pregnancy status.
Invalid Test Request **(Will NOT be tested)**	SRA_NOTEST	Please note you have requested a test currently not available on the HSE approved test List. Please contact Enfer Medical on 045 819000 for further details.
Repeat sample **(Will be tested)**	SRA_Repeat	Repeat sample, already confirmed. Not to be sent for confirmation at client's request.
Sample Clotted **(Will NOT be tested)**	SRA_CLOT	This sample was clotted and is unsuitable for analysis. Please send a repeat sample if clinically indicated.
Test request withdrawn by client **(Will NOT be tested)**	SRA_TestWD	Testing not performed as per client request.
Illegible writing **(Will NOT be tested)**	SRA_Illegible	Please note the patient request form for the sample received was illegible. Testing will NOT proceed.
Specimen Stability **(Will be tested)**	SRA_STAB_TESTED	This sample was tested despite arriving to the laboratory outside the recommended timeframe from the date of collection. Please interpret the results in light of this limitation and advise repeat sample if clinically indicated.