

Blood Sciences

Clinical Biochemistry. Haematology.
Immunology. Serology.
Blood Transfusion. Antenatal Screening.
Point of Care Testing (POCT).

Laboratory Medicine User Handbook

... for a better Bolton

Document Control

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1. Introduction

Blood Sciences at The Royal Bolton Hospital NHS Foundation Trust is structured operationally within the Laboratory Medicine Department of the Diagnostics and Support Services Division (DSSD). The Blood Sciences department provides services to primary and secondary care within Bolton, Greater Manchester, the North West and further for specialty tests.

There are seven laboratory specialties within the Blood Sciences department at The Royal Bolton Hospital NHS Foundation Trust:

Haematology is the specialty responsible for the diagnosis and management of a wide range of benign and malignant disorders of the red and white blood cells, platelets and coagulation system. Haematology at Bolton offers a comprehensive test repertoire for neonatal, paediatric, and adult haematological investigation and treatment of patients including Blood Counts, Coagulation, and Factor Studies. Molecular testing is offered for Factor V Leiden & the prothrombin 20210 Mutation as well as BCR-ABL monitoring. The laboratory offers universal screening for Sickle Cell & Thalassaemia (SCT) as part the national Antenatal and Newborn Screening Programme (ANNB).

Blood Transfusion (Blood Bank) is generally the process of receiving blood or blood products intravenously.

Clinical Chemistry involves the biochemical investigation of bodily fluids such as blood, urine, faeces and cerebrospinal fluid (CSF) in relation to disease. Diseases such as diabetes, thyroid problems, kidney disease, heart attacks and cystic fibrosis can be diagnosed and monitored.

Immunology involves diagnosis and management of patients with allergy, autoimmunity, and immunodeficiency.

Serology and Antimicrobial Levels are performed by **Blood Sciences at the Royal Bolton Hospital**. Interpretive advice on serology results is available from the Consultant Medical Microbiologists. The laboratory performs Infectious Diseases in Pregnancy (IDPS) screening as part the national Antenatal and Newborn Screening Programme (ANNB).

Gentamicin and Vancomycin assays are undertaken by **Blood Sciences at the Royal Bolton Hospital**. These assays are not normally available out of hours. All other antimicrobial level assays such as Netilmycin, Amikacin, Tobramycin and Streptomycin are referred to specialist centres.

Antenatal Screening performs serum antenatal screening for Down's, Edwards' and Patau's syndrome as part of the Fetal Anomaly Screening Programme (FASP) offered to all pregnant women in the national Antenatal and Newborn Screening Programme (ANNB).

Point of Care Testing (POCT) devices include blood gas analysers, blood glucose, haemoglobin and INR meters used in the hospital and community. The POCT Team:

- Provide advice and support on POCT device procurement
- Provide training and ensure competency of users
- Monitor the quality of results from the devices
- Troubleshoot errors and faults

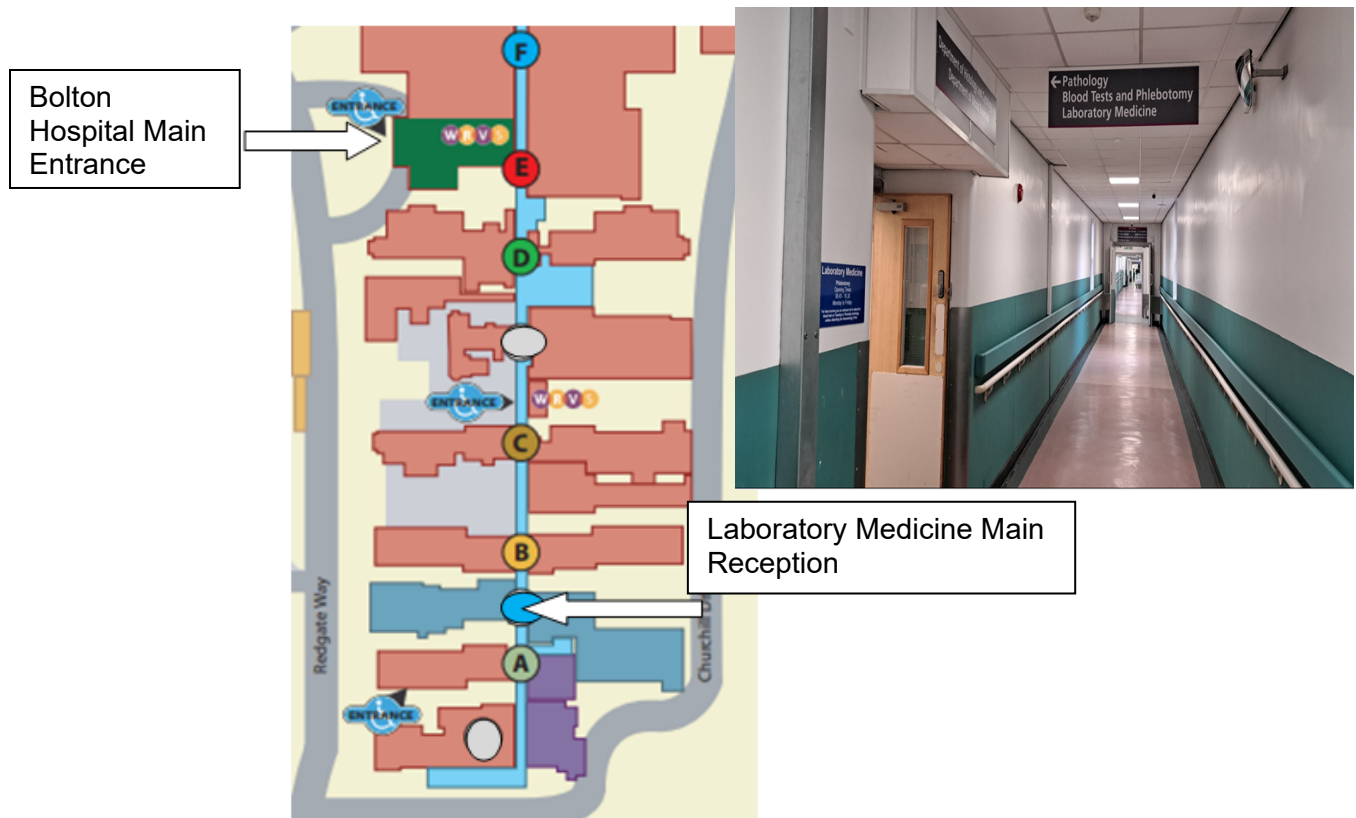
Further details regarding the tests performed by Blood Science laboratories can be found within the A-Z Test Repertoire.

This handbook aims to help our service users understand how the department's services are organised and hence to make the best use of the service by complying with necessary requirements.

There is a list of investigations, specimen containers and turnaround times. Certain investigations are referred to external laboratories, if further information regarding these laboratories or any other general information is required please contact the Laboratory Medicine Department Helpline on Tel 01204 390923 during routine working hours.

2. Address and Location

Location	Postal address
Laboratory Medicine is located just off the Main corridor in between A & B Block.	<i>Please state Laboratory (Clinical Chemistry/Haem/BTLAB/ANS/POCT)</i> Department of Laboratory Medicine Royal Bolton Hospital Minerva Road Bolton, Greater Manchester BL4 0JR Tel 01204 390437



3. Opening Hours

Specimen delivery (inpatient, outpatient, GP)

Monday – Friday 8.45am – 5.00pm

All work outside normal hours are intended for inpatient work only unless by specific agreement in an individual case. Out of routine working hours specimens should be dropped off within the Laboratory Medicine reception area. **Key code entry is required.**

Place samples in the **red linbin** on the left hand shelf. The alert light indicated **MUST** be switched on to inform the laboratory that a Blood Sciences specimen has been received.

Please note: Blood culture bottles should be placed into the Microbiology box – at the end of the reception corridor slope.



Laboratory Medicine Helpline (01204) 390516

Monday – Friday 9.00am – 5.00pm

The Department operates a helpline for professional users of the Laboratory Medicine Service for clinical advice and enquires relating to all laboratory disciplines. To contact the laboratory outside these hours please see each laboratory's arrangements.

Laboratory Medicine Call Centre (01204) 390923

Monday – Friday 9am – 12 noon

The Department operates an appointment line for GP/hospital patients to contact the Department to make appointments for phlebotomy.

Blood Sciences

Operate an out of hours' system for work outside the above stated hours.

Phlebotomy

Laboratory Medicine Outpatients	Monday – Friday	8.45am – 4.30pm
General Outpatients	Monday – Friday	9.00am – 12.30pm
	Wednesday	2.00pm – 4.00pm

Wards: phlebotomists visit between 8.45am and 12.15pm on weekdays (Monday – Friday) and a restricted service is provided at weekends and Bank Holidays. At all other times it is the responsibility of the requesting doctor to obtain the appropriate specimen for analysis.

3.1 Continuous Rota (OOH) Working in Blood Sciences

Clinical Chemistry, Haematology and Blood Transfusion

1. The Blood Sciences laboratory is staffed 24 hours a day including weekends and Bank Holidays to provide investigations required for same-day management of patients urgent or routine. Not all investigations are covered. Excluded are more complex analyses such as immunology, endocrinology, electrophoresis and any work not performed/analysed on site.
2. Between 5.15pm – 8.45 am on weekdays and at all times on weekends and Bank Holidays, there may be **only one member** of staff available in each area. Therefore, it is not possible for staff to answer telephone calls. In emergency situations it is necessary to contact the laboratory staff using the bleep system.
3. Results are available as soon as possible and within 2 hours of receiving the specimen. It is not necessary to telephone to ask for investigations to be done unless they are required more rapidly than the 2-hour expected return.

4. Specimens from A&E, ICU & HDU will be considered urgent without requiring telephone confirmation. They will be done as soon as possible.
5. Results will be immediately available for viewing on the Trust Electronic Patient Record (EPR). **Please note:** requests that have been sent on a hard copy/paper form will not appear on the EPR 'orders' screen however, the result will appear on the 'results' screen. Please check both screens prior to chasing outstanding results.
6. Staff are occupied with routine work throughout their duty period whether within or outside hours. Bleeping staff will delay work. **ONLY BLEEP** if a test result is required in less than 2 hours (except A&E, ICU, MAU, HDU and NNU) or for a Transfusion emergency. Users should use the ward based PCs to look up laboratory results.
7. **Please ensure that all tests required are requested 1st time, any add-ons requested do affect the availability of the results and can lead to unnecessary delay which may have a detrimental effect on patient care and experience.**

4.0 Departmental Contact Details /Telephone Numbers

Each laboratory has its own arrangements for providing advice to patients and users. The telephone numbers to be used are given at the beginning of this handbook. For general enquiries and for results please use the General Helpline number.

Out of normal laboratory hours it is important to understand that clinical advice is not available by telephoning the laboratory. All members of staff who work out of hours are fully trained and competent analysts, but they are not trained to provide clinical assistance or to judge the importance of requests made by clinicians to carry out work outside agreed guidelines.

There is, however, always a medically qualified member of staff or an appropriately trained clinical scientist available via hospital switchboard, (Tel. ext. 01204 390390, Tel. int. 0), who can quickly assist in such queries. Users will be directed to use this on call service by laboratory staff in appropriate circumstances.

4.1 Laboratory Medicine General

Name	Designation	Internal number	External number
General Helpline	Laboratory Medicine Office	142369	(01204) 390516
Carolyn Williams	Clinical Lead	5172	(01204) 390172
Lewis Hurley	Service Manager	5088	(01204) 390088
Phil Henry	Operational Business Manager	5419	(01204) 390419
Imtiaz Wahid	Computer & IT Manager	5253	(01204) 390253
Barbara Y Colman	Administration & Support Services Manager	5437	(01204) 390437
Laboratory Medicine Secretariat		5437	(01204) 390437
Lab Medicine Patient Appointment Call Centre & Helpline		5923	(01204) 390923
Janet Ashworth	Specimen Reception & Phlebotomy Manager	5296	(01204) 390296

4.2 Clinical Chemistry

Name	Designation	Internal number	External Number
Carolyn Williams	Consultant Biochemist	5172	(01204) 390172
Gina Mott	Secretary	5025	(01204) 390025
Steve Sawley	Laboratory Manager	147446	(01204) 487446
Clinical Chemistry Section Managers		147456	(01204) 487456
Urgent requests and contact out of office hours		Bleep 4087	

4.3 Haematology

Name	Designation	Internal number	External Number
Dr Chetan Pattalappa	Consultant Haematologist	5511	390511
Clinical Haematology Secretariat		5511	390511
Dr	Associate Specialist	5511	390511
Laboratory Management	Laboratory Team	5296	390296
Contact out of office hours		Bleep 5512	

4.4 Blood Transfusion

Name	Designation	Internal number	External Number
Principal Clinical Scientist Blood Transfusion Clinical Lead/HSST	Principal Clinical Scientist Blood Transfusion Clinical Lead/HSST	5254 (bleep 3026)	390254
Karen Farrar	Laboratory Transfusion Manager	5297	390297
Blood Transfusion Lab General Enquiries – office hours		5514	390514
Urgent requests and contact out of office hours		Bleep 5512	
Clinical Transfusion – office hours only		Bleep 3026	

4.5 Antenatal Screening

Name	Designation	Internal number	External Number
Karina Hambridge	Antenatal Screening Laboratory Manager	5422	390422
General Enquiries – office hours		5424	390424

4.6 Point of Care Testing

Name	Designation	Internal number	External Number
Jamie Osborne	POCT Clinical Lead and Principal Biochemist	5420	(01204) 390420
Emma James	POCT Section Manager and Quality Lead	5421	(01204) 390421

Support information is also available on POCT webpage accessible via the Laboratory Medicine webpages on BOB.

5 Enquiries and Complaints

- Please contact the Laboratory for any enquires regarding the tests requested, cost or method. The laboratory welcome any suggestions or enquiries regarding the repertoire and methods of tests provided.
- The department is committed to fully investigating all complaints regarding the standard and quality of services that we offer. Please contact our Laboratory Manager(s).
- The Patient Advice & Liaison Service (PALS) is available in all NHS Hospitals and Primary Care Trusts for information, help, comments or complaints about any aspect of the services provided at the hospital.
- Access to this service is detailed on the Bolton Foundation Trust Website: Your Views Matter page : [Your views matter - Bolton NHS FT \(boltonft.nhs.uk\)](https://www.boltonft.nhs.uk)

Patient Advice & Liaison Service (PALS)
Location: Bolton Foundation Hospital Main Entrance
Telephone: 01204 390193. An answer service is available
Email: pals@boltonft.nhs.uk

6 Quality

Quality is overseen by our Clinical Lead and Service managers with support from Laboratory Managers and the Quality & Service Improvement team. The Department of Laboratory Medicine is subject to the Trust Clinical Governance structure.

The Department of Laboratory Medicine aims to continually improve the repertoire of investigations, and co-operate in the formulation of guidelines, clinical pathways and protocols advising on the appropriateness of tests. The results which are issued are designed to be accurate, timely, and informative and quality assured. Quality assurance schemes such as EQA and IQA help make sure the department's high quality standards are maintained.

All practicing Biomedical Scientists and Clinical Scientists are registered with the [Health and Care Professionals Council \(HCPC\)](https://www.hcpc.org/). Training is accredited by the [Institute of Biomedical Science \(IBMS\)](https://www.ibms.ac.uk/) for biomedical scientist specialist training, and by [the Royal College of Pathologists](https://www.rcpath.org/) for medical training.

6.1 Accreditation

Blood Sciences is a UKAS accredited Medical Laboratory No 9925. The department has been assessed by the United Kingdom Accreditation Service (UKAS) and is accredited to meet the requirements of the International Standard 15189:2012. A transition process is currently in progress to update accreditation to the ISO15189:2022 standard.

Point of Care Testing (POCT) remains an exception to this. Please contact the POCT Managers for quality assurance or other POCT enquiries.

Accredited Tests within the examination repertoire are available on the UKAS Schedule of Accreditation for 9925 on the UKAS Website: [Search UKAS accredited organisations](#)

Non-accredited Tests performed by the department include:

Test Name	Quality Assurance Status
Xanthochromia (CSF) – Clinical Chemistry	EQA: UK NEQAS Haem Pigments scheme – Excellent Performance
Lactate (CSF) – Clinical Chemistry	EQA: UK NEQAS for CSF Proteins and Biochemistry – Excellent Performance
Fluid measurements of Protein, Amylase, Glucose, Creatinine, Potassium, Cholesterol, Albumin, Triglycerides, Creatinine, Urea, LD, Lactate	EQA: UK NEQAS for Fluids – Excellent Performance
Coroners Alcohol (Serum) – Clinical Chemistry	EQA: LGC Toxicology – Excellent Performance

All requests received by Laboratory Medicine shall be regarded as a service agreement, in compliance with the international standard ISO 15189:2012, and upon completion of transition during the year 2024 - ISO 15189:2022.

The Blood Transfusion service conforms to the UK Blood Safety and Quality Regulations 2005 and an annual compliance report is submitted for review by the Medicines and Healthcare products Regulatory Agency (MHRA).

Please contact the Laboratory Manager(s) for any enquiries as to the accreditation of our laboratory activities.

6.2 Confidentiality and Data Protection

Information is an essential for the clinical management of individual patients. The quality of the data supplied with a specimen determines the accuracy of the subsequent examination result and the timely return of the report.

Personal information is strictly confidential and will not be disclosed without the patients' consent. Exceptional circumstances included where national reporting is a statutory legal requirement, such as where there would be a risk to public health.

All staff should have an understanding of risks and responsibilities associated with incorrect data and the impact this can have on patient care.

The laboratory has policies covering the acceptance of specimens to ensure safe diagnosis and treatment, and that we act with the patient's consent. Specimens cannot be processed until any errors or omissions have been corrected and results will be delayed.

NHS standards and guidelines state that all clinical records (including pathology requests):

- Must be written clearly, legibly and in such a manner that cannot be erased;
- Must be accurately dated, timed and signed with the full name printed alongside each entry;
- Should be completed with minimal abbreviations.

6.3 Requirements for Patient Consent

For the majority of routine laboratory activities, consent can be inferred or implied when a person willingly submits to sample collection procedure (eg, venepuncture). The responsibility to obtain appropriate informed consent for all tests requested resides with the individual requesting the test.

Informed consent should cover all the tests being requested, implications of their results and disclosure of clinical and personal details to personnel (in the requesting organisation and any other healthcare organisations involved in providing the test).

Please ensure that the appropriate request form is completed when requesting Genetic Tests. Request forms for these tests often contain further patient consent requirements.

6.4 Result Uncertainty / Measurement of Uncertainty

With every result produced by a laboratory there is an associated uncertainty, which may be attributed to a number of small variations arising at any stage of the total testing process, from specimen collection to analysis. It is important to understand that

uncertainty is not the same as an error. An error implies that there is a difference between a measured value and the true value caused by an unknown factor, whereas uncertainty is an acceptable interval (95% confidence limit) within which a result can fall. We are able to predict this interval by calculating the measurement uncertainty (MU) for each analyte in our repertoire.

Further information on the measurement of uncertainty for all our laboratory assays is available by contacting the Duty Biochemist within routine working hours.

Please contact the laboratory if in there are any concerns regarding the validity of results.

6.5 Point of Care Testing

Any comparability studies between methods, where appropriate, are available to all users upon request. Please contact the POCT Team for further information.

7 Requesting Laboratory Examination Tests

All specimens must have a request form (paper or electronic). Three (3) patient identifiers are required on all specimens and request forms. All patient identifiers must match exactly between the sample and the request form.

Reflex testing - further examination tests performed on the primary specimen are dictated by the results from the initial screening and may be requested by the Departmental Consultants or Clinical Leads.

7.1 Blood Sciences Test Repertoire

The Blood Sciences Tests Repertoire is available as Appendices to this document.

This document is regularly updated. Please do not download to ensure that the most up to date version is accessed via the Bolton Foundation Trust Laboratory Medicine Internet and Intranet pages.

7.2 Mandatory Specimen Labelling Requirements

The addressograph label should always be used for hospital patients (except for Blood Transfusion specimens which **MUST be handwritten).**

Specimens **MUST be labelled with four unique identifiers :-**

- Unique identification number e.g. hospital number 'RMC' , NHS number, GUM clinic
- Surname
- Forename
- Date Of Birth

For Blood Transfusion Specimens

- the hospital (RMC) number **MUST** include the RMC-prefix
- the specimen **MUST** be handwritten, dated and signed by the specimen collector.

For Antenatal Screening Specimens please refer to the **Antenatal Screening Handbook**.

Failure to meet these requirements can cause results to be allocated to the wrong patient and /or tests not performed

Date and time of sample collection **Must** be provided to support sample validity

Multiple specimens taken at different times on a patient **MUST** be labelled on the sample container with the time (24 hr. clock) when the sample is taken.

Single or two identifiers may be accepted as long as there is a unique identifier number e.g. GUM clinic numbers, Clinical Trial patients

7.3 Electronic Requesting

Electronic ordering must **be used where available unless there is downtime, to reduce manual forms and associated transcription risks. The request form information MUST match the information on the sample.**

Electronic Requesting / Ordering is not available for Blood Transfusion.

Hospital electronic requesting is available using the allscripts Electronic Patient Record (EPR) system.

GP electronic ordering is available using the sunquest ICE system.

7.4 Hard Copy / Paper Request forms

In addition to patient identifiable information, forms :-

- **MUST** contain legible information
- The **Ward/Department source** of the patient's care (ward or department **and** Consultant or GP) **must** be clearly provided. Several sets of results each day cannot be sent out because this information is not given. (please do not use POPD/GOPD-out patients, select speciality i.e. gastroenterology, this will ensure the requester receives the results in a timely manner
- **The name of the requesting doctor** and the doctor's bleep number (when indicated on the request form) must be clearly shown. This reduces delays when the laboratory needs to contact the clinician either because of a problem with the specimen or request or because of abnormal or unexpected results.
- **All Hard Copy/Paper Request forms are available from Laboratory Medicine – please contact the Helpline.**

Blood Sciences Request Form

BLOOD SCIENCES	* Hospital Number R M C		* Date of Birth		* Sex M <input type="checkbox"/> F <input type="checkbox"/>		NHS <input type="checkbox"/> Private <input type="checkbox"/>		
	* NHS Number		* Ward / Department		* Consultant (Surname, Initial e.g. LIPSCOMB, G)				
	* Surname		* Clinical Details, Therapy or Reason for Request						
	* First Name								
	* Requesting MO (BLOCK CAPS)		* Requesting MO (Signature)		* Bleep No.		Date of Specimen		Time of Specimen
	Laboratory Number Here		Serum Sample (Brown Tube) <input type="checkbox"/> Magnesium (MAG) <input type="checkbox"/> Thyroid Function Tests (THY) <input type="checkbox"/> Serum B12 (B12) <input type="checkbox"/> Serum Folate (FOLS) <input type="checkbox"/> Serum Ferritin (FER) <input type="checkbox"/> HIV Antibody / Antigen (HIV) <input type="checkbox"/> Hepatitis B Surface Antigen (HBsAg) <input type="checkbox"/> Hepatitis C Antibody (HCAB) <input type="checkbox"/> Hepatitis A IgM (HAVM)		Fluoride Sample (Yellow Tube) <input type="checkbox"/> Glucose (G) <input type="checkbox"/> Lactate (LAC)		Laboratory Number Here		
	<input type="checkbox"/> Electrolytes (E) <input type="checkbox"/> Liver Function (L) <input type="checkbox"/> Calcium Metabolism (C) <input type="checkbox"/> Lipids (LIP) <input type="checkbox"/> C Reactive Protein (CRP)		Immunology tests <input type="checkbox"/> ANCA (ANCC) <input type="checkbox"/> Antibodies to SM/Mito/LKM (LKM/C) <input type="checkbox"/> Total IgE (IGE) <input type="checkbox"/> Allergen specific IgE (RAST)		EDTA Sample (Red Tube) <input type="checkbox"/> Full Blood Count (FBC) <input type="checkbox"/> HbA1c (HbA1) <input type="checkbox"/> Abnormal Hb Screen (HPLC)		Laboratory Number Here		
	<input type="checkbox"/> Anti nuclear antibody (ANA) <input type="checkbox"/> CCP antibody (ACCP) <input type="checkbox"/> Rheumatoid Factor (RFAC) <input type="checkbox"/> Cardiolipin antibodies (CARC) <input type="checkbox"/> C3, C4 (C3C4)		PLEASE STATE ALLERGENS IN THE CLINICAL DETAILS BOX		Citrate Sample (Green Tube) <input type="checkbox"/> INR (PT) <input type="checkbox"/> APTT		Laboratory Number Here		
	Other Tests		Request Groups Codes		Urine and other Samples <input type="checkbox"/> Albumin: Creatinine Ratio (MACR)		Laboratory Number Here		

Bolton NHS Foundation Trust

Blood Sciences – Antenatal Haemoglobinopathy and Infectious Disease screening (front)

TO ENSURE A LEAKPROOF SPECIMEN CARRIER ANTENATAL SCREENING ONLY	ANTENATAL SCREENING		(HAEMOGLOBINOPATHIES, DIABETES, INFECTIOUS DISEASES)																						
	NHS Number		Consultant (Surname, Initial)																						
	Hospital Number		Requestor (Please print)																						
	Surname		Signature																						
	Forename		Requestor Location																						
	Date of Birth		Requestor Contact Number																						
	Address		Date		Time																				
	Current Gestation		FOR LAB USE ONLY																						
	Tests (Please tick as appropriate)																								
	Test set (Tick one. See overleaf for details of individual tests) ANC1 (ANC One) <input type="checkbox"/> (Brown, Red) ANC0 (ANC Zero) <input type="checkbox"/> (Brown, Red) ANCD (ANC Diabetes) <input type="checkbox"/> (Brown, Red, Yellow) Family Origin Questionnaire Completed: Yes <input type="checkbox"/> Not Applicable / Result <input type="checkbox"/> Partner			Infectious Diseases in Pregnancy Screening (IDPS) Sample status (tick one) 1st sample <input type="checkbox"/> 1 sample after previous decline <input type="checkbox"/> Repeat after inadequate 1st sample <input type="checkbox"/> Repeat to confirm recent result <input type="checkbox"/> Repeat to exclude recent infection <input type="checkbox"/>																					
Other tests requested or other clinical information			Tests (Circle one for each test) <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th></th> <th colspan="2">Status Unknown</th> <th colspan="2">Known Positive</th> </tr> </thead> <tbody> <tr> <td>HIV</td> <td>Accepted</td> <td>Declined</td> <td>Accepted</td> <td>Declined</td> </tr> <tr> <td>HepBsAg</td> <td>Accepted</td> <td>Declined</td> <td>Accepted</td> <td>Declined</td> </tr> <tr> <td>Syphilis</td> <td>Accepted</td> <td>Declined</td> <td>Accepted</td> <td>Declined</td> </tr> </tbody> </table>				Status Unknown		Known Positive		HIV	Accepted	Declined	Accepted	Declined	HepBsAg	Accepted	Declined	Accepted	Declined	Syphilis	Accepted	Declined	Accepted	Declined
	Status Unknown		Known Positive																						
HIV	Accepted	Declined	Accepted	Declined																					
HepBsAg	Accepted	Declined	Accepted	Declined																					
Syphilis	Accepted	Declined	Accepted	Declined																					

Blood Sciences – Antenatal Haemoglobinopathy and Infectious Disease screening (back)

- Please ensure all patient and source information is entered
- An addressograph label should always be used for hospital patients (with the exemption of Blood Transfusion requests)
- The patient must be uniquely identified on the form **and** on the specimen
- All the data on the form and specimen must be legible
- Send the specimen and the request form to the laboratory in the specimen plastic bags provided

Test sets:

ANC1 (ANC one) - (Brown, Red)

HIV Screen
Hepatitis B Surface Antigen
Syphilis Screen
Full Blood Count
Haemoglobin Screen
Family Origin Questionnaire
Sample Save

ANC0 (ANC Zero) - (Brown, Red)

Hepatitis B Surface Antigen
Syphilis Screen
Full Blood Count
Haemoglobin Screen
Family Origin Questionnaire
Sample Save

ANCD (ANC Diabetes) - (Brown, Red, Yellow)

HIV Screen
Hepatitis B Surface Antigen
Syphilis Screen
Full Blood Count
Haemoglobin Screen
Family Origin Questionnaire
Random Blood Glucose
HBA1c
Sample Save

Blood Transfusion Request Forms are available within the Blood Product Transfusion Record. The Record contains Request, Prescription, Observations and Prescribing Protocols. This is a permanent record – required by law Blood Products must not be prescribed on any other documentation.

USE FOR: Blood Components, anti-D immunoglobulin, Prothrombin Complex Concentrate & factor concentrates.

Blood Transfusion Antenatal Request Form

Bolton NHS Foundation Trust HM-FRM-MAN-0004 (version 6)		Laboratory Medicine Blood Transfusion		
NHS NUMBER				Lab use only
HOSPITAL No. Include Prefix:				
SURNAME				
FIRST NAME				
DATE OF BIRTH		GENDER	M / F / _	
CONSULTANT	LOCATION			
CLINICAL DETAILS (tick all that apply)	Previous transfusion	<input type="checkbox"/>	REASON FOR REQUEST	
	Previous reaction	<input type="checkbox"/>		
	Previous pregnancy	<input type="checkbox"/>	Gravida _____ Para _____	EDD
	Known antibodies	<input type="checkbox"/>	TESTS REQUIRED (tick)	
	Anti -D last given on At RBH or other? ____/____/____		Antenatal Group & Antibody Screen (Booking)	
REQUESTER (MO, or on behalf of MO)			Antenatal Group & Antibody Screen (28 weeks)	
Signature & Date	Contact Number			Infant Group and Direct Anti-globulin Test (DAT)
SAMPLE TAKER				RAADP (28-30 weeks) + Group & Antibody Screen
Name			Other Test (specify):	
Sample Date	Sample Time			Maternal & Cord Blood Testing
Sample Type: 7.5ml Transfusion EDTA (adults and cord blood); 1.3ml EDTA (babies)				Infant name _____
				Infant date of birth ____/____/____
				Infant gender M / F / ____
				Infant hospital/ NHS number _____

7.5 Requesting Urgent Analyses

Requesting additional tests on blood samples after submitting the original request causes considerable disruption to the flow of work in the laboratories and the sample may no longer be available or suitable for testing. The need for additional tests may be reduced by requesting against agreed pathways and test protocols in the first instance.

Requests for **all** urgent analyses during normal working hours must be made initially by telephone by the requesting doctor. This allows steps to be taken to intercept the sample on arrival and to prepare the necessary resources.

For Blood Sciences telephone the call centre directly during normal working hours. During Out of Hours Working periods, if it is necessary to contact the laboratory staff regarding emergency requests only by using the bleep system. (Tel. ext. 01204 390390, Tel. int. 0)

It is not the responsibility of Laboratory Medicine to arrange for the transport of specimens. All urgent work must be correctly booked onto the electronic requesting

system(s) EPR or ICE, or accompanied by a fully completed request form as described above.

When a specimen that has already been sent as 'routine' becomes 'urgent', the turnaround time will be extended since the specimen was not intercepted on arrival and now has to be found.

7.6 Requesting further tests on specimens already in the laboratory

Specimens are kept for a very limited period after testing. Clinical Chemistry 48 hours, Haematology 24 hours, & aliquots of the Antenatal Screening Samples are kept for 24 months.

If you have any queries about the results or the tests that have been performed it is important to discuss this with the laboratory as soon as possible so that any checks can be made.

Test	Time Limit
Ammonia	Cannot be added
LDH	Cannot be added
Troponin-T	24 hours 4°C
Procalcitonin	24 hours RT, 2 days at 4°C
PTH	8 hours at RT, 2 days at 4°C
Lactate	6 hours at RT once spun
B12	48 hours at 4°C
Folate	48 hours at 4°C
Enzymatic Creatinine	5 days at 4°C
Bilirubin (serum)	5 days at 4°C
ALT	5 days at 4°C
Bicarbonate	5 days at 4°C
Prolactin	14 days at 4°C
PSA	5 days at 4°C

Tests may be added onto received serum samples within 48 hours of receipt providing they are clinically appropriate and the sample remains viable (Please contact the Biochemists ext. 5420, if in doubt over viability issues).

Please note: by adding additional tests onto the original sample may cause delays in the final results being issued and may have an impact on patient health & wellbeing.

Clinical Biochemistry, Immunology and Serology

If you wish to request further tests on blood samples that you have already sent to us please call us on (01204) 390516 with the patient identifiers and the tests you require.

Haematology, Blood Transfusion:

Specimens are kept for 24 hours after testing. However, sample viability is limited for many tests which may restrict 'add-on' requests. Please seek advice from the laboratory. Please call us on (01204) 390516 with the patient identifiers and the tests you require.

7.7 Blood Transfusion requesting requirements

The Use of Addressograph labels on samples is not permitted within Blood Transfusion.

Blood Transfusion Samples and Request Forms

1. Identify the patient accurately.

- a. Ask the patient (if able) to state their full name and date of birth. Check that this matches the ID on the transfusion request form.
- b. Then check the full name, hospital number and date of birth on the request form matches those on the ID wristband.

Unconscious patients MUST be identified by information present on the ID wristband

2. Unidentified patients must have an ID wristband generated in the following format:

Surname: UNKNOWN,
Forename: MALE/FEMALE,
Estimated date of birth,

LE2.2 will generate a new hospital number.

This wristband must remain on the patient until the patient can be fully identified and blood

transfusions are no longer needed.

3. Handwrite the sample tube at the patient's bedside, clearly and accurately. The minimum details accepted are forename, surname, date of birth, hospital number (or A&E number if the hospital number cannot be obtained), date of sample and signature of person taking the sample. **THE USE OF ADDRESSOGRAPH LABELS**

IS NOT PERMITTED, samples labelled with addressographs or have omissions or errors will be discarded and repeat samples requested.

4. State on the request form, the reason for the request, indication code previous transfusion/obstetric history, the consultant, the location of the patient plus any subsequent change of location, the quantity of blood components required (or Group & Save only), and the time and date required.
5. **Take full personal responsibility for ensuring that the blood sample from the patient is placed in the correct tube for that patient. Your signature on the form and tube label records that you have ensured that the sample and patient have been correctly identified.**

7.8 Potentially Infective and High Risk Specimens

Although a 'Universal Precautions' policy is adopted in the laboratory, specimens taken from patients known or suspected to present a health hazard to laboratory staff e.g. TB, typhoid and paratyphoid, brucellosis, Creutzfeldt-Jakob Disease CJD and variant CJD, should be clearly labelled "DANGER OF INFECTION" on both the form and specimen. This is especially important when sending specimens of tissue, blood, faeces, CSF or other body fluids.

To help reduce the risk of Laboratory acquired infection by exposure to potentially hazardous clinical samples all samples must be sent in the appropriate containers. The specimen bags must be sealed before sending and every effort made to check samples for leaks prior to sending in the transport. For large urine specimens make sure that the plastic bag containing the request form is securely attached to the urine bottle and that the urine container itself is labelled.

7.8.1 High Risk Specimens: High consequence infectious disease (HCID)

The duty Consultant Microbiologist and receiving laboratory **MUST** be informed prior to collection of specimens from patients suspected of a High consequence infectious disease (HCID), previously termed Viral Haemorrhagic Fever (VHF).

Specimens **must** be identified as being high risk in the clinical history on the request form and placed in a separate plastic bag and sealed. A change of evidence form may be required to ensure that specimen contact is appropriately recorded.

7.9 In the event of IT failure

Paper/Hard copy request forms must be completed for requests in the event of IT Failure. It is essential to include source/consultant/ caring medic and contact details.

8. Specimen Collection and Transport





8.1 Obtaining Specimen Containers and Supplies





All specimen containers can be obtained from the Department of Laboratory Medicine within normal opening hours. Bottles for urine specimens sometimes need to contain appropriate stabilisers and/or preservatives. If in doubt about the type of container, consult the laboratory. GPs may obtain their supplies via the laboratory courier service (see below – **Transport**)

8.2 Blood Collection Order of Draw

When multiple specimens are taken at a single venepuncture there is a small risk that additives within sample tubes may be carried over into the next tube.

It is therefore advised that plain tubes be filled first, followed by tubes with additives, and where several tubes are used, the order should be as demonstrated below:

	Cap Colour	Additive	Tests	Special Instructions
1		Blood Culture	Aerobic followed by Anaerobic - if insufficient blood for both culture bottles, use Aerobic bottle only	
2	 green	Citrate -Tri-sodium citrate 1:10	Clotting Studies, INR, Prothrombin time, Activated Partial Thromboplastin time - APTT, D-Dimer, Fibrinogen,	Tube MUST be filled to the full draw volume.
3	 white	Plain Serum - No preservative	Cryoglobulins, Selenium, Zinc measurement, ** Voriconazole (Fungal Drug Levels), Other specialised Tests	Please refer to Test Repertoire
4	 brown	Serum – no preservative, polyacrylic ester gel to form a barrier between the serum and cells when centrifuged	U&Es, LFT, Calcium, Lipids, Thyroid function test, CRP, Amylase, Magnesium, Vitamin B12, Folate, Ferritin, Serum electrophoresis, Antibiotic assays, Immunology, Serology, Lithium, etc.	

5	 orange	Lithium - Heparin	Beutler Test, Galactosaemia Screen, White cell cysteine analysis, Other specialised Tests	Please refer to Referral Test Repertoire
6	 red	EDTA-KE 3.4mL	Full blood count, plasma viscosity, immunosuppressants, Haemoglobin A1c, Parathyroid hormone, Sickle cell & thalassaemia, Malaria screens, ammonia	Tube MUST be filled to the full draw volume.
7	 red	EDTA-KE large 7.5mL	Blood Transfusion – Group and Save, Direct Antiglobulin/Coombs Test (DAT). Please note these tubes MUST NOT be used for routine haematology tests	
7	 yellow	Fluoride-Oxalate	Glucose, Glucose tolerance, CSF Glucose, Lactate	

8.3 Specimen Transport

Each specimen or set of specimens must be placed in the plastic bag that accompanies the request form. This bag must be sealed to prevent any leakage or loss of samples in transit. Please do not use staples to seal these bags. Please ensure that the specimen label or addressograph label is placed on the paper request form that is attached to the sample bag and NOT placed directly on to the plastic bag.

Samples must NOT be stored but should be sent to the laboratory immediately via porter or air tube or, for off-site users, by the next available transport. Users must consider the time of the next transport as delays may compromise certain results - if unsure, contact the relevant laboratory.

8.3.1 GP Surgery Transport

Samples collected from GP practices are gathered into strong polythene bags which are sealed. The hospital transport drivers place these bags in the secure rigid sample transport boxes with sealable lids that they carry in their vans. These boxes must be labelled as “Diagnostic Specimens – UN3373” and have the department and hospital name and contact telephone number.

The laboratory has an arrangement with the Trust iFM (Estates) department to provide a transport system to deliver reports and collect specimens for analysis from GP surgeries in and around Bolton. The service runs daily Monday to Friday. Contact the Laboratory Helpline if you require further information regarding this service.

Samples transported via the Trust courier service are temperature monitored during transit; any excursions are reported to the appropriate manager for action.

8.3.2 Hospital Transport

Pneumatic tube (POD)

Blood gas samples, CSF, large specimen containers e.g. 24hrs Urine containers, and glass containers **MUST NOT** be sent via the Pneumatic tube (POD) system.

All other samples can be sent via the Pod system.

Main Laboratory Medicine POD number: 3333

Microbiology POD number: 3434 (this auto-diverts to 3333 out of hours)

Allowed in Pods	
<ul style="list-style-type: none">• Blood tubes• Blood cultures• Faeces (please do not overfill and ensure that the lid is on correctly)	<ul style="list-style-type: none">• Swabs• Urines (please do not overfill and ensure that the lid is on correctly)
Not Allowed in Pods	
<ul style="list-style-type: none">• Sputum• Pleural fluid (or other fresh fluid samples eg. Ascitic)• Bronchial Washings• Cerebrospinal Fluid (CSF)• Theatre samples	<ul style="list-style-type: none">• Radioactive Samples• Histology samples• Samples in Formalin• Sharps or needles• Leaking samples

When the Pod system is not operational all samples must be transported safely to the Laboratory, the responsibility for ensuring this happens lies with the ward/departmental managers.

Laboratory Medicine Specimen Reception is situated on the Main corridor between A & B block.

iFM (Bolton) is responsible for the maintenance and service of the hospital pneumatic air-tube, together with its cleaning and decontamination. In case of failure or leaking samples please telephone the iFM help line 5995.

Delivery in person to the central reception

Samples must be sealed in plastic bags and must also be placed in an appropriate carrier, e.g. sturdy carry box, sealed strong bag or another approved container whilst being carried to the laboratory.

8.3.3 Postal Transport

Specimens that are sent via post must be packed in special containers that conform to regulation UN No 3373 – Packing instructions for Diagnostic specimens and Infectious substances (Packing instruction P650). This states that the 'packaging must be of good quality, strong enough to withstand the shocks and loadings normally encountered during carriage'.

9. Factors affecting the results or processing of specimens

Where a specimen is not processed the requestor will be informed either by report comment or by telephone according to the urgency or specimen type.

Where there is a need for a repeat specimen due to analytical failure or additional specimens are required (insufficient primary sample available); the laboratory will telephone urgent locations (A/E, SDEC etc), otherwise an appropriate laboratory comment will be added to the report to inform the requestor.

The laboratory will inform Trust Bed Managers and A+E where there will be significant delay in the sample results being available for whatever reason. Further communications with all users will be sent as appropriate.

Factor	Laboratory actions
Unable to unequivocally identify the patient	Repeatable specimens that are unlabelled or where there is insufficient information to link the specimen specifically with the patient will not be processed.
No Source or requesting doctor (consultant) on Request form	Specimen will be processed providing unique patient identifiable information is available however, where report communication systems rely on source/consultant – a result message will not be transmitted. Please see section 10.1.2 GP Results.
Leaked Specimens	In the interest of safety, specimens that leak inside the plastic specimen bag will not be processed.
Needles attached	Specimens with needles attached will not be processed
Incorrect Collection bottle/device	Specimens collected into the wrong bottles will not be processed.
Special Testing Requirements	Where the time of sample collection, the method of collection or the patient preparation for the test does not conform to the requirement for the investigation it may not be possible to continue with the analysis. Advice should be sought from the appropriate laboratory about the conduct of special investigations.
Transport Delay	Sample viability is limited to a short period of time for many tests, therefore transportation to the laboratory should not be delayed.
Temperature	Extreme temperatures (hot or cold) – will likely affect results for haematology tests.
Specimen timing	The time of taking a specimen in relation to a person taking a drug will influence the concentrations and ability to interpret results for therapeutic drug monitoring.
Haemolysis , icteric	<ul style="list-style-type: none"> • Expelling blood through needle

and lipaemia	<ul style="list-style-type: none"> • Vigorous shaking • Extreme temperature <p>Haemolysis, icteric and lipaemia can interfere with certain analytes. These are indicated as comments on the report and no result for these parameters will be released. Common analytes affected include: sodium, potassium, bilirubin, magnesium, phosphate, AST, ALT, and troponin.</p>
Contamination	Please use the correct tube and blood draw order to reduce the risk of interference – e.g. EDTA contamination with potassium, calcium and magnesium
Cerebrospinal Fluid (CSF)	Specimens for xanthochromia need to be protected from light
Coagulation test : Underfilled	Will not be processed
Coagulation test : Haemolysed	Will be processed, depending on degree of haemolysis
Coagulation test : Clotted	Will not be processed
Coagulation test : Lipaemic	Will be processed, depending on degree of lipaemia

9.1 Blood Collection Health & Safety – Sharps

A Sarstedt monovette system is in use in the Department and is supplied to wards, departments and General Practitioners. Samples should be taken in line with Trust Policy.

Every year numerous staff working in Healthcare sustains injuries from sharps. These injuries pose a significant risk to the physical and mental health of the staff member.

All members of staff have a responsibility to:

- Familiarise themselves with the guidance regarding the safe use and management of sharps.

- Adhere to safe working practice in order not to harm either themselves or others.
- Familiarise themselves with the necessary action to take in the event of injury and unsafe disposal.
- Report any incidents or unsafe practice

Managers must ensure that:

- The management of sharps is incorporated into the risk assessment process
- Suitable sharp containers are readily available and located in agreed areas.
- All personnel are informed of the correct and safe procedures for the management of sharps both at induction and during refresher training.
- All personnel are made aware of the action to take should a needle stick injury or sharps spillage occur, including appropriate reporting of the incident.
- A risk assessment is immediately undertaken if a member of staff reports a sharps injury.
- The incident is reported in line with the Trust Incident Reporting Procedure.

The use of sharps should be avoided where possible. When their use is essential, particular care is required in handling and during the disposal process:

Sharps **must** always be handled carefully, and in accordance with the following principles;

- 1. Do not re-sheath used needles, scalpel or sharp objects.
- 2. Never pass sharps from person to person by hand.
- 3. Never walk around with sharps in your hand.
- 4. Never leave sharps lying around – always dispose of them yourself.

9.2 Use of Sharps Bins

1. Sharps must only be disposed of, in designated sharps bins that meet the requirements of the British Standard: BS 7320 (1990) UN3291
2. The correct size plastic container must be assembled correctly prior to use and staff must ensure the lid is secure.
3. The person assembling the sharps container must complete the relevant sections on the label before putting it into use. Site/date in use etc...
4. When placing the used sharps into the container, staff must ensure that all contents actually pass the plastic flap and enter the container.

5. The sharps container must be used and discarded as per the Trust Policy Safe Management of Sharps.

10 Reporting of Results

Turnaround times for individual tests are available in the Appendix Test Repertoires and are referenced against a standard working week. These times are from receipt of specimens within the laboratory to the report leaving the laboratory. This time may be affected by public holidays and weekends. If significant delays are inevitable for a given investigation, efforts will be made to contact the test requestor.

Laboratory reports are reported electronically (not Blood Transfusion) and are supplemented by paper reports to those areas that do not have access to view or receive the electronic reports. The exception is for the delivery of paper reports for Blood Transfusion.

10.1 Electronic Transmission of Results (not Blood Transfusion)

10.1.1 Hospital

Electronic Patient Record (EPR) and Trust Integrated Clinical Environment (ICE).



Hospital Users must request laboratory medicine tests and view results using the Sunrise Electronic Patient Record (EPR) where available, this reduced risks associated with paper/hard copy requesting.

The Bolton Sunrise EPR system is supplied by Allscripts®. Training and access to the system is available from the EPR Service desk Team EPRservicedesk@boltonft.nhs.uk.

When a result is expected, please check the 'results' tab within the patient record. Both electronic and paper/hard copy requests will be reported to EPR.

Results for hospital wards and out patients are additionally reported to the **Trust ICE system**.

10.1.2 GP results

Integrated Clinical Environment (ICE)

GP results (except Blood Transfusion) are reported to the Integrated Clinical Environment (ICE).

Results can be searched for using the Patient identifiable information.

ICE reports to GP IT Systems such as EMIS, Vision and System One. The 'result message' has been interfaced using requesting GP Practice (P number) and/or GP name; thus requests received in Laboratory Medicine with no requesting source/GP name will be processed; the result will be available on systems under the patient details, however the 'message' may not transfer in 'list format' to the source on these GP IT systems.

Contact the Laboratory Medicine Computer & IT Manager or the GP IT Facilitators helpdesk for further details.

10.2 Paper Hard Copy Reports

Electronic ordering must **be used were available unless there is downtime, to reduce manual forms and associated transcription risks.**

Where Paper Hard Copy Reports are required. These will be distributed through internal and external mail by the Laboratory Medicine Office Team.

It is essential that the requesting source (Ward, Clinic, Specialty) AND requesting Consultant/Doctor is clearly provided on the request form. Numerous reports with GOPD are printed daily, where the location of the request is not easily determined.

10.3 Communication of Critical Results

The Laboratory may telephone the requesting clinician if an unexpected/abnormal result is obtained.

The following information identifies under what circumstances the department may telephone the requesting clinician:

10.3.1 Antenatal Screening Laboratory

The laboratory turn-around time from receipt of the blood sample to the reporting of results is within 3 working days as per Fetal Anomaly Screening Programme (FASP) standard. All higher chance results are telephoned directly to the user and all lower and higher chance reports are available via the web portal. Please refer to the separate **Antenatal Screening User Handbook** if further information is required, the Handbook is available from the Laboratory.

10.3.2 Blood Transfusion

Blood & blood product information - There may be certain circumstances when the laboratory is required to let the users know that blood is available e.g. urgent blood for theatre, A/E etc.

The laboratory is required to telephone the ward to inform them when platelets & FFP are ready due to the short expiry time.

Maternal & cord samples - When completed, the laboratory will ring the ward to inform them whether Anti-D immunoglobulin is required or not for their Rh negative mothers.

10.3.3 Clinical Chemistry critical results

Tests/requests for which immediate reporting of abnormal results is required can be found in the table below.

Most results require urgent communication (<2 hours) and are highlighted in red. Those that require communication within 24 hours are in black.

Critical results are phoned to the location stated on the request form during the working day. After 17:15 GP requests are phoned to The GP out of hours' service.

Test/request	Lower Action Limit	Upper action Limit	Comments
AKIT			See flow chart below
Ammonia	-	≥100	
Amylase	-	≥500	By telephone together with Electrolytes
Adj. Calcium	≤1.8	≥3.0	By telephone with Electrolytes, Mg and P
AST		≥600	
ALT		≥600	
Bicarbonate	≤10	-	
Bile Acids	-	≥14	In pregnancy only
Carbamazepine	-	≥20	
CK	-	≥5000	
Cortisol	≤50		Communicate within 24 hours
Creatinine	-	≥354	Excludes Renal Dialysis Unit patients. Communication not required when historical results are similar.
Creatinine (paediatric < 16 years)	-	≥200	Excludes Renal Dialysis Unit patients. Communication not required when historical results are similar.
CRP	-	≥300	Telephoning only required when new finding for outpatient/GP
CSF Protein	-	≥1g/L	a) child over 3 months b) CSF protein result >1g/L (caution specimen must not be blood-stained, See LM-BS-72)
Digoxin	-	≥2.5	Telephone any digoxin when K<3.5mmol/L
Ethanol		≥4000	
Glucose	≤2.5	≥25	By telephone together with Electrolytes
Paed Glucose	≤2.5	≥15	By telephone with Electrolytes if <16 years old

GP& ED (first time raised) troponins	-	≥ 14	By telephone to surgery/ED
Lactate		≥ 3.5	
Lithium	-	≥ 1.5	Also report Electrolytes result
Magnesium	≤ 0.4	-	By telephone with Ca
*Neonatal Tbil	-	≥ 350 ≥ 250	For Inpatients For Outpatients
*Neonatal BC		≥ 25	
Paracetamol	-	Detected	
Phosphate	≤ 0.3	-	By telephone with Ca
Potassium	≤ 2.5	≥ 6.5	Only if historical results are not similar
Phenytoin	-	≥ 25	
Salicylate	-	≥ 300	
Sodium	≤ 120	≥ 160	Only if historical results are not similar
Sodium (patients under 16yrs)	130		
Theophylline	-	≥ 25	
Urate		≥ 340	Pregnancy only when new finding
Urate		≥ 1000	Non pregnancy
Urea	-	≥ 30	Exclude Dialysis Unit patients Not required when historical results are similar. (>10 if patient <16 years)

10.3.4 Haematology critical results

The following results are telephoned to the requestor - in the absence of previous abnormal results.

Test	Result	Additional comments
Haemoglobin	$<80\text{g/L}$	
Adult haemoglobin	$>190\text{g/L}$	In cases where the result is unexpected with reference to clinical details & previous results. (Excluding paediatric/neonates.)
Haematocrit	>0.55	
Platelet count	$<50 \times 10^9/\text{L}$	
Platelet count	$<10 \times 10^9/\text{L}$	

(haematology patients)	⁹ /L	
Absolute neutrophil count	<0.8 x 10 ⁹ /L	
Malarial parasites	Positive	
International normalised ratio	>5.0	
Activated partial thromboplastin time	>90 seconds	
Heparin anti Xa assay	>=2u/mL	
Fibrinogen	<1.0g/L	
Presence of blasts on blood film - acute leukaemia, confirmed or suspected		
Any thalassaemia or haemoglobinopathy affecting antenatal patients and their partners which may affect the baby (e.g. both parents' heterozygous beta thalassaemia trait, both parents haemoglobin S trait etc.) are alerted to the Antenatal Clinical Team via email.		
Positive sickle cell screen on patients about to go for a general anaesthetic.		

10.4 Telephoning Results

Where a telephone report is provided, the following procedure has been adopted by the Trust (to minimise potential errors):-

1. The telephoning of results should be avoided if possible as errors and misunderstandings may have disastrous consequences.
2. Where possible results should be retrieved directly by means of ward-based computer links with Laboratory Medicine; or a printed report should be requested via the air tube transport system; or a member of ward staff should collect a copy of the report from the laboratory. If the report is required at another site it may be possible to print it remotely.
3. It is recognised that results may need to be telephoned under certain circumstances.
4. The following guidelines for telephoning results are applicable to the Bolton Laboratories:
 - a. Results will be read out by medically qualified staff, Biomedical Scientists, or other persons specifically trained to provide accurate information over the telephone. Reports will only be read if they have been authorised.

- b. It is recognised that results cannot always be telephoned to a medical practitioner. Results may be given to qualified nursing staff, a registered practitioner or medical secretary. In appropriate cases to pharmacy staff and dietitians all of whom must identify themselves and comply with the guidelines given above.
- c. **Before providing any results** the identity of the person (the job title if not the name) to whom the results are to be given and their location (which ward or GP practice) must be established as clearly as practicable.
- d. If there are doubts about the appropriateness of an individual to receive results, an alternative arrangement should be discussed. In the case of a patient searching for their own results they should normally be referred to the requesting clinician.
- e. Where there are doubts about the appropriateness of the location and the individual, no information should be given at all. This includes information about whether pathology tests have been carried out or not. This might occur, for instance, if the requestor gives a name and a location that is outside the normal range of requestors (e.g. a GP practice not normally using our service, a distant hospital, a private company etc.). Details of the request should be noted without acknowledgement on our part of any involvement in the case, and the requestor should be told that we will telephone them back. As far as is possible, the validity of the request should be established before telephoning back with information. The telephone number should be independently verified if possible.
- f. All reports must be written down by the receiver on paper labelled with the patient's name (and case number where appropriate) or written directly into the case notes. The result must be read back to the member of laboratory staff, to ensure that all numerical values and units are correct. Pre-printed pads for writing down results are available.

10.5 Faxing of Results

Laboratory Medicine no longer fax results in accordance with Trust Guidelines, all results are available electronically.

11.0 The Blood Transfusion Service

Refer to the following policies and guidelines on the intranet

- *Transfusion Clinical Process Policy (Hospital Practice)*
- *Indications for the Transfusion of Blood Components in Adults Policy*
- *Neonatal & Paediatric Transfusion Guideline*
- *Guideline for the use of Prothrombin Complex Concentrate (Octaplex)*
- *Major Haemorrhage guideline*
- *Guideline for patients who refuse blood*

The transfusion laboratory issues the following blood products:

- Red cells
- Fresh Frozen Plasma
- Cryoprecipitate
- Platelets
- Prothrombin Complex Concentrate (Octaplex)
- Anti-D immunoglobulin
- Other factor concentrates

The **Blood Component Transfusion Record Document** (HM-FRM-TEC-0037) must be used for all documentation required in the transfusion process. This incorporates the request form, blood prescription, observation chart, prescribing protocols and general procedural guidance. This document must be used for the prescription of blood components, anti-D immunoglobulin and factor concentrates including Octaplex.

All staff involved in the transfusion process MUST be trained and competency assessed. This is a Trust policy requirement (see the clinical transfusion process policy and the Trust mandatory training policy).

11.1 Provision of Blood in an Emergency

Contact the transfusion lab immediately and provide the patient's ID and location. Be clear about the level of blood provision you require:

- 2 units of emergency O Negative blood available in the top of each blood bank fridge (this is ABO compatible but may not be compatible if the patient has an alloantibody).
- Further emergency group O blood can be issued from the lab within 10 minutes if a suitably labelled sample has not been received. This will be O+ will be issued

to males, women who are not of childbearing potential, O- will be issued to women of childbearing potential or patients known to have allo anti-D. The blood will be labelled as “EMERGENCY Patient”. This is ABO compatible but may not be compatible if the patient has an alloantibody

- ABO/D matched blood can be issued from the lab within 15 minutes of the sample arriving in the lab. This is ABO compatible but may not be compatible if the patient has an alloantibody.
- Fully cross matched blood can take up to 45 minutes from the sample arriving in the lab (sometimes longer if the patient has an allo-antibody).

Emergency blood will arrive by ‘red alert’ porter in a blood box.

11.2 Release, Collection and Storage of Blood

Only trained authorised staff are permitted access to the blood fridges. Staff requiring access to blood bank fridges for their role should contact their ward *Blood Tracking* cascade trainer, who will provide training/assessment and issue the member of staff with a barcode to access the fridge. Any problems with the blood tracking system should be reported immediately to the transfusion laboratory.

Location details	Activity
Blood Bank Maternity Maternity Unit	Storage and issue of blood and blood products
G Block Blood Fridge G Block 2nd Floor	Storage and issue of blood and blood products
Blood Bank Pathology Department	Storage and issue of blood and blood products

11.3 Blood Transfusion Test Repertoire & Turnaround times

Investigation	Specimen requirements	Turnaround times	Special requirements
Antibody Identification referred to National Blood Service	2x7.5ml Blue top transfusion sample	Contact Transfusion Laboratory to discuss current reference laboratory turnaround times	
Cold Agglutinins	7.5ml Transfusion EDTA (separated warm at 37°C)	Contact Transfusion Laboratory to discuss current reference laboratory turnaround times.	Specimen must be collected, received and separated at 37°C (contact laboratory before taking sample)
Crossmatch (Red Cell Issue)	7.5ml Red top transfusion sample	45 minutes from sample in lab – full crossmatch 15 minutes from sample in lab – ABO/D matched only	
Direct Antiglobulin Test	2.7ml EDTA	60 minutes	
Foetal Cell Tests (Maternal Blood and Cord Blood)	7.5ml Red top transfusion sample	Maternal/Cord groups and anti-D issue* 60mins Kleihauer Same day *If not obtained at delivery send 1 red top paediatric	
Blood Group Phenotype (Rh and K)	7.5ml Red top transfusion sample	60 minutes	
Group and Save	7.5ml Red top transfusion sample	60 minutes	Sample saved for 7 days (but validity will depend upon transfusion history)
HLA Typing	7.5ml red top transfusion sample	Contact Transfusion Laboratory to discuss current reference laboratory turnaround times.	
Platelet Immunology (Platelet Antibody)	7.5ml clotted (brown) and EDTA (Red top transfusion bottle)		Contact Transfusion Laboratory to discuss.
Granulocyte Antibody (Neutrophil Antibody)	7.5ml clotted (brown) and EDTA (Red top transfusion bottle)		Contact Transfusion Laboratory to discuss.
Issue of FFP/Platelets and Cryoprecipitate	7.5ml Red top transfusion bottle	Platelets can be provided within 2 hours (or can be sent by 'blue light' emergency delivery) FFP & Cryoprecipitate can be issued within 30 minutes of receiving sample in the laboratory.	

Antenatal grouping & antibody Screening Bloods	7.5ml Red top transfusion sample	Same day	
Transfusion Reaction Investigations	7.5ml red top transfusion sample on request (other samples will be advised dependant on nature of reaction)		Contact the transfusion laboratory or duty scientist. Advice can also be sought from the Hospital Transfusion Team bleep holder in normal hours (bleep 3026)

12.0 Point of Care testing (POCT)

POCT is laboratory testing performed in the clinical setting by non-laboratory healthcare professionals. Specimens include blood, urine and mucosal swabs. POCT provides several advantages including the rapid availability of results to facilitate management. However, POCT is more prone to clinical incidents and more expensive per test than conventional laboratory testing.

Historically, the POCT Team has managed glucose meters, haemoglobin meter and blood gas analysers in primary and secondary care. However, recent years has seen a huge expansion in the repertoire of POCT tests available and patient pathways which utilise POCT. The POCT Team work with clinical teams to ensure this powerful technology is safely implemented and managed.

POCT Support

- The POCT Team are available Monday-Friday 0845-1700h. The team phone number is 01204 390025 (internal 5025), email address: poct@boltonft.nhs.uk.
- Support and guidance is accessible on the intranet POCT webpages: [Point of Care Testing \(sharepoint.com\)](#) (Diagnostic and Support Services > Laboratory Medicine > Point of Care Testing) including
 - [POCT device inventory \(intranet access only\)](#)
 - Information about POCT device training sessions
 - Standard Operating Procedures
 - Manufacturer's Instructions for Use
 - Downloadable device Maintenance sheets

Role of POCT Team

- Advising on the procurement of new and replacement POCT devices.
- Providing POCT Operator training and recompetency (eLearning and face-to-face).
- Providing Standard Operating Procedures and Risk Assessments for POCT.
- Monitoring the analytical quality of POCT results.
- Integrating POCT patient results into EPR (only possible for limited devices – please speak to the POCT Team prior to procurement).
- Advanced maintenance and troubleshooting.
- Auditing.
- Investigating POCT clinical incidents.







Useful Links











POCT webpage: [Point of Care Testing \(sharepoint.com\)](#)











Trust POCT Policy :[POCT Equipment Policy](#)










Appendix 1 – Bolton Test Repertoire Blood Sciences







- Please use Ctrl + F to search for Tests
- Tests not accredited to ISO 15189:2012 are marked †
- For further test information for patients please refer to [Patient Education on Blood, Urine, and Other Lab Tests | Lab Tests Online-UK](#)
- For further test method or costing information please contact the Laboratory Managers.
- **Clinical Chemistry and Haematology specimens from urgent locations (A+E, ICU) have an expected turnaround of 60 minutes.**









Test (A-Z)	Preferred Specimen Container	Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Routine Biochemistry						
Electrolytes	Blood Gel-Separator 	2 hours	See individual tests performed.	NA, K, CL, BIC, U	Available on Laboratory Report.	Clin Chem, BFT
Sodium	Blood Gel-Separator 	4 hours	< 24hrs 16-25 °C	Electrolytes	133-143 mmol/l	Clin Chem, BFT
Potassium	Blood Gel-Separator 	4 hours	12hours 16-20°C	Electrolytes	3.5-5.3 mmol/l	Clin Chem, BFT
Chloride	Blood Gel-Separator 	4 hours	< 24hrs 16-25 °C	Electrolytes	95-108 mmol/l	Clin Chem, BFT
Bicarbonate (Venous)	Blood Gel-Separator 	4 hours	4 hours 16-20°C	Electrolytes	22-29 mmol/L	Clin Chem, BFT
Urea	Blood Gel-Separator 	4 hours	< 24hrs 16-25 °C	Electrolytes	2.5-7.8 mmol/l	Clin Chem, BFT










Test (A-Z)	Preferred Specimen Container	Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Acute Kidney Injury (AKI)	Blood Gel-Separator : Urine calculated test 	Urgent: 2 hours Routine: 4 hours	< 24hrs 16-25 °C	Renal Function	Available on Laboratory Report.	Clin Chem, BFT
Creatinine	Blood Gel-Separator 	4 hours	< 24hrs 16-25 °C	Renal Function	Available on Laboratory Report.	Clin Chem, BFT
Estimated Glomerular Filtration Rate, eGFR	Blood Gel-Separator 	4 hours	< 24hrs 16-25 °C	Renal Function	≥60 mL/min/1.73m ²	Clin Chem, BFT
Bile Acids (Total Bile Acids)	Blood Gel-Separator 	24 hours	Collected in Fasting State. < 24hrs 16-25 °C	Liver Function	<14 UMOL/L	Clin Chem, BFT
Glucose **	Blood Fluoride Oxalate 	4 hours	< 24hrs 16-25 °C	Blood Glucose Investigations	3.5-6mmol/l **Low/High glucose measurements using Point of Care Testing equipment need to be verified by sending a specimen to the laboratory.	Clin Chem, BFT
Bilirubin Total / Direct	Blood Gel-Separator 	4 hours	< 24hrs 16-25 °C	Liver Function	<21 UMOL/L	Clin Chem, BFT
Calcium Metabolism	Blood Gel-Separator 	4 hours	< 24hrs 16-25 °C	Bone investigations	Available on Laboratory Report.	Clin Chem, BFT
Corrected Calcium (adjusted)	Corrected Calcium (adjusted) 	4 hours	Collect in Fasting State. < 24hrs 16-25 °C	Bone investigations	Available on Laboratory Report.	Clin Chem, BFT
Magnesium	Blood Gel-Separator 	4 hours	< 24hrs 16-25 °C	Bone and Muscle investigations	0.7-1.0mmol/l	Clin Chem, BFT
Phosphate	Blood Gel-Separator 	4 hours	< 24hrs 16-25 °C	Bone investigations	0.8-1.5 mmol/l	Clin Chem, BFT











Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Total Protein	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Liver, Kidney and Other investigations	60 - 80 g/L	Clin Chem, BFT
Albumin	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Renal Function	Available on Laboratory Report.	Clin Chem, BFT
Iron	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Blood investigations	5.83-34.4 umol/L	Clin Chem, BFT
Urate, Uric Acid	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Used in the diagnosis and treatment of numerous renal and metabolic disorders	Females=142-339 umol/L. Males=204-416 umol/L	Clin Chem, BFT
CRP (C-Reactive Protein)	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Inflammatory marker	<5 mg/L	Clin Chem, BFT
Alkaline phosphatase (ALP)	Blood Gel-Separator		4 hours	Fasting is preferred but not required for this test. Transport ASAP	Liver and Bone investigations	30-130 U/L	Clin Chem, BFT
Aspartate Amino transferase, AST	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Enzyme investigations	0-40 U/L	Clin Chem, BFT
Alanine Aminotransferase (ALT)	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Liver Investigations	Available on Laboratory Report.	Clin Chem, BFT
Gamma Glutamyl Transferase, GGT	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Liver Function	Females = < 42 IU/L Males= <72 IU/L	Clin Chem, BFT
Creatine Kinase	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Cardiac Markers	Female=25-200IU/L Male=40-320IU/L	Clin Chem, BFT









Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Total Cholesterol	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C Overnight fasting required for a full lipid profile.	Lipid Profile	See charts at back of BNF.	Clin Chem, BFT
HDL Cholesterol	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C Overnight fasting required for a full lipid profile.	Lipid Profile	Male: >1.0 mmol/L Female: >1.2 mmol/L	Clin Chem, BFT
Triglyceride	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C Overnight fasting required for a full lipid profile.	Lipid Profile	<1.7 mmol/L	Clin Chem, BFT
Lactate	Blood Fluoride Oxalate		2 hours	< 24hrs 16-25 °C	Metabolic investigations	Lactate CSF-0.8-2.2 mmol/l. Lactate plasma-0.5-2.2 mmol/l	Clin Chem, BFT
Lactate Dehydrogenase (LDH12)	Blood Gel-Separator		3 hours	< 24hrs 16-25 °C	Muscle and Tissue investigations	<250U/L	Clin Chem, BFT
Alcohol, Ethanol	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Toxicology	<100mg/L	Clin Chem, BFT
Ammonia	Blood EDTA		4 hours	Ensure received within 30 minutes of collection. POD transport is not suitable.	Please Contact the lab before sending the sample.	18-72 umol/l	Clin Chem, BFT
Amylase	Blood Gel-Separator		2 Hours	< 24hrs 16-25 °C	Pancreas Investigations	0-100 IU/L	Clin Chem, BFT
Haemoglobin A1c (HbA1c)**	Blood EDTA		72 hours	< 24hrs 16-25 °C	Blood Glucose Investigations	Treatment target is <48mmol/mol for patients on diet/Metformin and <59 mmol/mol for patients on other oral treatment or insulin.	Haem, BFT**







Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Osmolality	Blood Gel-Separator		36 hours	< 24hrs 16-25 °C	Blood chemical measurements	275-295 mosm/kg	Clin Chem, BFT
Pre-eclampsia / PREE / PLGF-SFLT	Blood Gel-Separator		24 hours	< 24hrs 16-25 °C	Pseudonyms: Placental growth factor; soluble FMS like tyrosine kinase-1	Available on Laboratory Report.	Clin Chem, BFT
Troponin-T	Blood Gel-Separator		2 hours	< 24hrs 16-25 °C	Cardiac Markers - Chest Pain Pathway	<14 ng/L	Clin Chem, BFT
Synacthen (short) test	Blood Plain		Same day	250 mg Synacthen given i.m. at 9.00 am although the timing is not crucial. Blood taken into PLAIN tube for serum cortisol before, 30 min and 60 min after injection. (NB: 36 mg Synacthen/kg for children up to max 250 mg) - clearly label with times taken.	Adrenocortical Function Assessment	Baseline cortisol (9am)=>166nmol/l. Peak value=>500nmol/l (normal). Peak value=<450nmol/l (suggests insufficiency).	Clin Chem, BFT
CK Isoenzymes, Macro CK †	Blood Gel-Separator		Please discuss with the duty biochemist.	Please discuss with the duty biochemist.	Muscle studies	Available on Laboratory Report.	Clin Chem, BFT
Glucose tolerance test	Blood Fluoride Oxalate		2 hours	Fast 12hours overnight. 1st sample, 75g glucose, after 2hours 2nd sample.	Measures bodies response to sugar	Available on Laboratory Report.	Clin Chem, BFT









Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Fluid Analysis of Protein, Amylase, Glucose, Creatinine, Potassium, Cholesterol, Albumin, Triglycerides, Creatinine, Urea, LD, Lactate. †	Fluid - sterile container		Please discuss with the duty biochemist.	Please discuss with the duty biochemist.	Various	Available on Laboratory Report.	Clin Chem, BFT
Haematinics - Iron Studies							
B12	Blood Gel-Separator		24 hours	< 24hrs 16-25 °C	Haematinics	170-730 ng/l	Clin Chem, BFT
Ferritin	Blood Gel-Separator		24 hours	< 24hrs 16-25 °C	Haematinics	Females 13-150 ug/l Males 30-400 ug/l	Clin Chem, BFT
Folate	Blood Gel-Separator		24 hours	2 hours at 15-25 °C	Haematinics	3.9-26.8 ng/ml	Clin Chem, BFT
Iron Binding Capacity, Unsaturated, UIBC,	Blood Gel-Separator		24 hours	< 24hrs 16-25 °C	Haematinics	Total iron binding capacity-45-72 umol/l (serum)	Clin Chem, BFT
Endocrinology							
Prolactin	Blood Gel-Separator		72 hours	< 24hrs 16-25 °C	Endocrine investigations	Female=150-812 IU/L, Male=115-523 IU/L	Clin Chem, BFT
Testosterone	Blood Gel-Separator		48 hours	< 24hrs 16-25 °C	Endocrine investigations	Females=0.3-1.67 nmol/L. Males=8.7-29 nmol/L	Clin Chem, BFT
Sex Hormone Binding Globulin (SHBG)	Blood Gel-Separator		48 hours	< 24hrs 16-25 °C	Endocrine investigations	Females=13-128 mg/L males=18-54.1 mg/L	Clin Chem, BFT







Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Parathyroid hormone, PTH	Blood Gel-Separator		48 hours	Sample must be sent to the lab immediately after being taken	Endocrine investigations	1.1-4.7 pmol/L	Clin Chem, BFT
Procalcitonin	Blood Gel-Separator		24 hours	< 24hrs 16-25 °C	Endocrine investigations	Please contact reference laboratory for current reference ranges.	Clin Chem, BFT
Progesterone	Blood Gel-Separator		24 hours	< 24hrs 16-25 °C. The date of the last menstrual period or the day of the menstrual cycle must be given & any treatment must be described.	Endocrine investigations	Day 21 of a 28 day cycle 30-80 nmol/l	Clin Chem, BFT
Cortisol	Blood Gel-Separator		48 hours	< 24hrs 16-25 °C	Adrenal Gland Function	9am=166-507 nmol/L. midnight= up to 190 nmo/L	Clin Chem, BFT
Vitamin D	Blood Gel-Separator		72 hours	Sample must be sent to the lab immediately after being taken	Endocrine investigations	See Reference ranges	Clin Chem, BFT
Human Chorionic Gonadotrophin (beta HCG)	Blood Gel-Separator		24 hours	< 24hrs 16-25 °C	Pregnancy Investigations	Non-pregnant < 2.0 U/L	Clin Chem, BFT
Follicle Stimulating Hormone, FSH	Blood Gel-Separator		48 hours	< 24hrs 16-25 °C	Adrenal Gland Function	Available on Laboratory Report.	Clin Chem, BFT
Gonadotrophins	Blood Gel-Separator		48 hours	< 24hrs 16-25 °C	Adrenal Gland Function	Available on Laboratory Report.	Clin Chem, BFT
Luteinising Hormone, LH	Blood Gel-Separator		48 hours	< 24hrs 16-25 °C	Adrenal Gland Function	Available on Laboratory Report.	Clin Chem, BFT


Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Free Thyroxine (fT4)	Blood Gel-Separator		24 hours	< 24hrs 16-25 °C	Thyroid Studies	12-22 pmol/L	Clin Chem, BFT
fT3, Tri-iodothyronine, Free Total T3, fTT3	Blood Gel-Separator		72 hours	< 24hrs 16-25 °C	Thyroid Studies	1.3-3.1nmol/l	Clin Chem, BFT
Thyroid Stimulating Hormone, TSH	Blood Gel-Separator		72 hours	< 24hrs 16-25 °C	Thyroid Studies	0.2-5.0 mu/L	Clin Chem, BFT
Anti Tpo, Thyroid Peroxidase Antibody	Blood Gel-Separator		48 hours	< 24hrs 16-25 °C	Part of Thyroid antibodies.	Positive / Negative	Clin Chem, BFT
Oestradiol	Blood Gel-Separator		24 hours	< 24hrs 16-25 °C	Endocrine investigations	Available on Laboratory Report.	Clin Chem, BFT
Pro Brain Natriuretic Peptide (BNP) or NT Pro BNP	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Cardiac Markers	400-2000 ng/L	Clin Chem, BFT
Immunology							
Alpha-1-antitrypsin (A1AT)	Blood Gel-Separator		2 hours	< 24hrs 16-25 °C	Liver Investigations	Available on Laboratory Report.	Clin Chem, BFT
C3, Complement C3	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Complement investigations	0.9-1.8 g/L	Clin Chem, BFT
C4, Complement C4	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Complement investigations	0.1-0.4 g/L	Clin Chem, BFT
Anti cyclic citrullinated peptide; Anti Ccp, CCP, PEP	Blood Gel-Separator		7 days**	< 24hrs 16-25 °C	Rheumatoid investigations	**Positive results referred for confirmation.	Clin Chem, BFT

Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Electrophoresis - Albumin, Alpha-1-glycoprotein, Alpha-2-glycoprotein, Beta Globulin, Gamma Globulin (serum)	Blood Gel-Separator		14 days	< 24hrs 16-25 °C	Protein Electrophoresis (serum)	Available on Laboratory Report.	Clin Chem, BFT
Electrophoresis for Paraproteins (Myeloma, Immunoglobulins)	Blood Gel-Separator & Early Morning Urine (20mL)	 	4 days or 4 hours	Send 7.5ml clotted brown sample & an early morning urine sample (20 ml in a plain container) at the same time. See Protein Electrophoresis (serum & urine)	Heavy chains: IgG, IgA, IgM Light chains: kappa, lambda	Available on Laboratory Report.	Clin Chem, BFT
Cryoglobulins †	Blood Plain		7 days	Onsite specimen collection only - must be maintained at 37°C. Overnight fasting is required for analysis.	Blood Protein investigations	Available on Laboratory Report.	Clin Chem, BFT
IgA	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Serum Electrophoresis	Available on Laboratory Report.	Clin Chem, BFT
IgG	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Serum Electrophoresis	7-16 g/l	Clin Chem, BFT
IgM	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Serum Electrophoresis	0.4-2.3 g/l	Clin Chem, BFT
Rheumatoid Factor, RF	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Autoantibody investigations	Negative=<20iu/ml Borderline positive=20-25iu/ml Positive=>25iu/ml	Clin Chem, BFT





Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Tissue transglutaminase IgA , tTG, Gliadin antibody, Gluten sensitivity test	Blood Gel-Separator		72 hours	< 24hrs 16-25 °C	Gluten sensitivity test, Coeliac Disease	Positive tTG IgA results >= 5.0 AU/ml are referred for further testing at Central Manchester Hospital	Clin Chem, BFT
Tumour Markers							
Alpha-fetoprotein (AFP)	Blood Gel-Separator		24 hours	< 24hrs 16-25 °C	Tumour marker	0-10 KU/L	Clin Chem, BFT
CA 125	Blood Gel-Separator		24 hours	< 24hrs 16-25 °C	Ovarian Cancer Marker	<35 IU/L	Clin Chem, BFT
Carcinoembryonic antigen	Blood Gel-Separator		24 hours	< 24hrs 16-25 °C	Tumour marker	<3 KU/l	Clin Chem, BFT
Prostate Specific Antigen - Total (PSA)	Blood Gel-Separator		24 hours	< 24hrs 16-25 °C	Please contact Biochemist before sending request for Free-PSA	Up to 54 years=3.1ug/l, 54-59 years=4.2ug/l, 59-64years=5.4ug/l, 64-69years =6.2ug/l, >69 years=6.7ug/l	Clin Chem, BFT
Drug Studies							
Toxicology	See User Information	A limited service is available. Give details of all drugs suspected of being taken. Gastric contents (not washings) & urine (50ml) in a plain container should be obtained. All specimens in cases of suspected poisoning should be sent to the laboratory for storage even if no analysis is required. The specimen will be kept for one month in case analysis is required at a later date.					Clin Chem, BFT
Carbamazepine, Tegretol, Teril, Timonil	Blood Gel-Separator		48 hours	< 24hrs 16-25 °C	Drug Therapeutic Levels	4-12 mg/l	Clin Chem, BFT







Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Digoxin	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Drug Therapeutic Levels	0.6-1.2 ug/l	Clin Chem, BFT
Gentamicin Pre/Post/Random	Blood Gel-Separator		2 hours	< 24hrs 16-25 °C	Antibiotic Levels	PRE=<1 mg/ml. POST=7-10 mg/ml	Serology, Clin Chem, BFT
Lithium	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Drug Therapeutic Levels	0.4-1.0mmol/l	Clin Chem, BFT
Paracetamol (Acetaminophen)	Blood Gel-Separator		2 hours	Collect samples at least 4 hours after ingestion and interpret results according to nonogram in current version of BNF. Levels do not need to be repeated- Use prothrombin time or AST.	Drug Levels	Available on Laboratory Report. Use nonogram in current version of BNP	Clin Chem, BFT
Phenytoin, Epanutin	Blood Gel-Separator		4 hours	< 24hrs 16-25 °C	Drug Therapeutic Levels	Available on Laboratory Report.	Clin Chem, BFT
Salicylate	Blood Gel-Separator		2 hours	< 24hrs 16-25 °C	Drug Therapeutic Levels	Available on Laboratory Report.	Clin Chem, BFT
Theophylline	Blood Gel-Separator		2 hours	< 24hrs 16-25 °C	Drug Therapeutic Levels	10-20 mg/l	Clin Chem, BFT
Valproate, Valproic acid, Epilim, Convulex	Blood Gel-Separator		4 Hours	< 24hrs 16-25 °C	Drug Therapeutic Levels	Available on Laboratory Report.	Clin Chem, BFT







Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Vancomycin Pre/Post/Random	Blood Gel-Separator		4 Hours	< 24hrs 16-25 °C	Antibiotic Levels	Pre dose=10-20mg/L Normal range for Bacteraemia, Endocarditis, Osteomyelitis & MRSA Pneumonia=15-20 mg/L.	Serology, Clin Chem, BFT
CSF Biochemistry							
CSF Glucose	Blood Fluoride Oxalate		2 hours	3 hours at 16-25 °C	CSF investigations	2.5-4.5mmol/l	Clin Chem, BFT
CSF Lactate	Blood Fluoride Oxalate		2 hours	3 hours at 16-25 °C	CSF investigations	0.8-2.2mmol/l	Clin Chem, BFT
CSF Protein	Blood Fluoride Oxalate		2 hours	3 hours at 16-25 °C	CSF investigations	0.15-0.45g/l	Clin Chem, BFT
Xanthochromia Screening †	CSF - Plain sterile container		24 hours	<3hrs 16-25 °C Vol. 800µL Protect from the light.	Subarachnoid Haemorrhage (SAH)	Available on Laboratory Report.	Clin Chem, BFT
Faeces Biochemistry							
Calprotectin	Faeces		4 days	< 24hrs 16-25 °C	Inflammatory marker	Available on Laboratory Report.	Clin Chem, BFT








Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Faecal Immunochemical Test, FIT	Faeces in MAST OC-Sensor device		7 days - Two runs per week	48hrs 16-25 °C Patient packs are available from Laboratory Medicine.	Blood in Stool testing.	Available on Laboratory Report.	Clin Chem, BFT







Urinalysis - 24 hours urine containers must be collected from Laboratory Medicine

Albumin:Creatinine Ratio	24-hour urine or 2nd morning urine.		4 hours	Calculated test	Renal Function	Available on Laboratory Report. See NICE guidance for use of ACR in monitoring progression of renal disease.	Clin Chem, BFT
Amylase (urine) †	Plain container 24hr Urine		2 days	< 24hrs 16-25 °C. Contact Chem Lab before collecting sample.	Pancreas Function	Available on Laboratory Report.	Clin Chem, BFT
Bence Jones Protein †	10mL Plain Collection		14 days	< 24hrs 16-25 °C Urine and Serum required. Early morning sample preferred	Renal Function	Available on Laboratory Report.	Clin Chem, BFT
Calcium (urine)	Acidified (HCl) 24hr Urine		4 hours	< 24hrs 16-25 °C	Renal, Bon and Other Functions	Available on Laboratory Report.	Clin Chem, BFT



Test (A-Z)	Preferred Specimen Container	Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Creatinine clearance	Plain container 24hr Urine & Blood Gel-Separator 	4 hours	< 24hrs 16-25 °C	Renal Function	90-130ml/min	Clin Chem, BFT
Electrophoresis (urine)	Plain container 10mL Urine 	14 days	< 24hrs 16-25 °C Must be in a yellow capped urine container with NO preservatives.	Myeloma studies	Available on Laboratory Report.	Clin Chem, BFT
Haemosiderin (Urinary Haemosiderin) **	Plain container 10mL Urine 	14 days	< 24hrs 16-25 °C Must be in a yellow capped urine container with NO preservatives.	Blood studies .	See Laboratory Report	Haem, BFT
Microalbumin ACR (urine)	Plain container 10mL Urine 	12 hours	< 24hrs 16-25 °C Must be in a yellow capped urine container with NO preservatives.	Must be in a yellow capped urine container with NO preservatives.	Reference ranges	Clin Chem, BFT
Osmolality (Urine)	Plain container 10mL Urine. Random Urine Sample 	2 hours	< 24hrs 16-25 °C Must be in a yellow capped urine container with NO preservatives.	Renal and Metabolic studies	40-1400 mosm/kg	Clin Chem, BFT
Potassium (urine)	Plain container 24hr Urine or Random Urine 	2 days	< 24hrs 16-25 °C	Renal and Metabolic studies	Available on Laboratory Report.	Clin Chem, BFT








Test (A-Z)	Preferred Specimen Container	Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Protein : Creatinine ratio	Plain container 24hr Urine 	24 hours	Calculated test. In Pregnancy. Albumin:Creatinine should otherwise be requested.	Renal and Metabolic studies	<100mg/mmol	Clin Chem, BFT
Sodium excretion (urine)	Plain container 24hr Urine 	4 hours	Collect 24-hour urine without additives. Store refrigerated during collection.	Electrolytes are involved in most major metabolic functions in the body	Available on Laboratory Report.	Clin Chem, BFT
Urea (urine)	Plain container 24hr Urine 	4 Hours	< 24hrs 16-25 °C	Renal and Metabolic studies	428-714 mmol/24hr	Clin Chem, BFT
Uric acid (Urate) (Urine)	Plain container 24hr Urine 	4 Hours	4 days at 20-25 °C (upon addition of NaOH) - add sodium hydroxide to keep urine alkaline (pH > 8.0)	Renal and Metabolic studies	Available on Laboratory Report.	Clin Chem, BFT
Serology and Infectious Disease in Blood Tube testing						
CMV IgM Antibody (Cytomegalovirus)	Blood Gel-Separator 	4 days**	< 24hrs 16-25 °C	Viral Antibody detection	Positive / Negative. ** Positive Confirmatory Testing Referred to Virology MFT.	Serology, Clin Chem, BFT
HBV Antibody level	Blood Gel-Separator 	4 days**	< 24hrs 16-25 °C	Viral Antibody detection	Positive / Negative. ** Positive Confirmatory Testing Referred to Virology MFT.	Serology, Clin Chem, BFT







Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Hepatitis A IgM Antibody	Blood Gel-Separator		4 days**	< 24hrs 16-25 °C	Viral Antibody detection	Positive / Negative. ** Positive Confirmatory Testing Referred to Virology MFT.	Serology, Clin Chem, BFT
Hepatitis B Core (Total) Antibody	Blood Gel-Separator		4 days**	< 24hrs 16-25 °C	Viral Antibody detection	Positive / Negative. ** Positive Confirmatory Testing Referred to Virology MFT.	Serology, Clin Chem, BFT
Hepatitis B Surface Antibody, Hepatitis Immunity, Hepatitis B Status	Blood Gel-Separator		4 days	< 24hrs 16-25 °C	Viral Antibody detection - post vaccine	0-10iu (not detected) 10-100iu (low level) 101-500iu (satisfactory response to vaccine) >500iu (good response to vaccine)	Serology, Clin Chem, BFT
Hepatitis B Surface Antigen	Blood Gel-Separator		2 days**	< 24hrs 16-25 °C	Viral Antigen detection	Positive / Negative. ** Positive Confirmatory Testing Referred to Virology MFT.	Serology, Clin Chem, BFT
Hepatitis C Antibody Screen	Blood Gel-Separator		4 days**	< 24hrs 16-25 °C	Viral Antibody detection	Positive / Negative. ** Positive Confirmatory Testing Referred to Virology MFT.	Serology, Clin Chem, BFT
Hepatitis Screen, Hepatitis Serology, Hepatitis ABC Screen	Blood Gel-Separator		4 days**	< 24hrs 16-25 °C	Viral Antibody detection	Positive / Negative. ** Positive Confirmatory Testing Referred to Virology MFT.	Serology, Clin Chem, BFT
HIV antibody/antigen	Blood Gel-Separator		2 day **	< 24hrs 16-25 °C	Viral Antibody detection	Positive / Negative. ** Positive Confirmatory Testing Referred to Virology MFT.	Serology, Clin Chem, BFT









Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Measles IgG Antibody	Blood Gel-Separator		4 days	< 24hrs 16-25 °C	Immunity Screen	Positive / Negative.	Serology, Clin Chem, BFT
Rubella Antibody, Rubella IgG	Blood Gel-Separator		4 days	< 24hrs 16-25 °C	Immunity Screen	Result reported as Positive or Negative	Serology, Clin Chem, BFT
Rubella IgM Antibody	Blood Gel-Separator		4 days**	< 24hrs 16-25 °C URGENT for Pregnancy	Viral Antibody detection	Positive / Negative. ** Positive Confirmatory Testing Referred to Virology MFT.	Serology, Clin Chem, BFT
Syphilis TP	Blood Gel-Separator		2 day **	< 24hrs 16-25 °C	Spirochete Antibody detection	Positive / Negative. ** Positive Confirmatory Testing Referred to Virology MFT.	Serology, Clin Chem, BFT
Toxoplasma IgM Antibody	Blood Gel-Separator		4 days**	< 24hrs 16-25 °C	Protozoan Antibody detection	Result reported as Positive or Negative. Positive results referred for confirmation.	Serology, Clin Chem, BFT
Varicella Zoster IgG (VZV)	Blood Gel-Separator		4 days**	< 24hrs 16-25 °C URGENT for Pregnancy	Immunity Screen	Positive / Negative. ** Positive Confirmatory Testing Referred to Virology MFT.	Serology, Clin Chem, BFT





Routine Haematology

FBC, Full Blood Count	Blood EDTA		Urgent: 1 hours Non-Urgent: 6 hours	< 24hrs 16-25 °C	Full Blood Count	See Laboratory Report	Haem, BFT
Haemoglobinopathy screen (Hb Variant / thalassaemia)	Blood EDTA		72 hours	< 24hrs 16-25 °C		See Laboratory Report	Haem, BFT




Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Malaria Parasite, Plasmodium species identification	Blood EDTA		24 hours	< 24hrs 16-25 °C	Malaria detection	See Laboratory Report	Haem, BFT
Glandular fever, SCAT TEST, Infectious mononucleosis heterophile antibody, EBV	Blood Gel-Separator		24 hours	< 24hrs 16-25 °C	Glandular Fever detection	Positive or Negative	Haem, BFT
G6PD, Glucose-6-Phosphate Dehydrogenase	Blood EDTA		1 day	< 24hrs 16-25 °C	Blood studies	See Laboratory Report	Haem, BFT
Sickle cell screen (Haemoglobin S)	Blood EDTA		Pre-op: Same Day	< 24hrs 16-25 °C	Sickle cell screen	See Laboratory Report	Haem, BFT
Erythrocyte Sedimentation rate (ESR)	Blood EDTA		4 hours	< 24hrs 16-25 °C	Blood studies	See Laboratory Report	Haem, BFT
Reticulocyte count	Blood EDTA		2 hours	< 24hrs 16-25 °C	Full Blood Count	0.2-2.5%	Haem, BFT
Blood film	Blood EDTA		24 hours	< 24hrs 16-25 °C	Blood Studies	See Laboratory Report	Haem, BFT
Bone Marrow examination †	Please contact the duty Consultant Haematologist for specimen requirements				Blood Studies	See Laboratory Report	Haem, BFT








Test (A-Z)	Preferred Specimen Container	Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory	
Coagulation							
Activated Partial Thromboplastin time, APTT	Blood Citrate		2 hours	< 24hrs 16-25 °C	Coagulation Screen	25-36 sec	Haem, BFT
Prothrombin time	Blood Citrate		2 hours	< 24hrs 16-25 °C	Coagulation Screen	9.6-12.4s	Haem, BFT
Fibrinogen assay (Claus)	Blood Citrate		2 hours	< 24hrs 16-25 °C	Coagulation Screen	2.2-4.7 g/L	Haem, BFT
Inhibitor screen (APTT & PT)	Blood citrate		24 hours	< 24hrs 16-25 °C	Coagulation Screen	See Laboratory Report	Haem, BFT
D-Dimer	Blood citrate		2 hours	< 24hrs 16-25 °C	DVT Screen / Clotting Screen	< 230 ng/ml	Haem, BFT
Thrombophilia screen	See Test Set Information		42 days	Test Set Consists of Anti thrombin, Free Protein S, Protein C, Lupus Anitcoagulant, Factor V mutation, Prothrombin time, Activated Partial Thrombin Time, Fibrinogen (Claus)	See Laboratory Report	Haem, BFT	
Antithrombin, Functional Antithrombin	Blood Citrate		Within 3 weeks	< 24hrs 16-25 °C	Thrombophilia screen	77.9-122.2 iu/dL	Haem, BFT







Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Functional Protein C	Blood Citrate		Within 3 weeks	< 24hrs 16-25 °C	Thrombophilia screen	77.7-149 iu/dL	Haem, BFT
Free Protein S, Protein S Free Antigen,	Blood Citrate		Within 3 weeks	< 24hrs 16-25 °C	Thrombophilia screen.	Female <50 years: 57.6-115.4 u/dL. Female >50 years=70.4-130.2 u/dL . Male: 65.9-120.8 u/dL	Haem, BFT
Lupus Anticoagulant, Lupus Inhibitor	Blood Citrate		Within 3 weeks	Test Set Consists of Lupus Anticoagulant, Prothrombin Time, Activated Thrombin Time and Fibrinogen (Claus)		See Laboratory Report	Haem, BFT
Factor II assay	Blood citrate		Urgent : 3 hours Prior arrangement with lab required.	Specimens < 4hours are recommended. Prior arrangement with Lab required.	Factor Assays	60-120%	Haem, BFT
Factor IX assay	Blood citrate		Within 3 weeks	Specimens < 4hours are recommended. Prior arrangement with Lab required.	Factor Assays	60-160%	Haem, BFT
Factor V assay	Blood citrate		Within 3 weeks	Specimens < 4hours are recommended. Prior arrangement with Lab required.	Factor Assays	60-140%	Haem, BFT
Factor VII assay	Blood citrate		Within 3 weeks	Specimens < 4hours are recommended. Prior arrangement with Lab required.	Factor Assays	70-125%	Haem, BFT
Factor X assay	Blood citrate		Within 3 weeks	Specimens < 4hours are recommended. Prior arrangement with Lab required.	Factor Assays	70-130%	Haem, BFT




Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Factor XI assay	Blood citrate		Within 3 weeks	Specimens < 4hours are recommended. Prior arrangement with Lab required.	Factor Assays	65-140%	Haem, BFT
Factor XII assay	Blood citrate		Within 3 weeks	Specimens < 4hours are recommended. Prior arrangement with Lab required.	Factor Assays	22-253%	Haem, BFT
Heparin Anti Xa Asy	Blood Citrate		48 hours	Anti-Xa levels should be checked at their peak at 4 hours after dosing. Specimens < 4hours are recommended. Prior arrangement with Lab required.	To monitor patients on Low Molecular Weight Heparin (LMWH)	See Laboratory Report	Haem, BFT
Platelet count (for patient with Platelet Clumping)	Blood Citrate		2 hours	< 24hrs 16-25 °C	Full Blood Count	See Laboratory Report	Haem, BFT

Molecular Haematology




Factor V Leiden mutation	Blood EDTA		Within 6 weeks	Send to laboratory within 2 hours.	Thrombophilia studies	See Laboratory Report	Haem, BFT
BCR-ABL MRD (Minimal Residual Disease Monitoring) for monitoring	Blood EDTA		48 hours	< 24hrs 16-25 °C. Prior arrangement with lab required.	Molecular Testing for some forms of Leukaemia	See Laboratory Report	Haem, BFT
Prothrombin Gene Mutation G20210A	Blood EDTA		14 days	Send to laboratory within 2 hours.	Thrombophilia studies	See Laboratory Report	Haem, BFT




Test (A-Z)	Preferred Specimen Container	Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory	
Blood Transfusion							
Antibody Screening and Identification	2 x 7.5ml red top EDTA sample		Sent to Referral Laboratory	< 24hrs 16-25 °C	Blood Antigen:Antibody testing	Confirmatory Testing, Quantification and Titres may be referred.	Blood Transfusion, BFT
Cold Agglutinins	7.5ml red top EDTA sample		Referred - Contact Laboratory	< 24hrs 16-25 °C	Autoantibody investigations	Refer to the Laboratory Report	Blood Transfusion, BFT
Crossmatch (Red cell issue)	7.5ml, 2.7ml or 1.2ml red top EDTA sample		45 mins -full crossmatch 15 mins-ABO/D matched only	< 24hrs 16-25 °C	Blood Antigen:Antibody testing	Refer to the Laboratory Report	Blood Transfusion, BFT
Cryoprecipitate (Issue of)	7.5ml, 2.7ml or 1.2ml red top EDTA sample		30 minutes	n/a	issue of Cryprecipitate	Not Applicable	Blood Transfusion, BFT
Direct Antiglobulin Test (DAT)	7.5ml, 2.7ml or 1.2ml red top EDTA sample		60 minutes	< 24hrs 16-25 °C	Qualitative procedure for the detection of IgG or complement bound to red blood cells	Refer to the Laboratory Report	Blood Transfusion, BFT
Foetal cell tests (Maternal blood & cord blood*)	7.5ml red top EDTA sample & Paediatric EDTA		Maternal/cord groups & anti-D issue=60 mins. Kleihauer=same day	< 24hrs 16-25 °C	Feto-maternal Haemorrhage (FMH) : Foetal cell count	Refer to the Laboratory Report	Blood Transfusion, BFT
Foetal RhD screen (ffDNA), Cell Free Fetal DNA	7.5ml, 2.7ml or 1.2ml red top EDTA sample		Referred - Contact Laboratory	< 24hrs 16-25 °C	Determine fetal blood group antigens	Refer to the Laboratory Report	Blood Transfusion, BFT

Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Foetal Blood Group Genotyping	Maternal : 2x 7.5ml EDTA		Referred - Contact Laboratory	< 24hrs 16-25 °C	Determine fetal blood group antigens	Refer to the Laboratory Report	Blood Transfusion, BFT
FFP - Fresh Frozen Plasma (Issue of)	7.5ml, 2.7ml or 1.2ml red top EDTA sample		30 minutes	n/a	Issue of FFP	Not Applicable	Blood Transfusion, BFT
Granulocyte Antibody	7.5ml red top EDTA sample		Referred - Contact Laboratory	< 24hrs 16-25 °C	Granulocyte Antibody	Refer to the Laboratory Report	Blood Transfusion, BFT
Group & Save	7.5ml, 2.7ml or 1.2ml red top EDTA sample		Urgent: 60 minutes	< 24hrs 16-25 °C	Blood Group by Antigen detection	Sample saved for 7 days (but validity will depend on transfusion history)Refer to the Laboratory Report	Blood Transfusion, BFT
HLA (Human Leukocyte Antigen) antibody screen, typing and associated disease investigations	7.5ml red top EDTA sample & Blood Gel-Separator		Referred - Contact Laboratory	< 24hrs 16-25 °C	HLA - associated disease investigations	Refer to the Laboratory Report	Blood Transfusion, BFT
Routine Antenatal Anti D Prophylaxis (RAADP) Procedure	Procedure determined at 28weeks	n/a	n/a	n/a	Determine requirement for Anti D Prophylaxis	Refer to the Laboratory Report	Blood Transfusion, BFT
Platelet Immunology (Platelet antibody)	7.5ml red top EDTA sample		Referred - Contact Laboratory	< 24hrs 16-25 °C	Platelet Antibody	Refer to the Laboratory Report	Blood Transfusion, BFT

Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Platelet (Issue of)	7.5ml red top EDTA sample & Blood Gel-Separator		2 hours (or can be sent by 'blue light' emergency delivery)	n/a	Issue of Platelets	Not Applicable	Blood Transfusion, BFT
Blood Group Phenotype (Rh & Kell)	7.5ml red top EDTA sample		60 minutes	< 24hrs 16-25 °C	Red Cell antibody detection	Refer to the Laboratory Report	Blood Transfusion, BFT
Transfusion Reaction Investigations	7.5ml red top EDTA sample (other samples will be advised dependant on nature of reaction)		Contact Laboratory	n/a	Transfusion Reaction Investigations : Various tests	Contact the transfusion laboratory or duty scientist. Advice can also be sought from the Hospital Transfusion Team bleep holder in normal hours (bleep 3026)	Blood Transfusion, BFT





Antenatal Screening - Down's, Edward's and Patau's syndromes









Papp-A (Pregnancy Associated plasma protein-A)	Blood Gel-Separator		3 working days	Samples should be spun and refrigerated as soon as possible upon receipt in the referring laboratory. Spun serum samples are stable at room temperature for 72 hours and up to 14 days at 4°C. Whole blood samples may	First Trimester Screening Fast-Track First Trimester Screening	Refer to the Laboratory Report	Antenatal Screening, BFT
Free beta HCG	Blood Gel-Separator		3 working days		First Trimester Screening Fast-Track First Trimester Screening	Refer to the Laboratory Report	Antenatal Screening, BFT
AFP	Blood Gel-Separator		3 working days		Downs Syndrome Second Trimester Screening	Refer to the Laboratory Report	Antenatal Screening, BFT




Test (A-Z)	Preferred Specimen Container		Median Turnaround (M-F)	Specimen Collection and Transport Requirements (Limits)	What is it?	Clinical Decision Limits	Laboratory
Total HCG	Blood Gel-Separator		3 working days	be sent directly to Bolton laboratory within 48 hours of collection and are stable refrigerated (4°C) for up to 5 days. Exposure of samples to temperatures in excess of 30°C can cause rapid deterioration of free beta HCG (within 4 hours) and therefore this should be avoided	Downs Syndrome Second Trimester Screening	Refer to the Laboratory Report	Antenatal Screening, BFT
Unconjugated oestriol (UE3)	Blood Gel-Separator		3 working days		Downs Syndrome Second Trimester Screening	Refer to the Laboratory Report	Antenatal Screening, BFT
Inhibin A (second trimester screening)	Blood Gel-Separator		3 working days		Downs Syndrome Second Trimester Screening	Refer to the Laboratory Report	Antenatal Screening, BFT

Appendix 2 – Referred Tests Repertoire Blood Sciences

- Please use Ctrl + F to search for Tests or the A-Z List
- Test accreditation is listed
- Where no special collection or transport requirements are stated, please send samples to the lab as soon as practical or within 24hrs 16-25 °C
- The most frequently requested referred tests are listed, for tests not listed please contact the laboratory
- For further test method or costing information please contact the laboratory.






Test (A-Z)	Preferred Specimen Container	Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Department of Biochemistry, Salford Royal Foundation Trust. Pathology at Wigan and Salford (PAWS).				
Tel 0161 206 4958 Website Pathology - Northern Care Alliance and Wroughtington, Wigan & Leigh :: Northern Care Alliance				
24hour Cortisol Excretion - urine	Plain 24hr Urine		21 days	<
Metadrenaline - urine	Acid 24hr Urine		21 days	Samples with urine pH ≥ 6.5 are unsuitable for metadrenaline estimation.
5-HIAA (5-hydroxyindole acetic acid) - urine	Acid 24hr Urine		21 days	A UKAS accredited medical laboratory No. 8331
Routine Drug Screen - urine	Random urine, >1mL		14 days	Routine drug screen, ethanol not routinely tested.








Test (A-Z)	Preferred Specimen Container	Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Laxative Screen – urine	Random urine, 20 mL 	21 days	Ideally collect 3 samples on consecutive days during symptoms. Screen: Bisacodyl (Dulcolax), Danthron, Rhein (Senokot) and Phenolphthalein	NOT UKAS ACCREDITED TO ISO 15189:2012
Magnesium- Urine	Plain 24hr Urine 	7 days		A UKAS accredited medical laboratory No. 8331
Porphyryns - urine (PBG, ALA and porphyryns)	Random urine, 10 mL 	21 days	Sample must be protected from light. Avoid delay. PBG: Porphobilinogen ALA: Aminolevulinic Acid	A UKAS accredited medical laboratory No. 8331
Porphyryn, red cell or plasma	EDTA (red) or Lithium heparin (orange) 2 mL 		Sample must be protected from light. Avoid delay	A UKAS accredited medical laboratory No. 8331
ACTH (Adrenocorticotropic hormone)	5mL EDTA 	21 days	Sample needs to be sent within 6 hours of collection (at room temperature). Hospital collection recommended.	A UKAS accredited medical laboratory No. 8331
Androgens, Testosterone, Testosterone Extraction,	Blood Gel-Separator 	14 days	Performed on female patients.	A UKAS accredited medical laboratory No. 8331 ** Testosterone NOT UKAS ACCREDITED TO ISO 15189:2012
Androstenedione	Blood Gel-Separator 	7 days		NOT UKAS ACCREDITED TO ISO 15189:2012
DHEAS (Dihydroepiandrosten edione sulphate)	Blood Gel-Separator 	14 days		A UKAS accredited medical laboratory No. 8331

Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Fructosamine	Blood Gel-Separator		21 days		A UKAS accredited medical laboratory No. 8331
Metadrenaline, Metanephrines and Normetadrenaline	Blood EDTA		21 days	Please contact the lab before sending the sample for testing. Fasting sample preferred. Avoid caffeine. Patient should ideally be supine. Send to lab within 1 hour - Sample requires to be spun and frozen asap following venepuncture.	A UKAS accredited medical laboratory No. 8331
Oligoclonal bands, Intrathecal IgG Synthesis (CSF)	CSF – 1mL		7 days	Blood stained CSF not accepted. Concurrent Blood Gel-Separator Required.	A UKAS accredited medical laboratory No. 8331



Department of Biochemistry, Wythenshawe Hospital, Wythenshawe, Manchester M23 9LT












Tel 0161 291 2136 Website [Laboratory Medicine at Wythenshawe hospital - Manchester University NHS Foundation Trust \(mft.nhs.uk\)](http://Laboratory%20Medicine%20at%20Wythenshawe%20hospital%20-%20Manchester%20University%20NHS%20Foundation%20Trust%20(mft.nhs.uk))











5HIAA (Serum)	Blood Gel-Separator		5 days	Sample should be taken after overnight fast Avoid serotonin containing foods	A UKAS accredited medical laboratory No. 9063
Aldosterone	Blood EDTA		7 days		A UKAS accredited medical laboratory No. 9063
Angiotensin Converting Enzyme (ACE)	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 9063
Faecal elastase	Faeces		14 days	Watery/runny or mucousy stool samples may have falsely low results due to dilution. Send a formed stool sample where possible.	A UKAS accredited medical laboratory No. 9063
FK 50, FK506, Tacrolimus	Blood EDTA		7 days		A UKAS accredited medical laboratory No. 9063











Test (A-Z)	Preferred Specimen Container	Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Oxalate excretion (Urine)	Acid 24hr Urine 	21 days		A UKAS accredited medical laboratory No. 9063
Plasma Renin, Renin measurement	Blood EDTA 	7 days		A UKAS accredited medical laboratory No. 9063
Prednisolone	Blood Gel-Separator 	7 days	Prednisolone should be detectable 1-8 hours post dose	A UKAS accredited medical laboratory No. 9063
Teicoplanin levels, Teicoplanin measurement	Blood Gel-Separator 	7 days		A UKAS accredited medical laboratory No. 9063
Tobramycin, Tobramycin measurement	Blood Gel-Separator 	4 hours	Antimicrobial interpretation should be directed to a consultant microbiologist	A UKAS accredited medical laboratory No. 9063
Citrate (Urine)	Urine (24hr ACID Collection) 	12 days		A UKAS accredited medical laboratory No. 9063
Voriconazole	Blood Plain 	4 days		A UKAS accredited medical laboratory No. 9063









Greater Manchester Immunology Service, Division of Laboratory Medicine, Clinical Sciences Centre, Manchester Royal Infirmary, Oxford Road, Manchester, M13 9WL.
Tel 0161 276 8766 Website [Immunology - Manchester University NHS Foundation Trust \(mft.nhs.uk\)](http://immunology-manchester.nhs.uk)











Acute Leukaemia panel - CD2, CD10, CD13, CD14, CD19, CD33, CD34, CD79a, CD117, TdT, MPO	Blood EDTA 			A UKAS accredited medical laboratory No. 8195
Allergen panel, screen	Blood Gel-Separator 	7 days	Over 100 specific allergens are routinely available. Any requests for allergens that are unusual should be discussed with a clinician.	A UKAS accredited medical laboratory No. 8195










Test (A-Z)	Preferred Specimen Container	Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Anti Neutrophil Cytoplasmic Antibody (ANCA)	Blood Gel-Separator 	7 days		A UKAS accredited medical laboratory No. 8195
Anti nuclear antibody (ANA)	Blood Gel-Separator 	7 days		A UKAS accredited medical laboratory No. 8195
AP100, CH100, CH50 - Functional Complement Studies	Blood Gel-Separator 	7 days		A UKAS accredited medical laboratory No. 8195
Avian precipitins	Blood Gel-Separator 	5 days		A UKAS accredited medical laboratory No. 8195
Beta-2-glycoprotein 1 (IgG and IgM)	Blood Gel-Separator 	5 days		A UKAS accredited medical laboratory No. 8195
Beta-2-microglobulin	Blood Gel-Separator 	14 days		A UKAS accredited medical laboratory No. 8195
C1 Esterase inhibitor and function test	Blood Gel-Separator 	17 days		A UKAS accredited medical laboratory No. 8195
Cardiolipin (IgG and IgM) antibodies	Blood Gel-Separator 	7 days		A UKAS accredited medical laboratory No. 8195
CD4 count (T cell count)	Blood EDTA 	7 days		A UKAS accredited medical laboratory No. 8195
Chronic Lymphocytic/Lymphoma panel including markers used: CD3, CD5, CD19, CD23, CD79b, Kappa chains, Lambda chains, FMC7, CD38	Blood EDTA, bone marrow or fluid 	7 days		A UKAS accredited medical laboratory No. 8195
Coronavirus Antibody, Anti-SARS-CoV-19 Antibody	Blood Gel-Separator 	48 hours		A UKAS accredited medical laboratory No. 8195






Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Crithidia Antibodies	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 8195
Double stranded DNA antibodies (IgG)	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 8195
EMA Binding Assay (HS Screen)	Blood EDTA		3 days		A UKAS accredited medical laboratory No. 8195
ENA antibodies includes: Ro (SS-A 52, SSA-60), La (SS-B), Sm, Sm/RNP, RNP (RNP A, RNP 68), Ribo P, Chromatin and Jo-1, and Scl-70	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 8195
Endomysial Antibody	Blood Gel-Separator		7 day		A UKAS accredited medical laboratory No. 8195
Farmers lung, Micropolysporia faeni precipitans	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 8195
Free Light Chains	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 8195
Glomerular basement membrane autoantibodies	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 8195
IgE (Total)	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 8195
Immunodeficiency screen (T&B Lymphocyte Subsets)	Blood EDTA		7 days		A UKAS accredited medical laboratory No. 8195

Test (A-Z)	Preferred Specimen Container	Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Immunoglobulin D IgD	Blood Gel-Separator	 16 days		A UKAS accredited medical laboratory No. 8195
Liver Kidney Microsomal Antibody, LKM Antibody	Blood Gel-Separator	 7 days		A UKAS accredited medical laboratory No. 8195
Mast Cell Tryptase	Blood Gel-Separator	 4 days		A UKAS accredited medical laboratory No. 8195
Myeloperoxidase antibody (MPOC)	Blood Gel-Separator	 7 days		A UKAS accredited medical laboratory No. 8195
Myositis antibodies	Blood Gel-Separator	 14 days		A UKAS accredited medical laboratory No. 8195
Nephritic factor	Blood Gel-Separator	 As required		A UKAS accredited medical laboratory No. 8195
Neuronal Antibodies, Paraneoplastic Antibody	Blood Gel-Separator	 7 days		A UKAS accredited medical laboratory No. 8195
Neutrophil DHR, Neutrophil Function	Blood Lithium-Heparin	 7 days		A UKAS accredited medical laboratory No. 8195
Paraneoplastic Antibodies (Hu, Yo, Ri)	Blood Gel-Separator	 7 days	Also known as Neuronal Antibodies	A UKAS accredited medical laboratory No. 8195
Parietal Cell Antibody	Blood Gel-Separator	 7 days		A UKAS accredited medical laboratory No. 8195





Test (A-Z)	Preferred Specimen Container	Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Pemphigoid Antibody, Skin antibody/antibody measurement	Blood Gel-Separator 	8 days		A UKAS accredited medical laboratory No. 8195
Platelet glycoprotein expressions	Blood Citrate 	5 days	The assay should be carried out on blood that is < 24 hours old. Samples can be stored at 4°C prior to analysis.	A UKAS accredited medical laboratory No. 8195
PR3 autoantibodies (cANCA)	Blood Gel-Separator 	21 days		A UKAS accredited medical laboratory No. 8195
Remsima / Infliximab (serum)	Blood Gel-Separator 	14 days		A UKAS accredited medical laboratory No. 8195
Smooth muscle mitochondrial antibodies including liver kidney microsomal (LKM), gastric parietal cell (GPC).	Blood Gel-Separator 	7 days		A UKAS accredited medical laboratory No. 8195
TB Gamma Interferon Release Assay (Quantiferon)	Blood – see specimen collection	3 days	Four special sample tubes are required for this test. Please contact the laboratory for instructions. Samples are not accepted at the weekend. Samples should reach the laboratory within four hours of being drawn – samples must be incubated, spun and supernatant referred.	A UKAS accredited medical laboratory No. 8195
IgA Anti-Tissue Transglutaminase	Blood Gel-Separator 	7 days		A UKAS accredited medical laboratory No. 8195
IgG Anti-Tissue Transglutaminase	Blood Gel-Separator 	7 days		A UKAS accredited medical laboratory No. 8195
Department of Clinical Biochemistry, Manchester University NHS Foundation Trust, Oxford Road, Manchester. M13 9WL.				
Tel 0161 276 8766 Website Biochemistry - Manchester University NHS Foundation Trust (mft.nhs.uk)				
17 alpha-OH Progesterone, 17-OH Progesterone	Blood Gel-Separator 	10 days		A UKAS accredited medical laboratory No. 9063











Test (A-Z)	Preferred Specimen Container	Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Alpha-1-acid Glycoprotein, Orosomucoid	Blood Gel-Separator 			A UKAS accredited medical laboratory No. 9063
Amikacin levels	Blood Gel-Separator 	1 day		A UKAS accredited medical laboratory No. 9063
Anti Mullerian Hormone	Blood Gel-Separator 	14 days	Freezing required if not sent to referral laboratory within 2 days of collection.	A UKAS accredited medical laboratory No. 9063
beta-hydroxybutyrate, b-hydroxybutyrate, Hydroxybutyrate,	Blood Lithium-Heparin 	28 days	Immediate transport to the laboratory required. To be spun and frozen prior to referral laboratory transport. Concurrent glucose measurement required.	A UKAS accredited medical laboratory No. 9063
Caeruloplasmin or Ceruloplasmin	Blood Gel-Separator 	14 days		A UKAS accredited medical laboratory No. 9063
Catecholamines (urine) PAEDIATRIC, Metanephrines (urine) PAEDIATRIC	Urine 	21 days	Immediate transport to the laboratory required. Immediate acidification to pH < 4 required.	A UKAS accredited medical laboratory No. 9063
Cholinesterase (phenotyping), Pseudocholinesterase	Blood Gel-Separator 	42 days	Sample must be taken 48 hours after apnoea.	A UKAS accredited medical laboratory No. 9063
Copper (urine)	Urine 24hr Plain Collection 	28 days	Timed 24 hour urine collection is required.	A UKAS accredited medical laboratory No. 9063
Copper, CU	Blood Gel-Separator 	14 days	Please contact the Biochemistry laboratory prior to taking sample. Copper increases during the acute phase response, and should not be measured in patients with acute infection/inflammation. Fasting samples preferred.	A UKAS accredited medical laboratory No. 9063
Cortisol (Paediatric)	Blood Gel-Separator 	7 days	Minimum vol. 200ul	A UKAS accredited medical laboratory No. 9063









Test (A-Z)	Preferred Specimen Container	Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Cystatin C	Blood Gel-Separator 	7 days		A UKAS accredited medical laboratory No. 9063
Cyclosporin	Blood EDTA 	10 days		A UKAS accredited medical laboratory No. 9063
Insulin and C-Peptide (adult patients >16 years of age, for investigation of hypoglycaemia)	Blood Lithium-Heparin 	14 days	Please contact the Biochemistry laboratory if a more rapid turnaround is required. Requires storage at -20°C. Must have fasting glucose analysed at same time. The insulin will be only analysed in the presence of hypoglycaemia (glucose: <2.5mmol/L)	A UKAS accredited medical laboratory No. 9063
Faecal reducing substances/faecal sugar chromatography	Faeces 	7 days	Sample must be received in lab within 2 hours of collection and frozen immediately.	NOT UKAS ACCREDITED TO ISO 15189:2012
Free Fatty Acids	Blood Lithium-Heparin 	21 days	Separate sample required. Take at time of hypoglycaemia. Must be received in the lab within 20 minutes of collection.	A UKAS accredited medical laboratory No. 9063
17- Hydroxyprogesterone	Blood Gel-Separator 	10 days	Part of female testosterone profile	A UKAS accredited medical laboratory No. 9063
PIIINP (Type III procollagen peptide)	Blood Gel-Separator 	10 days		A UKAS accredited medical laboratory No. 9063
Phenobarbital	Blood Gel-Separator 	3 days		A UKAS accredited medical laboratory No. 9063
Phosphate (urine)	Acid 24hr Urine 	3 days		A UKAS accredited medical laboratory No. 9063












Test (A-Z)	Preferred Specimen Container	Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Vitamin A (retinol) and E	Blood Gel-Separator 	28 days	Protect from natural light	A UKAS accredited medical laboratory No. 9063
Selenium	White Top/Plain Blood Collection Tube (7.5mL) 	5 working days	Selenium is decreased in the acute phase response, and should not be measured in patients with acute infection/inflammation. Results also affected by low albumin. Fasting samples preferred	A UKAS accredited medical laboratory No. 9063
Sirolimus	Blood EDTA 	10 days		A UKAS accredited medical laboratory No. 9063
TPMT (Thiopurine S-methyltransferase)	Blood EDTA 	14 days	Recent blood transfusions may mask a deficient TPMT result	A UKAS accredited medical laboratory No. 9063
Zinc , Zinc measurement	White Top/Plain Blood Collection Tube (7.5mL) 	7 days	Zinc is decreased in the acute phase response, and should not be measured in patients with acute infection/inflammation. Results also affected by low albumin. Fasting samples preferred.	A UKAS accredited medical laboratory No. 9063













Willink Unit, Genomic Diagnostics Laboratory (GDL), Manchester Centre for Genomic Medicine.
Tel 0161 701 2137/8 Website www.mangen.co.uk


15q11q13 microduplication, Prader-Willi Syndrome	5mL EDTA 	40 days	< 24hrs 16-25 °C	A UKAS accredited medical laboratory No. 9865
7-dehydrocholesterol	2 x 5mL EDTA 	26 days	< 24hrs 16-25 °C	A UKAS accredited medical laboratory No. 9865
A985G Mutation	5mL EDTA 	31 days	< 24hrs 16-25 °C	NOT UKAS ACCREDITED TO ISO 15189:2012
Acyl Carnitine, Carnitine,	5mL EDTA 	14 days	< 24hrs 16-25 °C	A UKAS accredited medical laboratory No. 9865







Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Alpha-Galactosidase, Galactosidase	5mL EDTA		21 days	< 24hrs 16-25 °C	A UKAS accredited medical laboratory No. 9865
Amino Acids (CSF)	CSF		21 days	< 24hrs 16-25 °C	A UKAS accredited medical laboratory No. 9865
Amino Acids (Plasma)	Blood Lithium Heparin		21 days	< 24hrs 16-25 °C	A UKAS accredited medical laboratory No. 9865
Amino Acids (Urine,)	10ml fresh urine		21 days	< 24hrs 16-25 °C	A UKAS accredited medical laboratory No. 9865
Aryl Sulphatase, Cholesterol Sulphatase, Steroid Sulphatase	Blood Gel-Separator		20 days	< 24hrs 16-25 °C	A UKAS accredited medical laboratory No. 9865
Battens Enzymes, (Neuronal Ceroid Lipofuscinoses (NCL))	5mL EDTA		7 days	Transport to laboratory asap.	A UKAS accredited medical laboratory No. 9865
Beutler Test, galactose-1-phosphate uridylyl transferase) Galactosaemia Screen,	Blood Lithium-Heparin		4 days	0.5mL minimum. Must reach laboratory within 24 hours of venepuncture	A UKAS accredited medical laboratory No. 9865
Biotinidase-T	Blood Lithium-Heparin		13 days	< 24hrs 16-25 °C	A UKAS accredited medical laboratory No. 9865
Cystic Fibrosis (CF) Mutation,	5mL EDTA		28 days	Request Form must be completed by the the requesting consultant. Form available www.mft.nhs.uk/nwglh/document/test-request-forms	A UKAS accredited medical laboratory No. 9865
G-1-PUT, Galactose-1-phosphate Galactosaemia monitoring	Blood Lithium-Heparin			5mL required. Must reach the referral laboratory within 24 hours of venepuncture	A UKAS accredited medical laboratory No. 9865

Test (A-Z)	Preferred Specimen Container	Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Homocysteine – total plasma concentration	Blood Lithium-Heparin 	28 days	Patient must attend the Department for this test. Patient preferably should be fasting Plasma must be sent frozen	A UKAS accredited medical laboratory No. 9865
Long Chain Fatty Acids, LCFA	5mL EDTA 		< 24hrs 16-25 °C . To reach the referral laboratory within 72 hours	A UKAS accredited medical laboratory No. 9865
Mucopolysaccharide Screen,MPS, Oligosaccharides	10mL Fresh urine 	3 working weeks	To reach the referral laboratory within 72 hours of sampling	A UKAS accredited medical laboratory No. 9865
Organic acid - urine	5mL Fresh Urine 	21 days	Full drug history required. < 24hrs 16-25 °C	A UKAS accredited medical laboratory No. 9865
Oxysterol (Plasma)	2ml EDTA 	4 working weeks	Plasma separated from whole blood on day sample taken, freeze and send to laboratory frozen	A UKAS accredited medical laboratory No. 9865
Phytanic/Pristinic acid	5mL EDTA 	4 working weeks	< 24hrs 16-25 °C	A UKAS accredited medical laboratory No. 9865
Sugar Chromatography - urine	5mL Fresh Urine 	21 days	< 24hrs 16-25 °C	A UKAS accredited medical laboratory No. 9865
Department of Immunology, Oxford University Hospital NHS Foundation Trust, Churchill Hospital, Headington, Oxford OX3 7LE				
Tel 01865 225 995 Website Diagnostic tests - Clinical Biochemistry (ouh.nhs.uk)				
Alpha-1-Antitrypsin Phenotype (AATP)	Blood Gel-Separator 	21 days		A UKAS accredited medical laboratory No. 8782

Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Acetylcholine Receptor Antibodies	Blood Gel-Separator		6 weeks		A UKAS accredited medical laboratory No. 8782
Adalimumab and Anti-Adalimumab level	Blood Gel-Separator		10 days		A UKAS accredited medical laboratory No. 8782
Neuromyelitis Optica (Anti Aquaporine-4) Antibodies	Blood Gel-Separator		14 Days		A UKAS accredited medical laboratory No. 8782
GAD Antibodies	Blood Gel-Separator		14 days		NOT UKAS ACCREDITED TO ISO 15189:2012
Myelin Associated Glycoprotein (MAG) autoantibodies	Blood Gel-Separator		21 days		A UKAS accredited medical laboratory No. 8782
DPPX antibodies	Blood Gel-Separator		14 days		A UKAS accredited medical laboratory No. 8782
GABA B and AMPA 1/2 Receptor Antibodies	Blood Gel-Separator		14 days		A UKAS accredited medical laboratory No. 8782
Ganglionic Acetylcholine Receptor Antibodies	Blood Gel-Separator		42 days		A UKAS accredited medical laboratory No. 8782
Ganglioside Antibodies	Blood Gel-Separator		30 days		A UKAS accredited medical laboratory No. 8782
Glycine Receptor Antibodies	Blood Gel-Separator		14 days		NOT UKAS ACCREDITED TO ISO 15189:2012
Haemophilus b Antibodies	Blood Gel-Separator		14 days		A UKAS accredited medical laboratory No. 8782

Test (A-Z)	Preferred Specimen Container	Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
HMGCR antibodies (3-hydroxy-3-methylglutaryl-CoA reductase)	Blood Gel-Separator 	10 days		A UKAS accredited medical laboratory No. 8782
Ig Subclass	Blood Gel-Separator 	7 days		A UKAS accredited medical laboratory No. 8782
LGI-1 and CASPR Antibodies	Blood Gel-Separator 	14 days		A UKAS accredited medical laboratory No. 8782
Myelin Oligodendrocytic Antibody	Blood Gel-Separator 	14 -21 days		A UKAS accredited medical laboratory No. 8782
N-methyl-D-aspartate (NMDA) receptor antibodies	Paired Blood Gel Separator and 0.5ml CSF sample 	14 days		A UKAS accredited medical laboratory No. 8782
Orexin Levels (Hypocretin)	CSF Plain Universal pot 	42 working days		A UKAS accredited medical laboratory No. 8782
Paraneoplastic Antibody	Blood Gel-Separator 	7 days		A UKAS accredited medical laboratory No. 8782
Pneumococcal Serotyping	Blood Gel-Separator 	28 days		A UKAS accredited medical laboratory No. 8782
Purkinje Antibody	Blood Gel-Separator 	14 days		NOT UKAS ACCREDITED TO ISO 15189:2012
Tetanus Antibodies	Blood Gel-Separator 	14 days		A UKAS accredited medical laboratory No. 8782
Voltage Gated Potassium Channel Antibodies (serum)	Blood Gel-Separator 	8 weeks		A UKAS accredited medical laboratory No. 8782
Voltage Gated Potassium Channel Antibodies (CSF)	CSF Plain Universal pot 	14 days		A UKAS accredited medical laboratory No. 8782







Test (A-Z)	Preferred Specimen Container	Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Department of Clinical Chemistry, Christie Hospital, Wilmslow Road, Manchester, M20 8LR				
Tel 0161 446 3298 Website Blood sciences (christie.nhs.uk)				
Arginine Stimulation Test CA153 CA199 GH, Growth Hormone, Acromegaly Test Glucagon Stimulation Test, Growth Hormone Exercise Test IGF-1, Insulin Growth Factor 1, Insulin-Like Growth Factor 1 Methotrexate Thyroglobulin	 Blood Gel-Separator	A UKAS accredited medical laboratory No. 8697		
Black Country Pathology Service, Clinical Biochemistry, City Hospital, Dudley Road, Birmingham, B18 7QH				
Tel 0121 507 5162				
6 MMPN, 6-Thioguanine Nucleotides Chromium Cobalt Ethylene Glycol Gilbert's Genotype Methanol Stone analysis	A separate 7.4mL Blood EDTA A separate 7.4mL Blood EDTA Blood EDTA Blood Fluoride Oxalate – Please contact Biochemistry at Bolton Blood EDTA Blood Gel-Separator Calculi / stone	A UKAS accredited medical laboratory No. 8407		
Clinical Biochemistry & Medical Oncology, Charing Cross, London, W6 8RF				
Tel 0203 313 5353 Website North West London Pathology Providing high quality NHS led pathology services to hospitals and GPs (nwlpathology.nhs.uk)				










Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Calcitonin (For medullary thyroid carcinoma investigations only)	Blood Gel-Separator		14 days	The user MUST notify the lab prior to sending sample (after discussion with Biochemist) & Sample must be transported to the laboratory immediately. To be spun, separated and frozen immediately.	A UKAS accredited medical laboratory No. 8673
Chromogranin A	Blood EDTA		4 weeks	Must the send on ICE. Please contact the Biochemistry laboratory. To be spun, separated and frozen immediately.	A UKAS accredited medical laboratory No. 8673
Chromogranin B.	Blood EDTA		4 weeks	Must the send on ICE. Please contact the Biochemistry laboratory. To be spun, separated and frozen immediately.	A UKAS accredited medical laboratory No. 8673
Gastrin	Blood EDTA		4 weeks	Must the send on ICE. Please contact the Biochemistry laboratory. To be spun, separated and frozen immediately.	A UKAS accredited medical laboratory No. 8673
Glucagon	Blood EDTA		4 weeks	Must the send on ICE. Please contact the Biochemistry laboratory. To be spun, separated and frozen immediately.	A UKAS accredited medical laboratory No. 8673
Gut Hormone Profile (includes Gastrin, VIP, Glucagon, Neurotensin, CGA, Somatostatin & CGB)	Blood EDTA		4 weeks	Must the send on ICE. Please contact the Biochemistry laboratory. To be spun, separated and frozen immediately. Fasting samples (6-8hours)	A UKAS accredited medical laboratory No. 8673



Clinical Biochemistry & Immunology, Birmingham Hartlands & Solihull NHS Trust, Bordesley Green East, Birmingham, B9 5SS
Tel: 0121 424 1185 Website [Home Page \(heftpathology.com\)](http://heftpathology.com)

Lipoprotein(a)	Blood Gel-Separator		14 days		A UKAS accredited medical laboratory No. 8217
Striated Muscle Antibody	Blood Gel-Separator		14 days		A UKAS accredited medical laboratory No. 8217

Department of Biochemistry, Huddersfield Royal Infirmary, Acre Street, Lindley, Huddersfield HD3 3EA
Tel 01484 355766 Website [Pathology - CHFT \(cht.nhs.uk\)](http://Pathology - CHFT (cht.nhs.uk))

Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Lipase	Blood Gel-Separator		5 days		A UKAS accredited medical laboratory No. 8992
Department of Clinical Biochemistry, 4th Floor, Duncan Building, Royal Liverpool University Hospital, Liverpool, L7 8XP Tel 0151 706 4235 Website Clinical Biochemistry Services & Departmental Information (rlbuht.nhs.uk)					
Thiamine (Vitamin B1)	Blood EDTA		28 days		A UKAS accredited medical laboratory No. 9785
Department of Clinical Biochemistry, Kings College Hospital, Denmark Hill, London, SE5 9RS Tel 020 4513 7300					
Amylase Isoenzymes	Blood Gel-Separator		21 days		A UKAS accredited medical laboratory No. 9067
Clinical Immunology & Allergy, Kings College Hospital, Bessemer Wing, 1st Floor, Denmark Hill, London, SE5 9RS Tel 02032 998 752					
Diabetes Autoantibodies, IA2	Blood Gel-Separator		5 weeks		A UKAS accredited medical laboratory No.8641
Specialist Laboratory Medicine, Block 46, St James University Hospital, Beckett Street, Leeds, LS9 7TF Tel 0113 2064717					
Haptoglobin	Blood Gel-Separator		14 days		A UKAS accredited medical laboratory No. 8492
Serotonin	Blood EDTA		21 days	Samples must be received in the Lab IMMEDIATELY after collection. Do Not Spin. Without delay FREEZE one sample for serotonin, it must not be allowed to thaw out. Send on dry ice.	A UKAS accredited medical laboratory No. 8492
Neurobiochemistry and Neuroimmunology, The Walton Centre for Neurology and Neurosurgery NHS Trust, Lower Lane, Fazakerley, Liverpool. L9 7LJ Tel 0151 566 3262 Website Neuroimmunology Diagnostic tests (thewaltoncentre.nhs.uk)					

Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Anti-Glycolipid Antibody	Blood Gel-Separator		10 days		A UKAS accredited medical laboratory No. 8642
CSF Beta 2 Transferrin (TAU Protein)	CSF		21 days		A UKAS accredited medical laboratory No. 8642
Levetiracetam – Kappra	Blood Gel-Separator				A UKAS accredited medical laboratory No. 8642
Lamotrigine, Lamictal	Blood Gel-Separator		8 days	Sample should be taken before the next dose. Please contact the Biochemistry Laboratory.	A UKAS accredited medical laboratory No. 8642
Topiramate	Blood Gel-Separator		7 days	Please send to the laboratory as soon as possible after collection. pH must not be below 2.0 Ideally pH of 3-5.0.	A UKAS accredited medical laboratory No. 8642
Purine Research Laboratory, 4th Floor, North Wing, St Thomas' Hospital, Lambeth, London. SE1 7EH Tel 020 7188 1266 Website Purine Research Laboratory at St Thomas' Synnovis					
Purines - Urine	Urine		21 days		A UKAS accredited medical laboratory No. 9093
SAS Service for Peptide Hormone (PH), The Royal Surrey County Hospital NHS Trust. Egerton Road, Guildford, GU2 7XX Tel 01483 406 715 Website Guildford RSCH Peptide Hormone Laboratory – Supra-Regional Assay Service (sas-centre.org)					
Insulin IgG Antibodies	Blood Gel-Separator		14 days	Requires freezing over weekend	A UKAS accredited medical laboratory No. 9732
Insulin Growth Factor ratio	Blood Gel-Separator		14 days		NOT UKAS ACCREDITED TO ISO 15189:2012
Sulphonylureas	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 9732

Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Insulin Growth Factor 2	Blood Gel-Separator		14 days		NOT UKAS ACCREDITED TO ISO 15189:2012
Insulin-Like Growth Factor 2	Blood Gel-Separator		14 days		A UKAS accredited medical laboratory No. 9732









Department of Immunology, Laboratory Medicine Centre, Northern General Hospital, Herries Road, Sheffield, S5 7AU











Tel 0114 271 5552 Website [Sheffield Laboratory Medicine](#)











Inhibin A (tumour marker)	Blood Gel-Separator		21 days		A UKAS accredited medical laboratory No. 8494
Inhibin B	Blood Gel-Separator		21 days		A UKAS accredited medical laboratory No. 8494
Mannose Binding Lectin	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 8494
Neurone Specific Enolase	Blood Gel-Separator		14 days		A UKAS accredited medical laboratory No. 8494
Phospholipase 2 Receptor Antibodies	Blood Gel-Separator		14 days		A UKAS accredited medical laboratory No. 8494
Ovarian antibodies	Blood Gel-Separator		9 days		A UKAS accredited medical laboratory No. 8494
Testicular Antibodies	Blood Gel-Separator		9 days		A UKAS accredited medical laboratory No. 8494












Department of Haematology, Wythenshawe Hospital, Southmoor Road, Manchester, M23 9LT













Tel 0161 291 2141 Website [Haematology - Manchester University NHS Foundation Trust \(mft.nhs.uk\)](#)










Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Plasma Viscosity	Blood EDTA		14 days		A UKAS accredited medical laboratory No. 8650
Haematology & Coagulation Department, Clinical Sciences Building, Manchester University NHS Foundation Trust, Oxford Road, Manchester, M13 9WL Tel 0161 701 2123 Website Haematology - Manchester University NHS Foundation Trust (mft.nhs.uk)					
Erythropoietin assay	Blood Gel-Separator		14 days		A UKAS accredited medical laboratory No. 8650
Factor VIII Inhibitor	Blood Citrate		30 days		A UKAS accredited medical laboratory No. 8650
Factor VIIC	Blood Citrate		30 days		A UKAS accredited medical laboratory No. 8650
Intrinsic Factor Antibody	Blood Gel-Separator		14 days		A UKAS accredited medical laboratory No. 8650
Plasma vWF Multimer Analysis	Blood Citrate		30 days		A UKAS accredited medical laboratory No. 8650
Von Willebrand Assay	Blood Citrate		30 days		A UKAS accredited medical laboratory No. 8650
North West Genomic Laboratory Hub (Manchester) Manchester Centre for Genomic Medicine St Mary's Hospital Oxford Road Manchester M13 9WL Tel 0161 276 6123 / 0161 701 4895 Website North West Genomic Laboratory Hub - Manchester University NHS Foundation Trust (mft.nhs.uk)					
BCR-ABL AKD Mutation	Blood EDTA		30 days		A UKAS accredited medical laboratory No. 9865











Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
BCR-ABL MRD (for diagnosis)	Blood EDTA		14 days		A UKAS accredited medical laboratory No. 9865
Familial Hypercholesterolaemia, FH, FH Genetic Study, LDL receptor. LDL receptor Antibodies	Blood EDTA		42 days		NOT UKAS ACCREDITED TO ISO 15189:2012
Haemochromatosis (HFE) genotyping	Blood EDTA		<4 weeks		A UKAS accredited medical laboratory No. 9865
JAK-2 Mutation	Blood EDTA		30 days		A UKAS accredited medical laboratory No. 9865
NPM1 Mutations	Blood EDTA		14 days		A UKAS accredited medical laboratory No. 9865
TCR gene arrangement	Blood EDTA		10 days		NOT UKAS ACCREDITED TO ISO 15189:2012
Regional Antibiotic Reference Laboratory, Dept of Microbiology, Southmead Hospital, Westbury-on-Trym, Bristol, BS10 5NB					
Tel 0117 9595653 Website <u>Antimicrobial Reference Laboratory North Bristol NHS Trust (nbt.nhs.uk)</u>					
Chloramphenicol Assay	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 8099
Chloramphenicol Assay	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 8099
Colistin Sulphate	Blood Gel-Separator		2-3 days	Pre-dose only	A UKAS accredited medical laboratory No. 8099
Cycloserine Assay	Blood Gel-Separator		5 days		A UKAS accredited medical laboratory No. 8099







Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Cycloserine Assay	Blood Gel-Separator		5 days		A UKAS accredited medical laboratory No. 8099
Daptomycin	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 8099
Daptomycin	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 8099
Rifampicin	Blood Gel-Separator		21 days	Pre-dose and Post doses should be taken 1 hr apart. Please contact the Biochemistry Laboratory prior to sending.	A UKAS accredited medical laboratory No. 8099
Rifampicin	Blood Gel-Separator		21 days	Pre-dose and Post doses should be taken 1 hr apart. Please contact the Biochemistry Laboratory prior to sending.	A UKAS accredited medical laboratory No. 8099
Valganciclovir	Blood Gel-Separator		7 days	Pre, Post or Random. Please contact the Biochemistry Laboratory prior to sending.	NOT UKAS ACCREDITED TO ISO 15189:2012
Department of Virology, Manchester University NHS Foundation Trust, Oxford Road, Manchester. M13 9WL					
Tel 0161 276 8788 / 8854 Website Virology - Manchester University NHS Foundation Trust (mft.nhs.uk)					
Adenovirus PCR	Blood EDTA		7 days		A UKAS accredited medical laboratory No. 10175
BK Virus	Blood EDTA		4 days		A UKAS accredited medical laboratory No. 10175
CMV IgG Antibody	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 10175
CMV viral load	Blood EDTA		14 days		A UKAS accredited medical laboratory No. 10175








Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
EBV (Epstein-Barr Virus) IgM/IgG	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 10175
EBV Viral Load	Blood EDTA		7 days		A UKAS accredited medical laboratory No. 10175
Enterovirus PCR	Blood EDTA		21 days		A UKAS accredited medical laboratory No. 10175
Haemophilus influenzae Type B antibody	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 10175
Hepatitis B Viral load, genotyping and resistance	Blood EDTA		3 days	Specimens require centrifugation within 4 hours of collection. Samples should be sent as soon as possible, or frozen at minus 20°C or lower.	A UKAS accredited medical laboratory No. 10175
Hepatitis C RNA Viral load, genotyping and resistance	Blood EDTA		3 days	Specimens require centrifugation within 4 hours of collection. Samples should be sent as soon as possible, or frozen at minus 20°C or lower.	A UKAS accredited medical laboratory No. 10175
Hepatitis E IgM	Blood Gel-Separator		20 days		A UKAS accredited medical laboratory No. 10175
Herpes Simplex Virus (HSV) Antibodies	Blood Gel-Separator		3 days		A UKAS accredited medical laboratory No. 10175
Herpes Simplex Virus PCR (HSV 1&2)	Blood EDTA		3 days		A UKAS accredited medical laboratory No. 10175
HIV Viral load, genotyping and resistance	Blood EDTA		3 days	Specimens require centrifugation within 4 hours of collection. Samples should be sent as soon as possible, or frozen at minus 20°C or lower.	A UKAS accredited medical laboratory No. 10175
Human Parvovirus B19 IgG/IgM - Slapped cheek	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 10175

Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Human T Lymphotropic virus (HTLV) 1&2 Antibodies	Blood Gel-Separator		3 days		A UKAS accredited medical laboratory No. 10175
JC Virus PCR	Blood EDTA		4 days		A UKAS accredited medical laboratory No. 10175
Measles IgM y	Blood Gel-Separator		10 days		A UKAS accredited medical laboratory No. 10175
Measles virus PCR	Blood EDTA		10 days		A UKAS accredited medical laboratory No. 10175
Meningococcal Antibody	Blood Gel-Separator		10 days		A UKAS accredited medical laboratory No. 10175
Meningococcal PCR	Blood EDTA		10 days		A UKAS accredited medical laboratory No. 10175
Mumps IgM/IgG	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 10175
<i>Pneumocystis jiroveci</i> PCR	Blood EDTA		7 days		A UKAS accredited medical laboratory No. 10175
Streptococcal serology (anti-streptodornase B)	Blood Gel-Separator		7 days		NOT UKAS ACCREDITED TO ISO 15189:2012
Streptococcus pneumoniae Serology	Blood Gel-Separator		3 days		A UKAS accredited medical laboratory No. 10175
Syphilis IgM (<i>Treponema pallidum</i>)	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 10175
Varicella Zoster Virus (VZV) IgM	Blood Gel-Separator		7 days		A UKAS accredited medical laboratory No. 10175

Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Varicella Zoster Virus (VZV) PCR	Blood EDTA		21 days		A UKAS accredited medical laboratory No. 10175
Mycology Reference Centre Manchester, Education and Research Centre, Wythenshawe Hospital Manchester M23 9LT Tel 0161 291 2124 Website Mycology Reference Centre Manchester – An NHS mycology reference laboratory located within Wythenshawe Hospital (Manchester, UK). (mrcm.org.uk)					
Aspergillus fumigatus specific IgE	Blood Gel-Separator		7 days	Please take a separate sample	A UKAS accredited medical laboratory No. 10196
Aspergillus fumigatus specific IgG	Blood Gel-Separator		5 days		A UKAS accredited medical laboratory No. 10196
Beta-D-Glucan	Blood Gel-Separator		3 days		A UKAS accredited medical laboratory No. 10196
Cryptococcal Antigen	Blood Gel-Separator		3 days		A UKAS accredited medical laboratory No. 10196
Flucytosine levels	Blood Gel-Separator		1 day		A UKAS accredited medical laboratory No. 10196
Galactomanan antigen	Blood Gel-Separator		10 days		A UKAS accredited medical laboratory No. 10196
Virus Reference Department (VRD), UK Health Security Agency, 61 Colindale Avenue, London, NW9 5HT. Tel 020 8327 6017 Website Virus reference department (VRD) - GOV.UK (www.gov.uk)					
Hepatitis D qPCR	Blood EDTA		20 days	Specimens require centrifugation within 4 hours of collection. Samples should be sent as soon as possible, or frozen at minus 20°C or lower.	A UKAS accredited medical laboratory No. 8825
Hepatitis D IgG/IgM	Blood Gel-Separator		20 days	Hepatitis D serology should only be sent if the patient known Hepatitis B positive	A UKAS accredited medical laboratory No. 8825

Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
Hepatitis E PCR	Blood EDTA		20 days	To be sent at the request of a Consultant Microbiologist only. Special form is required.	A UKAS accredited medical laboratory No. 8825
HIV Pro-Viral DNA	Blood EDTA		5 days	Specimens require centrifugation within 4 hours of collection. Samples should be sent as soon as possible, or frozen at minus 20°C or lower	A UKAS accredited medical laboratory No. 8825
Rabies serology	Blood Gel-Separator		14 days	Please discuss with Consultant Microbiologist prior to sample collection.	NOT UKAS ACCREDITED TO ISO 15189:2012
Toxoplasma Reference Unit, Public Health Wales Microbiology, Singleton Hospital, Swansea SA2 8QA					
Tel 01792 285058 Website Toxoplasma Reference Unit - Public Health Wales (nhs.wales)					
Toxoplasma IgM confirmation	Blood Gel-Separator		10 days		A UKAS accredited medical laboratory No. 9510
Diagnostic Parasitology Laboratory ; LSTM – Pembroke Place, Liverpool, L3 5QA					
Tel 0151 705 3220 Website Clinical Diagnostic Parasitology Laboratory LSTM (lstm.ac.uk)					
Amoeba IgG	Blood Gel-Separator		21 days		A UKAS accredited medical Laboratory No. 9362
Filariasis	Blood Gel-Separator		14 days		A UKAS accredited medical Laboratory No. 9362
Helminths - flukes (trematodes), tapeworms (cestodes), and roundworms (nematodes)	Blood Gel-Separator		14 days		A UKAS accredited medical Laboratory No. 9362
Hydatid (Echinococcus granulosus) IgG	Blood Gel-Separator		14 days	Sensitivity depends on cyst site	A UKAS accredited medical Laboratory No. 9362
Malarial IgG	Blood Gel-Separator		14 days	Antibodies are detected about 7 to 15 days from initial infection.	A UKAS accredited medical Laboratory No. 9362
Malarial Parasite Confirmation	Blood EDTA		14 days		A UKAS accredited medical Laboratory No. 9362

Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
<i>Schistosoma</i> IgG	Blood Gel-Separator		1 month	Antibody levels may not be detected until 3 months' post exposure. I	A UKAS accredited medical Laboratory No. 9362
<i>Strongyloides</i> IgG and IgM	Blood Gel-Separator		14 days	Cross-reactions are known to occur with patients with filarial infections and with heavy Hookworm infections. Antibody levels normally detected 2 to 3 months post exposure.	A UKAS accredited medical Laboratory No. 9362
Department of Clinical Parasitology, Hospital of Tropical Medicine, Mortimer Market, Capper Street, London, WC1E 4JB Tel 0207 307 9400 Website HSL Parasitology Health Services Laboratories (hslpathology.com)					
Toxocara Serology	Blood Gel-Separator		14 days		NOT UKAS ACCREDITED TO ISO 15189:2012
Brucella Reference Unit Clinical Sciences Support Building Liverpool University Hospital NHS Foundation Trust Mount Vernon Street, Liverpool, L7 8YE Tel 0151 7064410 Website Brucella: laboratory and clinical services - GOV.UK (www.gov.uk)					
Brucella Serology	Blood Gel-Separator		14 days		A UKAS accredited medical laboratory No. 8697
Public Health England, Bristol Public Health Laboratory, Myrtle Road, Kingsdown, Bristol, BS2 8EL Tel 0117 342 5551 Website Mycology reference laboratory: service user handbook - GOV.UK (www.gov.uk)					
Blastomyces Dermatidis	Blood Gel-Separator		<28 days		A UKAS accredited medical Laboratory No. 8043
Histoplasma Antibody screen	Blood Gel-Separator		14 days		A UKAS accredited medical Laboratory No. 8043
Rare and Imported Pathogens Laboratory (RIPL) UK Health Security Agency Porton Down Salisbury Wiltshire SP4 0JG Tel 01980 612348 Website Rare and Imported Pathogens Laboratory (RIPL): user manual - GOV.UK (www.gov.uk)					

Test (A-Z)	Preferred Specimen Container		Median Turnround (M-F)	Specimen Collection and Transport Requirements (Limits)	Accreditation
<i>Borrelia burgdoferi</i> IgG/IgM - Lyme Disease	Blood Gel-Separator	7 days			A UKAS accredited medical laboratory No. 9304
Chikungunya IgG/IgM	Blood Gel-Separator	14 days			A UKAS accredited medical laboratory No. 9304
Dengue IgG/IgM	Blood Gel-Separator	14 days			A UKAS accredited medical laboratory No. 9304
Haemorrhagic Fever Viruses – High Consequence Infectious Diseases	Blood Gel-Separator	14 days		Consultant Microbiologist MUST be contacted	A UKAS accredited medical laboratory No. 9304
<i>Leptospira</i> spp. IgM	Blood Gel-Separator	10 days			A UKAS accredited medical laboratory No. 9304
<i>Leptospira</i> spp. RT-PCR	Urine CSF	10 days			A UKAS accredited medical laboratory No. 9304
Zika Virus IgG/IgM	Blood Gel-Separator	5-7 days			A UKAS accredited medical laboratory No. 9304

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