Calderdale and Huddersfield NHS
NHS Foundation Trust

PATHOLOGY USER HANDBOOK

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

GENERAL INFORMATION

See Pathology - CHFT Intranet (cht.nhs.uk) for all general information, including:-

- Current non-accredited tests for each laboratory
- Emergency Request Forms
- User Surveys and Feedback
- Common Enquiries
- Pathology Quality Policy

The Department is in compliance with ISO 15189, Blood Safety and Quality Regulations/ GMP, Human Tissue Act and all other relevant national and international standards.

UKAS -Schedule of Accreditation

CLINICAL BIOCHEMISTRY INTRANET UKAS STATEMENT

Clinical Biochemistry is a clinically lead service and is accredited to ISO 15189:2012 by the United Kingdom Accreditation Service (UKAS) at Calderdale Royal Hospital. Tests at Huddersfield Royal Infirmary are not currently accredited under UKAS due to new equipment going live August 2024 and awaiting UKAS inspection.

The laboratories are open 24 hours a day, 365 days a year. Routine operating hours are 08:00 - 20:00. The laboratory is staffed by a shift system between 20:00 - 08:00 with a Qualified Biomedical Scientist (HRI) and an Assistant Practitioner (CRH) to process critical work and answer any queries. We offer a large repertoire of tests, as well as an extended repertoire using UKAS accredited referral laboratories where possible.

CHFT Complaints / PALS

DEPARTMENTS (LABORATORY AREAS)

- Blood Sciences, including Biochemistry, Haematology, Immunology/Posting – see index below
- Cellular Pathology and Mortuary
- Microbiology – see index below
- Blood Transfusion
- Phlebotomy

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

INDEX AND CLINICAL INFORMATION BY TEST

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

WHO'S WHO IN PATHOLOGY

Director of Pathology: Dr Anu Rajgopal – anu.rajgopal@cht.nhs.uk
Deputy Director of Operations, Pathology: Jane Mackenzie 07500 071485 / 01484 355058 (PA))
Pathology Quality Manager: Ms Alison Milner – contact via Microsoft Teams or email alison.milner@cht.nhs.uk
Pathology IT Manager: Mr Jonathan Bray – jonathan.bray@cht.nhs.uk

BLOOD SCIENCES DEPARTMENT
Service Manager: Mrs Hayley Baker – 01484 355417
Results Contact Tel – 01484 355756

Clinical Biochemistry Clinical Lead: Dr Daniel Herrera
Consultant Clinical Scientists: Dr Chris Cockcroft, Dr Daniel Herrera – 01484 356988
Laboratory Contact Tel – 01484 355885 / 01422 224465

Haematology/Immunology Clinical Lead: Dr Wunna Swe
Consultants: Dr Atta Gill, Dr Kate Rothwell, Dr Sven Sommerfeld, Dr Sylvia Feyler, Dr Wunna Swe
Laboratory Contact Tel – 01484 342506 / 01422 224456

Blood Transfusion Clinical Lead: Dr Kate Rothwell
Transfusion Practitioners: Mrs Michelle Lake, Mrs Lisa McCallion – 01484 342754
Laboratory Contact Tel – 01484 342553 / 01422 224319
For Blood Track enquiries – bloodtrack@cht.nhs.uk
For Transfusion enquiries – transfusionlab@cht.nhs.uk

MICROBIOLOGY DEPARTMENT Clinical Lead: Dr Anu Rajgopal
Consultants: Dr Anu Rajgopal, Dr Gavin Boyd, Dr Nicola Hardman, Dr Vivek Nayak
Service Manager: Mrs Swapna Jose – 01422 222762
Results Contact Tel – 01422 224457

CELLULAR PATHOLOGY DEPARTMENT Clinical Lead: Dr Mia Wolozinsky
Consultants: Dr Ghazi Zafar, Dr Jalaja George, Dr Mia Wolozinsky, Dr Minu Syamala, Dr Richard Knights, Dr Sally Osborn, Dr Sarah Knight, Dr Vidya Kumaraswamy
HTA DI: Dr Gavin Boyd – gavin.boyd@cht.nhs.uk
Service Manager: Mrs Michelle McNamara – 01422 224389
Laboratory Contact Tel – 01422 224399

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

MORTUARY
Mortuary Supervisor: Ms Fran Allen – 01484 3422430 (HRI) / 01422 222289 (CRH)

PHLEBOTOMY DEPARTMENT Service Manager: Mrs Elaine Reeves – 01484 355763 (HRI) / 01422 222050 (CRH)

POINT OF CARE TESTING Clinical Lead: Dr Chris Cockroft – 01484 356988
Service Manager: Mrs Becki Burn – becki.burn@cht.nhs.uk
Point of Care Team: 01484 355762 / POC@cht.nhs.uk

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

QUICK GUIDE – FREQUENT TELEPHONE NUMBERS FOR PATHOLOGY

CONTACT NUMBERS		
	HRI (01484)	**CRH (01422)**
Transfusion Laboratory	342553	224319
Biochemistry Laboratory	355884/355885	224465
Haematology Laboratory	342506	224456
Cellular Pathology Laboratory		224399
Andrology Laboratory		222053
Microbiology Laboratory		224457 / 224194
Microbiology Consultant On-Call	Via Switchboard	
POCT	355762	222099

TEST/QUERY	LABORATORY DEPARTMENT	WHEN TO CALL	OTHER SOURCES OF INFORMATION
POCT –POINT OF CARE TESTING	POCT		We are directing everyone initially to poc@cht.nhs.uk email for all enquiries. However, due to only 2 staff covering both sites, we only offer a Monday to Friday 0900 to 1700 service.
MAJOR HAEMORRHAGE	TRANSFUSION LABORATORY	When there is a need to take the emergency group blood and result queries if these are	

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

		not available on ICE or if there is a specific question that needs clarifying.	
MICROBIOLOGY RESULTS OUT OF CORE HOURS (20:00 TO 08:30)	MICROBIOLOGY CONSULTANT ON-CALL	Urgent requests only	EPR
MICROBIOLOGY RESULTS CORE HOURS (08:30 TO 20:00)	MICROBIOLOGY LAB	Urgent requests – when results not available on ice	EPR
PODS for air tube HRI	Estates HRI	Problems with system	Individual departments are able to request the purchase of extra PODS for their department via Estates
PODS for air tube CRH	EQUANS (Engie) CRH	Problems with system	Individual departments are able to request the purchase of extra PODS for their department via EQUANS
BIOCHEMISTRY RESULTS	BIOCHEMISTRY	A&E results not available on EPR & bloods in lab >1 hr	EPR

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

BIOCHEMISTRY ADD-ON TESTS	BIOCHEMISTRY	When results are not available on EPR after >1 hour A&E, >2 hours other areas	Please request add on via EPR and send request physically to the laboratory- state on EPR label/requisition form which sample the tests are to be added to.
HAEMATOLOGY LAB TEST RESULTS	HAEMATOLOGY LABORATORY	A&E results not available on EPR and bloods in lab >1 hour	
HAEMATOLOGY ADD-ON TESTS	HAEMATOLOGY LABORATORY	A&E add-on results not available on EPR >1 hour since add-on sent to lab.	

PATIENT ENQUIRIES	
ENQUIRY TYPE	REFER CALLS TO:
Patients calling for Haematology results	Please refer all call to Haematology Clinic and not the laboratory
Patients calling for details of their transfusions	Please refer calls to relevant clinical department (usually Macmillan unit at CRH or Medical Day Case HRI)
Patients calling for Andrology laboratory	Patient appointments / queries - refer call to Andrology laboratory.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ADD-ON TEST GUIDE

COMMON ADD-ON REQUESTS (BLOOD SCIENCES)

Test Name	Sample Requirement	Add-on YES/NO	Time Limits	Special Notes	Minimum Retesting Intervals
Bone Profile (ALB, Ca, Mg, Phos)		YES	3 Days		2 Days
C Reactive Protein (CRP)		YES	3 Days		1 Day
Liver Function Test (LFT)		YES	3 Days		
Magnesium / mg2+		YES	3 Days		

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Thyroid Stimulating Hormone (TSH)		YES	2 Days		4 Weeks
Troponin I (TNI)		YES	8 Hours		
B12/Folate (BF)		YES	2 Days		56 Days
Vitamin D		YES	3 Days		1 Year
Urea		YES	3 Days		
Creatine Kinase (CK)		YES	3 Days		

Amylase (AMY)		YES	3 Days		
Electrolytes (Serum) Chloride, Potassium, Sodium		YES	3 Days		
Iron / Iron Profile		YES	3 Days		
Ferritin (FER)		YES	3 Days		3 Months
D-Dimer		YES – if a Coagulation tube was collected at venepuncture	12 Hours		

Calderdale and Huddersfield NHS
NHS Foundation Trust

OTHER ADD-ON TESTS (BLOOD SCIENCES)

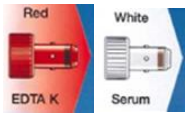
Test Name	Sample Requirement	Add-on YES/NO	Time Limits	Special Notes	Minimum Retesting Intervals
Albumin (ALB)		YES	3 Days		
Alpha 1 Antitrypsin (A1A)		YES	3 Days		
Alanine Transaminase (ALT)		YES	3 Days		
Alcohol/Ethanol (ETOH)		YES- Must have collected a Fluoride sample during initial venepuncture	3 Days		
Alkaline Phosphatase (ALP/ALK)		YES	3 Days		2 Days

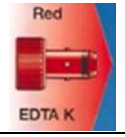
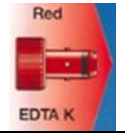
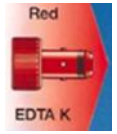
Alkaline Phosphatase Isoenzyme (ALK/ISO)		YES	7 Days		3 Months
Alphafetoprotein (AFP)		YES	2 Days		
Aminophylline/Theophylline		YES	3 Days		
Ammonia (AMM)		**NO**	Unable to Add-on	Laboratory must be contacted prior to collection. Sample must be sent on ICE and reach the laboratory within 30 minutes of collection	
Angiotensin Converting Enzyme (ACE)		YES	3 Days		

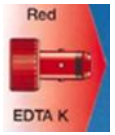
Anti-Cardiolipin Antibodies		YES	3 Days	Referral Test	
Anti-Cyclic Citrullinated Peptide Antibodies (ACCP)		YES	3 Days	Referral Test	
Anti-neutrophil Cytoplasmic Antibodies (ANCA)		YES	3 Days	Referral Test	
Anti-Nuclear Antibody Screen (Includes anti-dna, Ro (60 and 52kDA), la, sm, sm/rnp, rnp (68kda), scl-70, jo-1, cenp-b, chromatin and ribosomal P)		YES	3 Days	Referral Test	
APTT		YES – if a Coagulation tube was collected at venepuncture	4 Hours		7 Days
Aspartate transaminase (AST)		YES	3 Days		3 Days

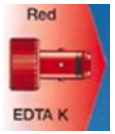
Autoantibody Liver Screen (ALS) which includes mitochondrial antibodies, liver kidney microsomal antibodies (LKM) and smooth muscle antibodies)		YES	3 Days		
Beta Human Chorionic Gonadotrophin (BHCG)		YES	2 Days		
Bicarbonate (C02)		**NO**	N/A Unable to add-on		
Bile Acids		YES	3 Days		1 Week
CA 153		YES	24 Hours		4 Weeks

CA 199		YES	2 Days		4 Weeks
CA125		YES	24 Hours		4 Weeks
Carbamazepine / Tegretol		YES – if a plain clotted sample was collected during initial venepuncture	3 Days		
Carboxyhaemoglobin / carbon monoxide		**NO**	N/A		
Carcino Embryonic antigen (CEA)		YES	2 Days		4 Weeks
Coagulation Screen		YES – if a Coagulation tube was collected at venepuncture	4 Hours		7 Days

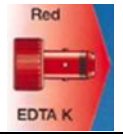
Coeliac Screen		YES	3 Days		
Complement C3/C4		YES	3 Days		
Conjugated Bilirubin / Direct Bilirubin		YES	24 Hours		
Copper		YES	3 Days	Referral Test	14 Days
Cortisol (COR)		YES	2 Days	Cortisol should be collected at 9am.	
Cryoglobulins (CRYO)		**NO**	N/A	Pre-warmed and temperature controlled Plain tube containing 5ml blood and EDTA tube	

				containing 3Ml blood	
Digoxin (DIG)		YES	2 Days	Sample should be collected 6 hours post dose.	
ESR		YES - Has to be a full original sample tube	24 Hours		
FBC		YES	24 Hours		3 Days
Film (Blood Film)		YES – If a FBC was performed on the original samples	24 Hours		Repeat on Request
Free Light Chains (Serum)		YES	3 Days	Referral Test	3 Weeks
Gamma Glutamyl Transferase/ GGT		YES	3 Days		7 Days

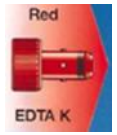
Gentamicin		YES	2 Days	Pre/Post/Unknown Dose must be specified; samples should not be taken from the site of the venous catheter where the gentamicin has been administered.	
Glucose (G)		YES - Must have collected a Fluoride sample during initial venepuncture	3 Days (on Fluoride tube)		
Glycated Haemoglobin / GHB/ HBA1c		YES- If an EDTA sample was collected originally e.g. a FBC, BNP; PTH was collected during original venepuncture.	3 Days		60 Days

Haemoglobinopathy Screen		YES – If an FBC was performed on the original samples	3 Days		Once only
Haptoglobin		YES	3 Days		
Immunoglobulins (IGS) (Includes IGA, IGM, IGG)		YES	3 Days		
INR		YES – if a Coagulation tube was collected at venepuncture	24 Hours		
Intrinsic Factor Antibodies		YES	3 Days		
Lactate		**NO**	N/A Unable to Add-on		

Lactate Dehydrogenase (LDH)		YES	3 Days		
Lipase (LIPA)		YES	3 Days		
Lithium		YES	3 Days	Blood should be collected 12 hours post dose.	
Luteinising Hormone /Follicle Stimulating Hormone (LH/FSH)		YES	2 Days		
Oestradiol / E2		YES	2 Days		
Paracetamol		YES	3 Days		

Parathyroid hormone (PTH)		YES	1 Day		3 Months
Phenytoin		Yes – If a Plain Clotted tube was taken at initial venepucture.	3 Days	Collect trough sample, immediately before the next dose.	
Phosphate		YES	3 Days		
Progesterone		YES	2 Days		
Prolactin		YES	2 Days		
Prostate Specific Antigen (PSA)		YES	2 Days		

Protein Electrophoresis (SEP)		YES	7 Days		3 Weeks
Rheumatoid Factor (RF)		YES	3 Days		
Salicylate / Aspirin		YES	3 Days		
Selenium		YES	3 Days	Referral Test	14 Days
Serum Osmolality (OSM)		YES	2 Days		
Sex Hormone Binding Globulin (SHBG)		YES	3 Days		

SFLT-1/PlGF Ratio		YES	3 Days	Referral Test	
Testosterone		YES	2 Days		
Thyroid Peroxidase Antibody (TPO)		YES	2 Days		
Thyroxine / Free t4, FT4		YES	2 Days		
Total Bilirubin		YES	24 Hours		
Total Brain Naturetic Peptide (BNP)		YES - If an EDTA sample was collected originally e.g. a GHB (HbA1C) or FBC was	24 Hours		1 Year – Recommendation is once unless change in presentation

		collected during original venepuncture.			
Total Cholesterol/ HDL cholesterol ratio/ HDL Cholesterol. Full Lipid Profile		YES	3 Days		3 Months
Total Protein		YES	3 Days		
Transferrin (TRF)		YES	3 Days		
Tri-Iodothyronine/ Free T3/ T3		YES	2 Days		
Urate /Uric acid (URA)		YES	3 Days		

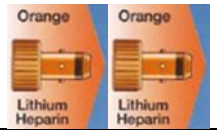
Valproate		YES	3 Days		
Vancomycin		YES	2 Days		
Zinc		YES	3 Days	Referral Test	14 Days
MICROBIOLOGY ADD-ON TEST GUIDE					
Anti HEP B Antibody		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Microbiology.		

ASO Titre		YES	Within 3 Days of sample collection.	Prefer a fresh sample if at all possible.	
Borrelia Serology (Borrelia IGG, Borrelia IGM, Lymes, B.burgdorferi)		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Micro.		
Chlamydia Trachomatis IgG		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if original sample was collected for Microbiology.		
CMV PCR		**NO**	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was		

			collected for Microbiology.		
CMV Serology (CMV IGG, CMV IGM)		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Microbiology.		
EBV Serology (EBNA)		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Microbiology.		
HBsAg		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Microbiology.		

Hepatitis A Igm (HAM)		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Microbiology.		
Hepatitis A Total Serology		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Microbiology.		
Hepatitis B Core Antibody		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Microbiology.		

Hepatitis C Antibody		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Microbiology.		
HIV Antibody/Antigen		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Microbiology.		
Measles (IgG)		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Microbiology.		

Parvoirus (IgG & IgM)		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Microbiology.	Can be added to booking bloods, if required.	
Pertussis anti-PT IgG		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Microbiology.		
Procalcitonin (PCT)		**NO**			
Quantiferon		**NO**			

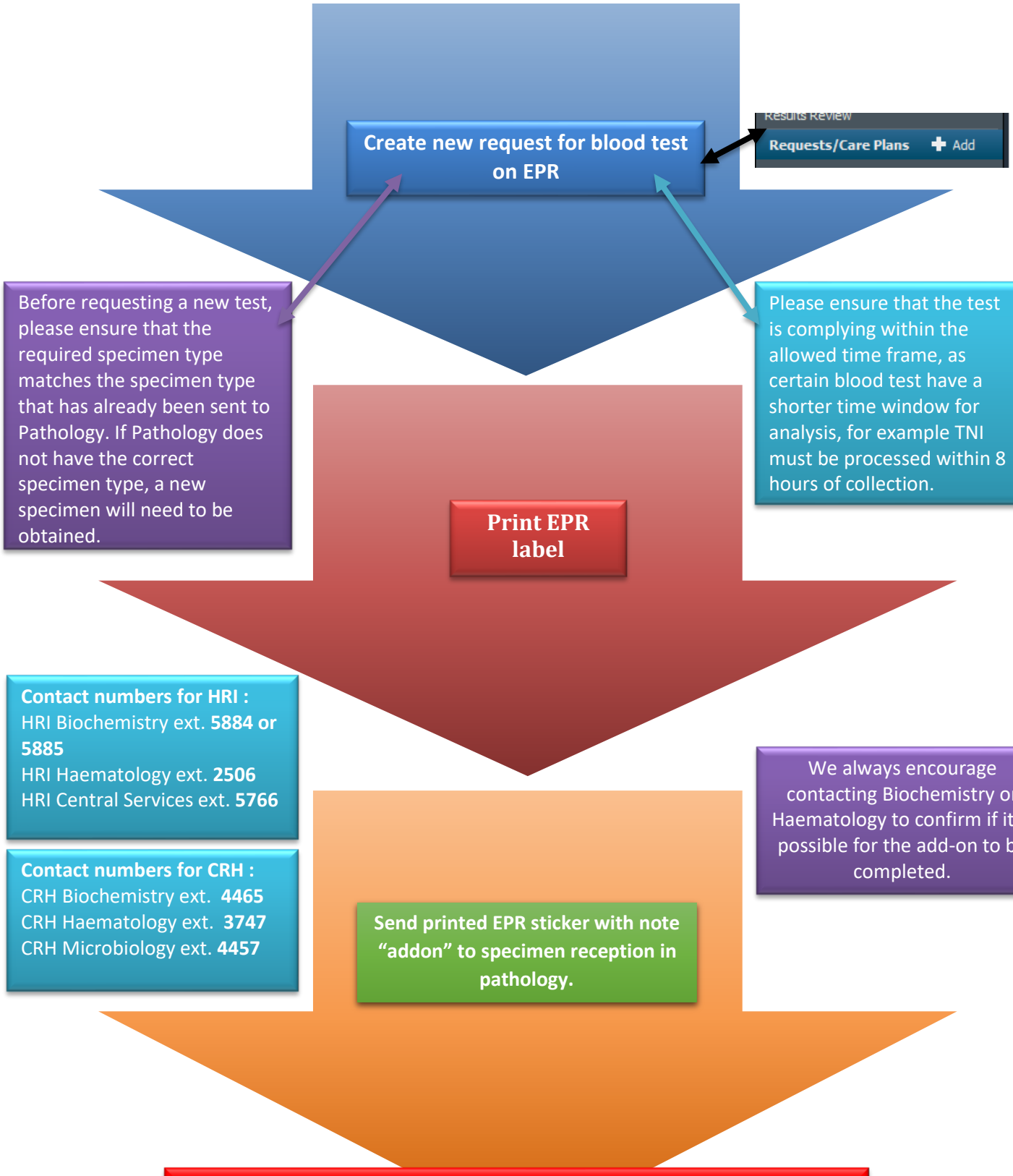
Rubella IGG		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Microbiology.		
Syphilis Serology		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Micro.		
Toxoplasma Serology (IgG & IgM)		YES	3 Days if original sample was collected for Blood Sciences. 1 - 2 Weeks if the original sample was collected for Microbiology.		

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Varicella Zoster Serology (VZV, IgG)		YES –Add to booking bloods.	1 - 2 Weeks if the original sample was collected for Microbiology.		

Calderdale and Huddersfield NHS
NHS Foundation Trust

ADDING-ON PATHOLOGY TESTS IN EPR



The revis[illegible]se). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

IN-HOUSE TEST ANALYSIS LOCATIONS AND RETROSPECTIVE TESTING – BIOCHEMISTRY LABORATORY

Tests	Analysed at:	Retrospective Requests (Add-ons)
ACE	HRI	Yes
Acetaminophen (Paracetamol)	HRI/CRH	Yes
Alanine Transaminase	HRI/CRH	Yes
Albumin	HRI/CRH	Yes
Alkaline Phosphatase	HRI/CRH	Yes
Alpha-1-Antitrypsin	HRI	Yes
Ammonia	HRI/CRH	No
Amylase	HRI/CRH	Yes
Aspartate Aminotransferase	HRI	Yes
Bicarbonate (CO2)	HRI/CRH	No
Bile Acids	HRI	Yes
C3	HRI	Yes
C4	HRI	Yes
Calcium	HRI/CRH	Yes
Carbamazapine	HRI	Yes
C-Reactive Protein	HRI/CRH	Yes
Cholesterol (Total)	HRI/CRH	Yes
Creatine Kinase	HRI/CRH	Yes
Creatinine	HRI/CRH	Yes
Direct Bilirubin	HRI/CRH	Yes
Ethanol	HRI/CRH	Yes
GGT	HRI	Yes

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Tests	Analysed at:	Retrospective Requests (Add-ons)
Glucose	HRI/CRH	Yes
Haptoglobin	HRI	Yes
HDL- Cholesterol	HRI/CRH	Yes
IGA	HRI	Yes
IGG	HRI	Yes
IGM	HRI	Yes
Iron	HRI	Yes
Lactate	HRI/CRH	No
Lactate Dehydrogenase	HRI	Yes
Lipase	HRI	Yes
Lithium	HRI	Yes
Magnesium	HRI/CRH	Yes
Phenytoin	HRI	Yes
Phosphate	HRI/CRH	Yes
Rheumatoid Factor	HRI	Yes
Salicylate	HRI/CRH	Yes
Sodium Valporate	HRI	Yes
Theophylline	HRI	Yes
Total Bilirubin	HRI/CRH	Yes
Total Protein	HRI/CRH	Yes
Transferrin	HRI	Yes
Triglycerides	HRI/CRH	Yes
Urea	HRI/CRH	Yes
Uric Acid	HRI/CRH	Yes
Urine Albumin	HRI	Yes
Urine Protein	HRI/CRH	Yes
AFP	HRI	Yes
BNP	HRI	Yes

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Tests	Analysed at:	Retrospective Requests (Add-ons)
CA125	HRI	Yes
CA153	HRI	Yes
CA19-9	HRI	Yes
CEA	HRI	Yes
Cortisol	HRI	Yes
Digoxin	HRI	Yes
Ferritin	HRI	Yes
Folate	HRI	Yes
FSH	HRI	Yes
FT3	HRI	Yes
FT4	HRI/CRH	Yes
Gentamicin	HRI/CRH	Yes
HCG	HRI/CRH	Yes
LH	HRI	Yes
Oestradiol	HRI	Yes
Progesterone	HRI	Yes
Prolactin	HRI	Yes
PSA	HRI	Yes
PTH	HRI	Yes (stable for 25 hours at Room, temp when capped)
SHBG	HRI	Yes
Testosterone	HRI	Yes
TPO	HRI	Yes
Troponin I	HRI/CRH	Yes (analyse within 8 hours at Room Temp, 24 hours at 2-8°C)
TSH	HRI/CRH	Yes
Vitamin B12	HRI	Yes
Vitamin D	HRI	Yes
Vancomycin	HRI/CRH	Yes

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Tests	Analysed at:	Retrospective Requests (Add-ons)
GHB	HRI	Yes
Osmolality	HRI/CRH	Yes
Macroprolactin	HRI	Yes
Fluid pH	HRI	Yes
Cryoglobulins	HRI	Yes
Sweat Tests	HRI	Yes
Electrophoresis Immunofixation	HRI	Yes
Alkaline Phosphatase Isoenzyme	HRI	Yes
Xanthochromia	HRI	Yes (4 hours from collection and sample has been protected from light)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

LABELLING SAMPLES USING EPR

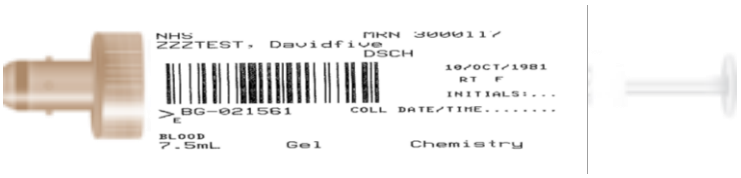
With EPR now being active we no longer have to hand write samples that are done in house and use printed EPR labels. This has brought about its own challenges, and we have experienced several problems with requesting and processing samples. This can be down to duplicated requests, but more often it is down to the labels being put onto samples incorrectly, i.e. upside down or sideways.

Effects of inadequate labelling:

- Increased sample turnaround time/delay in results
    - Laboratory Staff have to reprint label via EPR or contact ward for new barcodes (Delay in processing)
    - Our automated analyser barcode readers fail to read the barcode which results in a delay in analysis.
- Risk for potential patient mismatch
    - Faded Barcode details not clear and processed on wrong patient
    - Reprinted label for wrong patient
    - Reprinted label for wrong tests

We in Blood Sciences would highly appreciate it if you can follow the images below so that every sample is correctly labelled.

- Patient information reading from left to right.
- Label as far up the tube as possible (not touching the cap).
- Patient information clear (not faded/cut off).



The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PATHOLOGY MINIMUM DATASET POLICY (SAMPLE ACCEPTANCE CRITERIA)

Please refer to Trust Policy no TPOL-48, Pathology Minimum Dataset Policy (Laboratory Request Form Completion and Specimen Labelling), link to which is included here:

https://documentation.cht.nhs.uk/uploads/708/C-69-2011%20-%20Laboratory%20Request%20Form%20Procedure%20Policy%20v4.pdf

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

AASA (ALPHA AMINO ADIPIC SEMIALDEHYDE)

Indication	Clinical symptoms of Pyridoxine-Defendant Epilepsy. Urinary analysis of alpha-aminoadipic semialdehyde to confirm diagnosis of Pyridoxine-Defendant Epilepsy.
Referral Laboratory	Professor Peter Clayton G23 – 1C Biochemistry Department UCL Institute of Child Health 30 Guildford Street London WC1N 1EH
Specimen Tube Required	Plain Universal 
Sample Type	Urine
Minimum volume	20mL
Special Collection Requirements	None
Additional Information	Referral should be confirmed with Professor Peter Clayton, Biochemistry Department, UCL Institute of Child Health. Tel: 020 7905 2628
Storage in laboratory	Freeze prior to sending.
Transportation to Referral Laboratory	Transport frozen on dry ice via courier.
Turnaround time	Not stated
Frequency of testing	As and when required.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Investigation for Pompe disease
Referral Laboratory	Willink Biochemical Genetics Laboratory Genomic Diagnostic Laboratories Lysosomal Section 6th Floor, Pod 1 St Mary's Hospital Oxford Road Manchester M13 9WL
Specimen Tube Required	EDTA 
Sample Type	Whole Blood
Minimum volume	5 mL
Special Collection Requirements	Must reach the referral laboratory within 48 hours of venepuncture.
Additional Information	None
Storage in laboratory	Refrigerate prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via courier.
Turnaround time	2 working weeks - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	As and when required

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ABSCESS / PUS SWAB

This test repertoire is currently not available to view.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Acanthamoeba species are environmental free-living amoebae that may act as opportunistic pathogens. Infection with Acanthamoeba spp. can cause cutaneous lesions and sinus infections, keratitis and granulomatous amoebic encephalitis. The latter is an amoeba infection of the central nervous system which is life threatening and often, but not always, seen in immunosuppressed patients.
Sample type/tubes and minimum volumes	For eyes - Corneal scrape, swab, contact lens solution. Meningitis - CSF
Known interfering factors	None stated
Reference Laboratory address	Micropathology Ltd Venture Centre University of Warwick Science Park Sir William Lyons Road Coventry CV4 7EZ
Reference lab website	https://www.micropathology.com/index.php
Contact telephone number	02476 323222
Expected turn-around time	7 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ACETYLCHOLINE RECEPTOR ANTIBODIES (IACR)

Indication	Acetylcholine receptor antibodies are a highly sensitive and specific marker for generalised myasthenia gravis (80-90% sensitivity); up to 90% of generalised MG cases are ACHR positive for ACHR antibodies whilst in pure ocular MG up to 50% of patients are positive
Referral Laboratory	Immunology Laboratory Churchill Hospital Old Road Headington Oxford OX3 7LE
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml. Plasma and CSF are **not** acceptable.
Special Collection Requirements	None
Additional Information	None
Turnaround time	14 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Not stated.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **IACR**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	NPEx
Packaging	Wrap each individual sample in absorbent paper and pack samples and NPEx Manifest in red sample bags. Place packed samples in Transport boxes and seal ready for posting.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ACID GLYCOPROTEIN

Indication	Diagnosis and monitoring of germ cell tumours (seminomas & dysgerminomas, not teratomas) and pineal tumours.
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum volume	2ml
Special Collection Requirements	None
Additional Information	Grossly Haemolysed, Icteric & lipaemic samples not suitable for assay.
Storage in laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround time	7 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	2-3 times weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Unexplained hypoglycaemia, liver disease, metabolic acidosis, cardiomyopathy, muscle weakness. Diagnostic investigation of disorders of fatty acid oxidation.
Referral Laboratory	Specialist Laboratory Medicine Biochemical Genetics Block 46 St James hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Gutherie Blood Spot Card 
Sample Type	Blood Spot
Minimum volume	Ideally 2 full blood spots to be present on card.
Special Collection Requirements	Please check expiry date on bloodspot cards prior to sending. Out of date cards will be rejected.
Additional Information	Contact Biochemical Genetics laboratory for further advice if required.
Storage in laboratory	Store at room temperature prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport.
Turnaround time	18 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Monitoring Adalimumab antibody levels
Referral Laboratory	Blood Sciences Area A2 Royal Devon and Exeter NHS Foundation Trust Barrack Road Exeter EX2 5DW
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum volume	Not stated
Special Collection Requirements	None
Additional Information	Large doses of Biotin (Vitamin B7) may interfere with the assay.
Storage in laboratory	Refrigerate prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post.
Turnaround time	10 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Suspected adenovirus conjunctivitis, pneumonia (especially severe pneumonia in a child <5 years), suspected viraemia in immunocompromised patient. Adenovirus PCR is done as part of the respiratory PCR panel.

Sample type/tubes and minimum volumes

- suspected conjunctivitis - eye swab in viral transport medium
- EDTA blood if viraemia suspected
- nasopharyngeal aspirate or BAL sample in viral transport medium

Clinical details required

Date of onset of symptoms. If immunocompromised.

Timing of sample collection

Can be taken at any time. No prior laboratory notification required unless urgent. Samples not received by noon Monday-Friday will be transported to Leeds the following day unless urgent in which case it must be discussed with a Consultant Microbiologist.

Interpretation

A negative result does not exclude adenovirus infection. Discuss with microbiology if result interpretation is required.

Known Interfering Factors

Quality of sample

Timing of sample in relation to onset of symptoms

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Reference Laboratory Address

Leeds Bradford Microbiology
The Old Medical School
Leeds General Infirmary
Great George Street
Leeds
LS1 3EX

Reference lab website

http://www.pathology.leedsth.nhs.uk/Pathology/

Contact telephone number

tel:01133928766

Expected turn-around time

3 days from receipt in the reference laboratory

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ADRENAL CORTEX ANTIBODIES (IADR)

Indication	Antibodies to adrenal cortex are present in up to 80% of patients with primary Addison's disease at diagnosis but the frequency of positive antibodies decreases with time. Positive antibodies are suggestive of an autoimmune cause of Addison's disease.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	None
Turnaround time	10 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Weekly (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **IADR**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx
Packaging	Pack samples in racks. Place packed samples in Transport bags

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

ALT is raised in liver cell necrosis (hepatitis) from any cause. Alanine transaminase (ALT) is part of the liver function profile. ALT should be monitored prior to and during the first 12 months of statin therapy. Statins should be discontinued if ALT rises to and persists at 3 times the upper limit of the reference range (100 IU/L) See BNF for further details.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Modified IFCC chemistry assay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

No significant interferences have been observed against Haemolytic, Icteric or Lipaemic interferents.

Reference Ranges

0 – 40 IU/L

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Measurements are used in the diagnosis and treatment of chronic inflammatory diseases, collagen diseases, and liver and kidney disorders. Low albumin is associated with nephrosis, oedema. Used as part of both LFT and Bone profiles.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

BCG Dye Binding

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820-242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

No significant interferences have been observed against Haemolytic, Icteric or Lipaemic interferents.

Reference Ranges

35-50 g/L

Turn-around Time

	Serum
A&E	1 hour
Inpatients	4 hours
Outpatients/GPs	24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Measures the level of Ethanol.

Concentrations > 180 mg/dL are associated with disorientation.

Used for clinical purposes ONLY. There is no chain of custody and therefore cannot be used as evidence in court.

Tube/Minimum Volume

Yellow Fluoride (Plasma) - Minimum 1mL.

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Enzymatic

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820-242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

No significant interferences have been observed against Haemolytic, Icteric or Lipaemic interferents.

Reference Ranges

Blood Ethanol 180mg/dl associated with disorientation, Ethanol >350mg/dl usually produces coma, Ethanol >450mg/dl usually fatal.

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Investigation of unexplained hypokalaemia, particularly when associated with hypertension. Raised in primary and secondary aldosteronism, very low sodium diet, pregnancy and Bartter's syndrome. Decreased in CAH, aldosterone synthetase deficiency, very high sodium diet, Addison's disease and hyporeninaemic hypoaldosteronism.
Referral Laboratory	Specialist Laboratory Medicine Endocrine Section Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Lithium Heparin Tube 
Sample Type	Plasma
Minimum volume	1mL
Special Collection Requirements	Must be spun, separated and frozen (posting freezer) within 1 hour of collection.
Additional Information	EDTA tube (plasma) also acceptable.
Storage in laboratory	Freeze prior to sending.
Transportation to Referral Laboratory	Transport frozen on dry ice via CHFT Hospital Transport
Turnaround time	21 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Weekly (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ALKALINE PHOSPHATASE (ALP / ALK)

Indication

Raised in cholestasis bone disease with increased osteoblastic activity and some forms of malignancy.

Used as part of the LFT profile.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

ALP2 Concentrated

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

No significant interferences have been observed against Haemolytic, Icteric or Lipaemic interferents.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

Adult 30 – 130 IU/L

Children up to 16 years 60 - 425 IU/L

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ALKALINE PHOSPHATASE BONE SPECIFIC

Indication	Used to diagnose and assess the severity of metabolic bone disease including Paget disease and Osteomalacia.
Referral Laboratory	Department of Clinical Chemistry Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Plain Tube 
Sample Type	Serum
Minimum volume	2ml
Special Collection Requirements	None
Additional Information	Haemolysed sample not suitable for analysis.
Storage in laboratory	Store at -20° prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround time	10 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Fortnightly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ALKALINE PHOSPHATASE ISOENZYMES (ALPI)

Indication

Used to differentiate bone and liver alkaline phosphatases. Assay is therefore only performed on samples with a raised alkaline phosphatase. Gamma glutamyl transferase (GGT) will also be measured and if normal, the raised alkaline phosphatase is most likely to be bone in origin.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Electrophoresis

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

n/a

Reference Ranges

n/a – interpretative comment provided.

Turn-around Time

Urgent Samples – 10 days

Routine Inpatients – 10 days

OP/GP – 10 days

Frequency of Testing

Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Measurements of alpha-1-antitrypsin levels are used in the diagnosis of juvenile and adult cirrhosis of the liver. In addition, alpha-1-antitrypsin deficiency has been associated with pulmonary emphysema.

Alpha-1-antitrypsin is an acute phase protein, so may be raised as an acute phase reaction. Hence a higher cut-off of 1.1g/L is used to screen for deficiency. All children with Alpha-1-antitrypsin levels <1.2g will be referred for phenotype testing.

Alpha-1-antitrypsin may be raised in pregnancy and in patients on oestrogens.

Alpha-1-antitrypsin acts as a serine proteinase inhibitor. (Inhibits elastase).

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volume stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Polyethylene Glycol (PEG) enhanced Immunoturbidimetric.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

Reference Ranges

Adult (18years): 1.1 – 2.1 g/LChildren:

Birth	0.9 – 2.2g/L
6 Months	0.8 – 1.8g/L
1 years	1.1 – 2.0g/L
5 years	1.1 – 2.2g/L
10 years	1.4 – 2.3g/L
15 years	1.2 – 2.0g/L

Phenotyping is performed if AAT quantitation is <1.2g/L unless specifically requested.

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ALPHA-1-ANTITRYPSIN PHENOTYPE (A1A PHENOTYPE)

Indication	Diagnosis and monitoring of germ cell tumours (seminomas & dysgerminomas, not teratomas) and pineal tumours.
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum volume	2ml
Special Collection Requirements	None
Additional Information	None
Storage in laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround time	10 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	2-3 times weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ALPHA FETOPROTEIN / AFP

Indication

Raised in liver disease, values greater than 500 kU/L are suggestive of malignancy and are used the management of testicular cancer. AFP levels can also be used as part of the Down's Screening Triple test for the indication of neural tube defects.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Direct Sandwich Immunoassay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

0-10 Ku/L

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ALPHA-GALACTOSIDASE

Indication	Investigation for Fabry disease.
Referral Laboratory	Willink Biochemical Genetics Laboratory Genomic Diagnostic Laboratories Lysosomal Section 6th Floor, Pod 1 St Mary's Hospital Oxford Road Manchester M13 9WL
Specimen Tube Required	EDTA 
Sample Type	Whole Blood
Minimum volume	5 mL
Special Collection Requirements	Must reach the referral laboratory within 72 hours of venepuncture
Additional Information	None
Storage in laboratory	Freeze prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via Courier.
Turnaround time	1 working week - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	As and when required

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ALPHA-GLUCOSIDASE ANALYSIS FOR POMPE DISEASE

Indication	Investigation for Pompe disease.
Referral Laboratory	Willink Biochemical Genetics Laboratory Genomic Diagnostic Laboratories Lysosomal Section 6th Floor, Pod 1 St Mary's Hospital Oxford Road Manchester M13 9WL
Specimen Tube Required	Gutherie Spot Card 
Sample Type	Blood Spot
Minimum volume	At least 2 full circles filled and soaked through on Guthrie card.
Special Collection Requirements	None
Additional Information	None
Storage in laboratory	Store at ambient temperature
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post.
Turnaround time	3 working weeks - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	As and when required

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Used in treatment monitoring and in the management of overdoses.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Samples should be taken pre-dose. Reference ranges based on trough levels.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Enzyme multiplied immunoassay technique (EMIT)

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

All ages: 10 –20 mg/L

Turn-around Time

Urgent Samples – 2 hours

Routine Inpatients – 2 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

The major source of circulating ammonia is in the GI tract. Under normal conditions, ammonia is metabolised to urea by liver enzymes. Several diseases, both inherited and acquired, cause elevated ammonia. The inherited deficiencies of urea cycle enzymes are the major cause of hyperammonaemia in infants. Acquired hyperammonaemia diseases are caused by liver disease, renal failure and Reye's syndrome. Elevated ammonia is toxic to the central nervous system.

Tube/Minimum Volume

Orange Lithium Heparin (Plasma) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Laboratory MUST BE contacted prior to collection, sample to be sent on ice and must reach laboratory within 30 minutes of collection.

Once the serum is separated from the red blood cells the sample is stable for 4 hours at 4'C and 24 hours at -20'C

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Method

Enzymatic assay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

Results cannot be reported on samples with a haemolysis level above 1.5g/L haemoglobin.

Reference Ranges

Adult and children 11 – 35 umol/L

Neonates < 100 umol/L

Premature neonates < 150 umol/L

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 1 hour

OP/GP – n/a

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

AMOEBIASIS SEROLOGY

Indication

Suspected amoebic liver abscess

Sample Type/Tubes and Minimum Volumes

Serum Gel (minimum 0.5ml)

node://28903

Clinical Details Required

Travel information. Radiology findings.

Timing of Sample Collection

Sample can be sent at any time.

Interpretation

The IFAT (screening titre 1/80) is an essential test in cases of suspected amoebic liver abscess (ALA). Such cases produce high titres of about 1/160-1/320, and the test is positive in over 95% of cases of ALA by the end of the first 14 days. However, it appears to give false positives in some cases of non-amoebic liver disease. Consequently, it is necessary to confirm a positive result by the Cellulose Acetate

Precipitin test (CAP). The IFAT also gives very good results in cases of amoeboma. In amoebic colitis the test is positive, often at low titre, in about 75% of cases; in cyst passers it is often negative and in other cases it may be positive because of past infection. The test is therefore not suitable for the investigation of vague abdominal symptoms or as a routine check.

Known interfering Factors

Serum samples ideally should not be sent “on the clot”. Please use serum gel or similar tubes to avoid haemolysis of serum if delayed in transit as there is a possibility that the test result may be affected/invalid due to storage temperature.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Reference Laboratory Address

Clinical Diagnostic Parasitology Laboratory

Liverpool School of Tropical Medicine

Pembroke Place

Liverpool, L3 5QA.

Reference Lab Website

http://www.lstmed.ac.uk/health-services/clinical-diagnostic-parasitology-laboratory

Contact Telephone Number

tel:0151 705 3220

Expected Turn-around Time

5 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Raised 3 - 6 hours after episode of pain of pancreatitis; with a peak 20 - 30 hours later. Levels can be raised for 2 - 7 days.

Drugs such as thiazides; sulphonamides; and oral contraceptives can cause pancreatitis. Parotitis (mumps); ectopic pregnancy; intestinal obstruction; mesenteric artery infarction; acute cholecystitis; perforated peptic ulcer; diabetic ketoacidosis and some lung and ovarian tumours MAY raise serum amylase.

Serum amylase is raised in acute and chronic renal failure due to reduced renal clearance. Amylase levels DO NOT correlate with the severity of pancreatitis.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Method

Ethylidene Blocked- PNPG7

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

Reference Ranges

30-118 u/L

Turn-around Time

	Serum
Urgent Samples	1 hour
Routine in-patients	4 hours
OP/GP	24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

AMYLOID A PROTEIN (SAA)

Indication	Monitoring of AA Amyloid, inflammation (acute phase marker).
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum volume	2ml
Special Collection Requirements	None
Additional Information	Turbid, Icteric & lipaemic samples not suitable for assay.
Storage in laboratory	Refrigerate prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround time	7 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	As required.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ANDROSTENEDIONE (ANDI)

Indication	Excessive androstenedione production may occur in PCOS. Idiopathic hirsutism, ovarian and adrenal neoplasm and CAH (congenital adrenal hyperplasia).
Referral Laboratory	Specialist Laboratory Medicine Endocrine Section Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Plain Tube 
Sample Type	Serum
Minimum volume	1mL
Special Collection Requirements	None
Additional Information	Gel tube and Lithium Heparin Tube can also be used.
Storage in laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround time	14 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

ANGIOTENSIN CONVERTING ENZYME / ACE

Indication

Used in the diagnosis of sarcoidosis.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Enzymatic assay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Reference Ranges

18-48 IU/L

Turn-around Time

Urgent Samples – 7 Days

Routine Inpatients – 7 Days

OP/GP – 7 days

Frequency of Testing

Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	All pregnant women booking for antenatal care should be offered and recommended screening for each of the 3 infections: HIV, Hepatitis B and Syphilis.
Tube / Minimum Volume	7.5 ml brown capped Gel tube (preferred). EDTA is accepted.
Sample Collection	Samples should be collected as per CHFT venepuncture policy.
Transport	Specimens are transported to Microbiology, Serology section in a plastic bag attached to the request form. Samples from Huddersfield Royal Infirmary can be sent via the daily van service. Samples may be stored at room temperature or preferably refrigerated if long delays in transport are expected.
Clinical Details Required	Request forms must be identified as antenatal screening requests and tests which the patient has consented to should be ticked. Patients booking late >20 weeks should be marked clearly as urgent – late booker. Patients from women presenting in labour with no screening results should be clearly marked as urgent – patient in labour.
Method	The screening test for HIV detects HIV p24 Antigen and Antibodies to Human Immunodeficiency Virus Type 1, Including Group O (HIV-1 + “O”) and/or Type 2 (HIV-2). The screening test for Hepatitis B is an immunoassay to detect Hepatitis B surface antigen (HBsAg).

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	The screening test for Syphilis is an enzyme immunoassay (EIA) that detects antibodies to *Treponema pallidum*.
Known interfering factors	Currently available assays for the detection of p24 antigen and/or antibodies to HIV-1 and/or HIV-2 may not detect all infected individuals. A negative test result does not exclude the possibility of exposure to or infection with HIV. HIV antibodies and/or p24 antigen may be undetectable in some stages of the infection and in some clinical conditions. It is recognized that the current methods for the detection of hepatitis B surface antigen may not detect all potentially infected individuals. A nonreactive test result does not exclude the possibility of exposure to or infection with hepatitis B. A nonreactive test result in individuals with prior exposure to hepatitis B may be due to antigen levels below the detection limit of this assay or lack of antigen reactivity to the antibodies in this assay. Heterophilic antibodies in human serum can react with reagent immunoglobulins, interfering with *in vitro* immunoassays. Patients routinely exposed to animals or to animal serum products can be prone to this interference and anomalous values may be observed. A nonreactive test result does not exclude the possibility of exposure to or infection with syphilis. *T. pallidum* antibodies may be undetectable in some stages of the infection and in some clinical conditions.
Interpretation HIV	Specimens with an Index Value of less than 1.0 are considered nonreactive for antibodies to HIV-1 and HIV-2 and p24 antigen by the ADVIA Centaur CHIV assay.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	Specimens with an Index Value greater than or equal to 1.0 are sent to Leeds for confirmatory testing.
Interpretation HBsAg	Samples with an Index Value of less than 1.0 are considered nonreactive (negative) for HBsAg. If the sample has an index value greater than 1.0 the specimen is reactive (positive) for HBsAg, and samples are sent to Leeds for confirmatory testing and Hepatitis B markers.
Ref. Range Syphilis	Samples with an Index Value < 0.90 are considered non-reactive for syphilis *T. pallidum* antibodies. Samples with an Index Value ≥ 0.90 and < 1.10 are reported as "equivocal" by the analyser. These samples are sent to Leeds for confirmatory testing. Samples with an Index Value ≥ 1.10 are considered reactive for syphilis *T. pallidum* antibodies. These samples are sent to Leeds for confirmatory testing.
Turn-around Time	The turnaround time for Positive and negative results is 8 working days of the sample receipt in the laboratory. However, for late booking samples the turnaround time is 48hrs to communicate a provisional result. For women in labour – turnaround time is 24 hours.
Frequency of Testing	Routine screening – Daily-Monday to Friday. Late bookers >20 weeks and women in labour tested Monday to Sunday.

ANTI BETA-2-GLYCOPROTEIN 1 ANTIBODIES (B2GP1)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Indication	Raised levels in conjunction with clinical symptoms is considered an indicator of anti-phospholipid syndrome. Antibody concentrations do not correlate with extent or severity of disease. Anti-cardiolipin antibodies are also tested when anti-B2GP1 antibodies are requested.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml
Special Collection Requirements	None
Additional Information	IgG isotype of B2GP1 antibodies tested.
Turnaround time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **APLA** (B2GP1 is part of the APLA screen)
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx
Packaging	Pack samples in racks. Place packed samples in Transport bags

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ANTI C1Q ANTIBODIES

Indication	Hypocomplementaemic Urticarial Vasculitis (HUV), SLE, Lupus Nephritis
Referral Laboratory	Protein Reference Unit Immunology PO Box 894 Sheffield S5 7YT
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	Lipeamic, haemolytic and icteric samples are <u>not</u> suitable.
Additional Information	Please note that this assay is for the measurement of antibodies to C1Q.
Turnaround time	10 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Fortnightly (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **C1Q**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	Sample to be sent with Pathology request form.
Packaging	Wrap each individual sample in absorbent paper and pack samples and request forms in red sample bags. Place packed samples in Transport boxes and seal ready for posting.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ANTI CARDIOLIPIN ANTIBODIES (ACA)

Indication	Associated with thrombosis and recurrent miscarriage. Moderate rises may occur transiently after infection. Ab concentrations do not correlate with extent or severity of thrombosis. IgG anti-beta-2-glycoprotein 1 ab are also tested when anti-cardiolipin ab are requested.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml
Special Collection Requirements	None
Additional Information	IgG isotype of anti-cardiolipin antibodies tested.
Turnaround time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Frequency of testing	Daily (Weekdays)

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **APLA** (ICARD is part of the APLA screen)
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Packaging	Pack samples in racks. Place packed samples in Transport bags

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ANTI-CYCLIC CITRULLINATED PEPTIDE ANTIBODIES (CCP)

Indication	Suspicion/indication of Rheumatoid Arthritis (RA). A sensitive and specific marker for the diagnosis of early RA. A useful marker of RA however the 2009 NICE guidelines recommend the continued use of rheumatoid factor.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	Consider measuring anti-CCP antibodies in people with suspected RA if they are negative for rheumatoid factor.
Turnaround time	7 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **ACCP**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx
Packaging	Pack samples in racks. Place packed samples in Transport bags.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ANTI-DNA ANTIBODIES (IDNA)

Indication	Diagnosis/monitoring of SLE. Positive DNA antibodies tend to correlate with disease activity. Part of the anti-nuclear antibody (ANA) screen which includes anti-DNA, Ro (60 and 52kDA), La, Sm, Sm/RNP, RNP (68kda), Scl-70, Jo-1, CENP-B, chromatin and ribosomal P antibodies.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml
Special Collection Requirements	None
Additional Information	A negative dsDNA antibody does not rule out the diagnosis of SLE.
Turnaround time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **ANA** (DNA is part of the ANA screen)
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx
Packaging	Pack samples in racks. Place packed samples in Transport bags

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ANTI-ENA (EXTRACTABLE NUCLEAR ANTIGENS) ANTIBODIES

Indication	SLE, Sjogrens Syndrome, Mixed Connective Tissue Disease, Polymyositis, Scleroderma. ENA antibody (ab) tests are included in the anti-nuclear ab (ANA) screen which detects the presence of 12 other ANA components: dsDNA, Ro60, Ro52, La, Sm, SmRNP, RNP-68, CENP-B, Scl-70, Jo-1, chromatin and Ribosomal P ab.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml
Special Collection Requirements	None
Additional Information	None
Turnaround time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Frequency of testing	Daily (Weekdays)

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **ANA** (ENA is part of the ANA screen)
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Packaging	Pack samples in racks. Place packed samples in Transport bags

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

HTLV-I/II are closely related human type C retrovirus. HTLV1 has been etiologically associated with neoplastic conditions and a variety of demyelinating neurological disorders including adult T-cell leukaemia

Sample Type/Tubes and Minimum Volumes

Serum tube (No Gel)

node://28903

Clinical Details Required

Related diagnosis

Timing of Sample Collection

Sample can be taken at any time.

Interpretation

Interpretative comments will be supplied by reference if necessary

Known Interfering Factors

n/a

Reference Laboratory Address

Leeds Bradford Microbiology
The Old Medical School
Leeds General Infirmary
Great George Street
Leeds LS1 3EX
Tel 0113 3923499

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ANTI-NEUTROPHIL CYTOPLASMIC ANTIBODIES (ANCA) : ANTI-MPO AND PR3 ANTIBODIES

Indication	Positive ANCA antibodies (ab) associated with small vessel vasculitis including Wegner's Granulomatosis, Microscopic Polyarteritis and Churg-Strauss syndrome Screening involves detection of the presence of anti-MPO and PR3 ab. Positive results may have an ANCA test by immunofluorescence. Levels of MPO/PR3 correlate with disease activity.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml
Special Collection Requirements	None
Additional Information	None
Turnaround time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Frequency of testing	Daily (Weekdays)

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **ANCA**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not routinely considered urgent. However, if clinical indications suggest the patient may have ANCA antibodies, the Clinician may request the sample to be tested urgently. Please inform the Referrals team who will make arrangements for the sample to be sent to the referral lab immediately. If samples are not urgent, they can be stored until the next working day.
Arrangement during public holidays	No special arrangements required unless the test has been requested as URGENT. If samples are not urgent, they can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport. Arrange transport with the Transport department for URGENT samples if the delivery driver has already collected samples or during Out of Hours.
Method of sending patient/test info.	NPEx

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Packaging	Pack samples in racks. Place packed samples in Transport bags

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ANTI-NUCLEAR ANTIBODIES (ANA / ANF)

Indication	Positive ANCA antibodies (ab) associated with small vessel vasculitis including Wegner's Granulomatosis, Microscopic Polyarteritis and Churg-Strauss syndrome Screening involves detection of the presence of anti-MPO and PR3 ab. Positive results may have an ANCA test by immunofluorescence. Levels of MPO/PR3 correlate with disease activity.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml
Special Collection Requirements	None
Additional Information	None
Turnaround time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **ANA**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx
Packaging	Pack samples in racks. Place packed samples in Transport bags

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

ANTI-PSEUDOMONAL ANTIBODIES

Indication

Screening for pseudomonal colonisation in paediatric CF patients who are unable to expectorate.

Sample type/tubes and minimum volumes

Serum

Sample volume 5ml

node://28903

Clinical Details Required

Underlying diagnosis

Timing of Sample Collection

Sample can be taken at any time. Should not be sent in patients chronically infected with pseudomonas.

Interpretation

Rasied anti-pseudomonal antibodies should be discussed with an expert in the management of CF.

Known Interfering Factors

Chronic pseudomonal colonisation.

Reference Laboratory Address

Pathology Services' Clinical Support Unit
Leeds Teaching Hospitals NHS Trust
Old Medical School
Leeds General Infirmary
Leeds
LS1 3EX

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Reference Lab Website

https://www.leedsth.nhs.uk/services/pathology/tests/pseudomonas-antibodies/

Contact Telephone Number

Core Hours: 0113 39 23499

Out of Hours: Switchboard 0113 24 32799

Expected Turn-around Time

17 days from receipt in laboratory

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Therapeutic monitoring of patients taking low molecular weight heparin (LMWH). When a patient is on low molecular weight heparin an anti Xa may in some cases be requested e.g. in patients who are pregnant, obese, very young, elderly and those who have kidney disease or dysfunction.

Tube/Minimum Volume

Sodium citrate (green top) - Minimum 3ml.

Sample Collection

The tube MUST be filled exactly to the line.

Transport

Transport to the lab as soon as possible. Specimens may be delivered by the following routes:-
Pneumatic tube system, phlebotomists, Trust personnel, Trust transport drivers, external medical personnel, White Knights and private hire personnel.

Clinical Details Required

Please give relevant clinical details.

Method

Tested at St. James's Hospital, Leeds.

Interpretation

Numerical Results are reported.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

The condition of the specimen (e.g. haemolysed, lipaemic and parenteral feeding) may affect results).

Reference Ranges

Therapeutic reference ranges and the heparins that they are based on vary.

Critical phone limits

N/A

Turn-around Time

24 hours

Frequency of Testing

24 hour service

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

AQUAPORIN-4 ANTIBODIES (NEUROMYOLITIS OPTICA ANTIBODIES)

Indication	Neuromyelitis Optica (Devic's syndrome)
Referral Laboratory	Immunology Laboratory Churchill Hospital Old Road Headington Oxford OX3 7LE
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml. Plasma is acceptable but CSF not required.
Special Collection Requirements	None
Additional Information	None
Turnaround time	14 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Not stated.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **INMO**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	NPEx
Packaging	Wrap each individual sample in absorbent paper and pack samples and NPEx Manifest in red sample bags. Place packed samples in Transport boxes and seal ready for posting.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Toxicology
Referral Laboratory	Sandwell & West Birmingham Hospitals NHS Trust Department Clinical Chemistry City Hospital Dudley Road Birmingham B18 7QH
Specimen Tube Required	EDTA/Plain Universal 
Sample Type	Whole blood/Urine
Minimum volume	Not stated
Special Collection Requirements	None
Additional Information	Sample should be analysed within 5 days of collection. Interpret with caution thereafter.
Storage in laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Courier
Turnaround time	2-5 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ASO TITRE

Indication

To aid diagnosis of conditions associated with recent infection with Group A streptococcus:

- rheumatic fever
- glomerulonephritis
- reactive arthritis

Not indicated in the diagnosis of acute sore throat as antibody levels do not rise for at least one week after infection.

Tube / Minimum Volume

Serum Gel

Volume 5ml

node://28903

Sample Collection

Venepuncture as per CHFT policy.

Transport

Sample must be received no later than 24 hours after sample collection. No prior notification to laboratory is required.

Clinical Details Required

Date of onset of illness, working diagnosis.

Method

Group A streptococcus (GAS) produces the toxin streptolysin-O. Persons infected with GAS usually produce high levels of antibody to this toxin: anti-streptolysin-O. Serum containing approximately >200IU/ml of anti-streptolysin-O will react with latex beads coated with streptolysin-O causing a visible

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

agglutination reaction to occur. Neat samples that react will be diluted and retested at increasing dilutions to obtain a semi-quantitative result (up to maximum 6 dilutions equating to 6400IU/ml).

Interpretation

Most people will be exposed to GAS at some point and will therefore have circulating anti-streptolysin-O. The normal antibody level is affected by age/season/geography but is usually <100IU/ml in children under 5 years, and between 150-250 IU/ml in school age children and adults.

Anti-streptolysin-O (ASO) levels rise around 1 week after infection and peak at between 3 and 6 weeks after infection. They will normally rise after infection of the upper respiratory tract, but there tends to be a poor antibody response to skin and soft tissue infection.

It can take 6-12 months for anti-streptolysin-O antibody to return to pre-infection levels.

A negative result (i.e. level <200IU/ml) does not exclude the diagnosis of post-streptococcal infection as 10-15% of the population will not mount a detectable antibody response.

Known Interfering Factors

Not specific for Group A streptococcus. Can cross react with S. dysgalactiae subsp. equisimilis.

Ref. Range (Adult)

<200 IU/ml – not suggestive recent infection

200 IU/ml – borderline, consider repeat 2 weeks

≥400 IU/ml – consistent with recent GAS infection

Ref. Range (Paediatric)

Child ≤5 years:

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

≤200IU/ml – not suggestive recent infection

≥400IU/ml – consistent with recent GAS infection

Child >5:

<200IU/ml – not suggestive recent infection.

200IU/ml – may be normal in school age child. Interpret in the clinical context.

≥400IU/ml – consistent with recent GAS infection

Turn-around Time

24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Used as an aid in the differential diagnosis of liver disease in conjunction with ALT. Alcoholic liver disease is associated with an AST/ALT ratio greater than 2. NASH (non-alcoholic steatohepatitis) is associated with an AST/ALT ratio less than 1

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Modified IFCC method.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

No significant interferences have been observed against Icteric or Lipaemic interferents. Samples with a haemolysis level above 1.5g/L cannot be analysed for AST.

Reference Ranges

13 – 40 IU/L

Turn-around Time

Urgent Samples – 8 hours

Routine Inpatients – 8 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ASPERGILLUS ANTIBODY (IGG)

Indication

Diagnosis of allergic bronchopulmonary aspergillosis, aspergilloma, paranasal sinus aspergillosis, other forms of aspergillosis in immunocompetent patients.

Sample Type/Tubes and Minimum Volumes

Serum gel or serum (no gel)

node://28903

Clinical Details Required

Underlying lung disease if patient immunocompromised.

Timing of Sample Collection

Sample can be taken at any time.

Interpretation

Results are returned as mg Antibody per litre (mgA/L) and range from <2.0 to >200. Levels of above 40mg/L are considered significant in most patients. In people with cystic fibrosis, high levels can be found without apparent disease and cutoff of 90mg/L is advised. In all cases the result of this test must be used in conjunction with the results of other laboratory tests, radiology and overall clinical picture in making a diagnosis.

Known Interfering Factors

Immune state of patient.

Reference Laboratory Address

Pathology Services' Clinical Support Unit
Leeds Teaching Hospitals NHS Trust
Old Medical School
Leeds General Infirmary
Leeds LS1 3EX

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Reference Lab Website

http://www.pathology.leedsth.nhs.uk/Pathology/

Contact Telephone Number

tel:0113 3928766

Expected Turn-around Time

9 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

ASPERGILLUS ANTIGEN

Indication

Appropriate for the diagnosis of invasive aspergillosis in patients who are currently or have recently been neutropenic. This test may have value in other immunocompromised patients but is not usually indicated in patients who are likely to have reasonable immune responses where the Aspergillus antibody test is more appropriate.

Sample Type/Tubes and Minimum Volumes

Serum

BAL 700 µl minimum

5 mL clotted blood

node://28903

Clinical Details Required

Underlying diagnosis

Timing of Sample Collection

Sample can be taken at any time

Interpretation

Levels of galactomannan above the cutoff of an index of 0.5 are significant. Negative results are typically around 0.1 or less and results between 0.3 and 0.5 may increase the index of suspicion and indicate repeat testing. Any positives should be confirmed by repeat testing.

Known Interfering Factors

False positives from patients on piperacillin/tazobactam, neonates.

False negatives in patients on prophylaxis.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Reference Laboratory Address

Pathology Services' Clinical Support Unit
Leeds Teaching Hospitals NHS Trust
Old Medical School
Leeds General Infirmary
Leeds
LS1 3EX

Reference Lab Website

http://www.pathology.leedsth.nhs.uk/Pathology/

Contact Telephone Number

tel:0113 3928766

Expected Turn-around Time

5 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	The most clinically significant of the Bartonella species in the UK is *Bartonella henselae* which is the pathogen responsible for Cat Scratch Disease (also known as 'catch scratch fever', 'Teenys Disease', 'Inoculation lymphoreticulosis' and 'subacute lymphadenitis'). Additionally, many of the Bartonella species listed can cause subacute endocarditis (infection of the heart valves), which is often culture negative.
Sample type/tubes and minimum volumes	EDTA whole blood, tissue, vitreous fluid, aqueous fluid and pus.
Known interfering factors	Not stated
Reference Laboratory address	Micropathology Ltd Venture Centre University of Warwick Science Park Sir William Lyons Road Coventry CV4 7EZ United Kingdom
Reference lab website	https://www.micropathology.com/index.php
Contact telephone number	02476 323222
Expected turn-around time	7 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

BASAL GANGLIA ANTIBODIES

Indication	Sydenham's chorea
Referral Laboratory	Neuroimmunology Institute of Neurology Queens Square London WC1 3BJ
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	None
Turnaround time	10 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Not stated.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **BGA**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post. Arrange transport with the Transport department for URGENT samples if the delivery driver has already collected samples or during Out of Hours.
Method of sending patient/test info.	Sample to be sent with Pathology request form.
Packaging	Wrap each individual sample in absorbent paper and pack samples and request forms in red sample bags. Place packed samples in Transport boxes and seal ready for posting.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

BNP / TOTAL BRAIN NATURETIC PEPTIDE

Indication

Used as a tool in the diagnosis of heart failure. Positive patients should be referred for echocardiogram.

Tube/Minimum Volume

Blue KEDTA (Plasma) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Sample Stability 24 Hrs, Add on Requests after this time cannot be accepted

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Two site sandwich direct immunoassay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

> 100pg/mL referral cut-off.

Turn-around Time

Urgent Samples – 48 hours

Routine Inpatients – 48 hours

OP/GP – 48 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

BENCE JONES PROTEIN (URINE PROTEIN ELECTROPHORESIS)

Indication

Used in the diagnosis of monoclonal gammopathies.

Tube/Minimum Volume

White top 25mL Universal (Urine) – Minimum 10mL

8.5ml Urine monovette Tubes x 2 – Minimum 10mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Zone Electrophoresis

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

An interpretive comment will be applied to all reports. Any monoclonal paraprotein bands seen will be typed by immunofixation.

Turn-around Time

Urgent Samples – 10 Days

Routine Inpatients – 10 Days

OP/GP – 10 Days

Frequency of Testing

Daily for initial electrophoresis, clinical interpretation required and possible further confirmatory testing.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

BETA-2-MICROGLOBULIN (B2M)

Indication	Serum B2M is useful for the prognosis and monitoring of lymphoproliferative disease such as multiple myeloma.
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum volume	2ml
Special Collection Requirements	None
Additional Information	None
Storage in laboratory	Refrigerate prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround time	2 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Daily (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

BETA HUMAN CHORIONIC GONADOTROPHIN / BCHG

Indication

Used in the diagnosis of choriocarcinoma, ovarian & testicular tumours, and hydatidiform mole. Used also for the monitoring of at risk pregnancies. In the first trimester of normal pregnancy the beta HCG level doubles approximately every 2 days. (Minimum of 66% every 48 hours) then progressively falls in the following 6 months. A rise of less than 50% in 48 hours in the first trimester suggests possible spontaneous abortion or ectopic pregnancy.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volumes and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Direct Sandwich immunoassay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

n/a

Reference Ranges

0-3 IU/L in a non-pregnant adult

Turn-around Time

Urgent Samples – 2 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

BETA TRACE PROTEIN (B2 TRANSFERRIN/ASIALOTRANSFERRINS) – FLUID ANALYSIS

Indication	Diagnosis of CSF leakage.
Referral Laboratory	Neuroimmunology & CSF Laboratory Institute of Neurology Specimen Reception UCL Queen Square London WC1N 3BG
Specimen Tube Required	Plain Universal and Gel tube  
Sample Type	CSF and Serum
Minimum Volume	CSF - 100µL, Serum – 500µl
Special Collection Requirements	Serum sample is also required for this test.
Additional Information	CSF sample should not be haemolysed.
Storage in Laboratory	Refrigerate prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	3 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Lower levels of carbon dioxide indicate an acidosis. The normal level is 22 to 32 mmol/L. Lower than normal levels can indicate diabetic ketoacidosis, lactic acidosis, alcoholic ketoacidosis, kidney disease, renal failure, diarrhoea, Addison's disease, ethylene glycol poisoning or methanol poisoning. Greater than normal levels can be seen with excessive vomiting, hyperaldosteronism and Cushing's syndrome.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Enzymatic

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

n/a

Reference Ranges

22-32 mmol/L

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Used to monitor intrahepatic cholestasis of pregnancy.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

NADH Enzyme cycling

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

Pregnancy

Normal: 0-14umol/L

Suggestive of mild obstetric cholestasis 14 – 39 umol/L
Suggestive of severe obstetric cholestasis >40 umol/L

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Suspected Cholangitis or Cholecystitis biliary infections.

Tube/Minimum Volume

Minimum volume: 1ml bile

Sample Collection

White Top – should ideally reach the laboratory within 2 hours of sample collection, however if sample collection likely to be delayed until following day then refrigeration is recommended.

Transport

Sample should be transported to laboratory on same day as collection. If this is not possible then refrigerate samples at 4°C (this is not necessary if sample is in boric acid (i.e. red) container

Clinical Details Required

Cholangitis or Cholecystitis

Method

Culture onto agar plates according to clinical details and local policy

Interpretation

Significant organisms will be reported with interpretative comments where indicated. Further interpretation/clinical advice can be obtained through discussion with a Microbiologist.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Turn-around Time

2 – 4 days

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Renal dysfunction in immunocompromised patients, particulary following renal or multi-organ transplantation.

Sample Type/Tubes and Minimum Volumes

EDTA or urine (plain universal)

node://28903

Clinical Details Required

Nature of immunosuppression.

Timing of Sample Collection

No special requirements

Interpretation

Viral copy number/ml will be reported. Can be discussed with microbiology / reference virology laboratory.

Known Interfering Factors

n/a

Reference Laboratory Address

Department of Microbiology, Old Medical School, Leeds General Infirmary, Thoresby Place, Leeds, LS1 3EX

Reference Lab Website

http://www.pathology.leedsth.nhs.uk/testandtubes/ShowTest.asp?ACT=ShowTest&TestID=706

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Contact Telephone Number

tel:01133928750

Expected Turn-around Time

15 days. Results may be available considerably earlier than stated turnaround time.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

BIOPTERIN (BLOOD SPOT)

Indication	Biopterin deficiency disorders
Referral Laboratory	Newborn Screening and Biochemical Genetics Paediatric Laboratory Medicine Birmingham Children's Hospital Steel House Lane Birmingham B4 6NH
Specimen Tube Required	Gutherie Blood Spot Card 
Sample Type	Blood Spot
Minimum Volume	Blood spots to be present on card.
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Store frozen prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	15 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	As and when required.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

BIOTINIDASE

Indication	Common clinical features of biotinidase deficiency include: metabolic acidosis, progressive neurological symptoms, hypotonia, ataxia, seizures, intellectual disability, skin rashes, hair loss, and immune deficiency.
Referral Laboratory	Specialist Laboratory Medicine Biochemical Genetics Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	0.5mL
Special Collection Requirements	Unstable enzyme must be separated and Frozen immediately on receipt. Transport sample frozen. Biotinidase levels fall by 35% per day on unfrozen samples.
Additional Information	Serum preferred but lithium heparin samples are acceptable.
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport frozen on dry ice via CHFT Hospital Transport
Turnaround Time	37 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Sepsis (prior to antimicrobials where possible)

Suspected endocarditis/bloodstream infection

Suspected deep seated infection

Meningitis

Suspected line infection (paired blood cultures required)

Test of clearance of Staphylococcus aureus and Yeast bloodstream infections.

Tube / Minimum Volume

1 aerobic and 1 anaerobic blood culture bottle

1 paediatric bottle in paediatric patients

Paired cultures: a set of blood cultures taken peripherally and from each lumen of each line. Ideally these should be taken as close in time as possible with a similar volume of blood in each blood culture bottle.

node://29006

Sample Collection

As per CHFT Blood Culture Policy by member of staff who has been trained in the collection procedure (ANTT competency assessed). Two sets of blood cultures taken as close to identification of sepsis or fever increases likelihood of successfully culturing an organism. Should be taken prior to administering antibiotics where possible (attempts to obtain cultures should not delay antibiotic administration in life threatening infections, e.g. meningitis). Minimum 5ml per blood culture bottle. Aerobic bottles should ideally be filled first.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Transport

Should be transported to laboratory as soon as possible after collection (must be within 4 hours).

Clinical Details Required

Suspected source of infection, prescribed antibiotics.

Method

Upon receipt by the laboratory, blood culture bottles are placed in a continuously monitored incubator. If evidence of bacterial growth is detected, a Gram stain is performed, the results of which will be communicated to clinical team by a Microbiologist. Blood from the positive bottle is then sub-cultured onto various agar plates according to the organism seen on the Gram stain and incubated overnight to allow bacterial growth. Further testing will then be carried out to identify the organism and the antibiotics to which it is susceptible.

Interpretation

A positive blood culture is usually significant and represents infection as blood should be sterile. Contaminants from the skin may contaminate blood prior to inoculation in the blood culture bottle. Most commonly this will be with Coagulase negative staphylococci (CNS) or diptheroids. These organisms can however cause of infection, particularly when associated with prosthetic material (e.g. lines, prosthetic heart valves) and should be interpreted in the clinical context of the patient.

Known Interfering Factors

Transport delays / delays in loading onto continuously monitored blood culture machine.

Contamination

Presence of antibacterials in the bloodstream at the time of specimen collection

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Turn-around Time

5 days for blood culture to be reported negative.

Incubation times may need to be extended (10-21 days) for specific clinical situations such as endocarditis, brucellosis, and tularaemia.

Timescale for positive blood culture dependent on the organism(s) identified.

Frequency of Testing

Blood cultures are processed daily by the microbiology laboratory.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

BORDETELLA PERTUSSIS CULTURE

Indication

Diagnosis of suspected whooping cough (Bordetella pertussis infection). Serology only useful if patient has had cough for >2 weeks.

Sample type/tubes and minimum volumes

Serum gel

node://28903

Clinical Details Required

Date of onset of symptoms

Timing of Sample Collection

Serology should only be sent if cough has been present for >2 weeks.

Interpretation

The test measures antibodies to pertussis toxin (PT IgG). A level of PT IgG >70 IU/ml is considered evidence of recent infection (in the absence of vaccination within the past year).

Known Interfering Factors

Recent vaccination within the past year - results in this setting should be interpreted with caution.

Reference Laboratory Address

Bacterial Reference Department
Public Health England
61 Colindale Avenue,
London
NW9 5EQ

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Reference Lab Website

https://www.gov.uk/government/collections/bacteriology-reference-department-brd

Contact Telephone Number

tel:020 8327 7887

Expected Turn-around Time

14 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

BORDETELLA PERTUSSIS SEROLOGY

Indication

Diagnosis of suspected whooping cough (Bordetella pertussis infection). Serology only useful if patient has had cough for >2 weeks.

Sample Type/Tubes and Minimum Volumes

Serum gel 7.5mL

node://28903

Clinical Details Required

Date of onset of symptoms

Timing of Sample Collection

Serology should only be sent if cough has been present for >2 weeks.

Interpretation

The test measures antibodies to pertussis toxin (PT IgG). A level of PT IgG >70 IU/ml is considered evidence of recent infection (in the absence of vaccination within the past year).

Known Interfering Factors

Recent vaccination within the past year - results in this setting should be interpreted with caution.

Contact Telephone Number

01422 224457

Expected Turn-around Time

7 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Suspected Lyme's disease

NB Local screening test for Borrelia IgM/IgG is performed first. Only if the screening test is positive will the sample be referred for further testing at the reference laboratory.

Sample Type/Tubes and Minimum Volumes

Serum 7.5ml

node://28903

Clinical Details Required

Travel history - if history of tick bite and when. Presence of rash typical of erythema migrans.

Timing of Sample Collection

Samples can be taken at any time. Blood taken early after infection can be negative as the immune response to the pathogen can fluctuate early in the disease process. Therefore, if the result is negative, and symptoms persist for >3-4 weeks a repeat sample should be sent.

Interpretation

Interpretative comments will be provided with test results and can be discussed with microbiology if required.

Known Interfering Factors

Time of sample in relation to onset of symptoms.

Administration of antibiotics early after infection can give false negative results.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Reference Laboratory Address

Rare and imported pathogens laboratory (RIPL)
UK Health Security Agency
Manor Farm Road
Porton Down
Wiltshire
SP4 0JG

Reference Lab Website

https://www.gov.uk/government/collections/rare-and-imported-pathogens-laboratory-ripl

Contact Telephone Number

01980 612 348

Expected Turn-around Time

10 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Routine screening of donated breast milk pre and post-pasteurisation.

Specimen Container

Sterile container (white top)

node://29006

Sample Collection

2 samples pooled pre-pasteurisation and 2 samples pooled post-pasteurisation should be sent for culture.

Transport

Specimens should be transported to the laboratory as soon as possible.

Clinical Details Required

Whether sample is pre- or post-pasteurisation sample.

Method

Milk inoculated onto agar plate, incubated and plate examined after 24 hours incubation.

Interpretation

Samples reported as ACCEPTABLE or UNACCEPTABLE according to criteria define by NICE:

http://www.nice.org.uk/guidance/CG93/chapter/Key-priorities-for-implementation#screening-and-selecting-donors

Milk which is reported as UNACCEPTABLE should be discarded.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Where one post-pasteurisation sample is culture positive and the other is culture negative, both results will be reported. Repeat sampling for culture may be undertaken.

Frequency of Testing

Week days only

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

BRUCELLA SEROLOGY (BRUCELLOSIS SCREEN)

Indication

Suspected Brucellosis. Brucellosis is a rare disease in the UK as it is a non-endemic country. Typically, most patients will have been exposed to infection in a Mediterranean or Middle Eastern country, but the range of countries with risk is changing. A detailed travel history is vital.

Sample Type/Tubes and Minimum Volumes

Serum- 7.5mL

node://28903

Clinical Details Required

Symptoms with date of onset, travel history, animal contact.

Timing of Sample Collection

Sample can be taken at any time.

Interpretation

Approximately 95% of sera received by BRU are seronegative in all screening tests. The remaining 5% of brucellosis serology results need to be interpreted with caution because of possible false negative results (in early infection) or false positive results (due to prior exposure).

Known Interfering Factors

Timing of sample in relation to infection, failure to obtain a convalescent sample.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Laboratory Address

Liverpool Clinical Laboratories
Virology Department
8th Floor, Duncan Building
Royal Liverpool and Broadgreen Hospital
Prescot Street
Liverpool
L7 8XP

Reference lab website

https://www.gov.uk/government/collections/brucella-reference-unit-bru

Contact Telephone Number

0151 706 4410

Expected Turn-around Time

10 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

C PEPTIDE

Indication	To monitor insulin production or assessment of insulin resistance
Referral Laboratory	Guildford RSCH Peptide Hormone Laboratory Berkshire and Surrey Pathology Services Royal Surrey County Hospital Egerton Road Guildford GU2 7XX
Specimen Tube Required	Gel or Lithium Heparin 
Sample Type	Serum or Lithium Heparin Plasma
Minimum Volume	1mL
Special Collection Requirements	Sample must be sent to the Laboratory within 1 hour of collection. Blood sample should be collected only when patient is hypoglycaemic.
Additional Information	None
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport frozen on Dry Ice via Courier.
Turnaround Time	4 weeks - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Not stated

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

C1 ESTERASE INHIBITOR (QUANTITATION AND FUNCTIONAL LEVEL)

Indication	Investigation and monitoring of hereditary/acquired angioedema.
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	2ml
Special Collection Requirements	None
Additional Information	Grossly lipeamic, icteric or haemolysed samples are unsuitable for the assay.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport frozen sample at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	5 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	2-3 times weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Acute phase protein used to detect/monitor treatment of infection or inflammation

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Latex enhanced immunoturbidimetric

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

0-10mg/L

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

CAFFEINE

Indication	Caffeine toxicity
Referral Laboratory	Department of Clinical Chemistry Sheffield Children's Hospital Western Bank Sheffield S10 2TH
Specimen Tube Required	Lithium Heparin Tube 
Sample Type	Plasma
Minimum Volume	0.5ml
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	7 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Serum calcium measurements are used in the diagnosis and treatment of parathyroid disease, a variety of bone diseases, chronic renal disease and tetany.

Urinary calcium measurement is used in the differential diagnosis of absorptive hypercalciuria and hypocalciuria caused by hyperparathyroidism, hyperthyroidism, Paget's disease or "renal leak" type of calciuria as seen in renal tubular acidosis.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL
Spot Urine Calcium = 20ml white top universal - minimum volume 10ml
2.5L White top Container (24hr Urine for stone analysis)

Sample volumes stated are for guidance only, Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Adjusted Calcium is automatically reported and normally requested as part of the Bone Profile. Patient should be ideally fasting and avoid prolonged venous stasis.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Arsenazo III.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

Reference Ranges

Serum: 2.2-2.6 mmol/l

Turn-around Time

	Serum	Urine
Urgent Samples	1 hour	24 hours (Random only)
Routine inpatients	4 hours	24 hours (Random only)
OP/GP	24 hours	24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

CA 125 may be found in elevated concentrations in certain ovarian malignancies. Levels may be used in monitoring the response to therapy. CA 125 may also be elevated in diseases other than epithelial ovarian cancer, including other benign or malignant ovarian diseases, such as endometriosis, and in lung cancer and in other non-cancerous conditions such as pregnancy.

It has been reported that patients with levels exceeding 35 U/ml post operatively have the highest risk for clinical recurrence. Rate of change of CA 125 following chemotherapy is also highly prognostic with a rapid decrease indicating a positive response to treatment.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Two site sandwich immunoassay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

No significant interferences have been observed against Haemolytic, Icteric or Lipaemic interferents.

Reference Ranges

0 – 35 Ku/L

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

CA 153 antigen levels are elevated in many patients with epithelial breast carcinoma. Increasing levels may be representative of disease progression. Elevated levels of CA 153 may also be present in those patients with lung, ovarian, pancreatic, and colorectal cancers, as well as non-malignant conditions including benign breast and liver disease, cirrhosis, and hepatitis.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Two step sandwich immunoassay.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820-242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

No significant interferences have been observed against Haemolytic, Icteric or Lipaemic interferents.

Reference Ranges

0 – 30 Ku/L

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

CA 199 antigen levels are primarily used to aid the management of pancreatic cancer patients. Levels may also be raised in colorectal, bile duct, hepatocellular, stomach, and oesophageal cancers. Non-cancerous conditions that may elevate CA 199 levels include cirrhosis, cholangitis, hepatitis, pancreatitis, and non-malignant gastrointestinal diseases.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Two step sandwich immunoassay.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

No significant interferences have been observed against Haemolytic, Icteric or Lipaemic interferents.

Reference Ranges

0 – 37 Ku/L

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

CAERULOPLASMIN

Indication	Diagnosis of Wilson's disease.
Referral Laboratory	Clinical Immunology Old Medical School Leeds General Infirmary Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	2mL
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transpost.
Turnaround Time	7 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Calcitonin is the principle tumour marker of medullary thyroid carcinoma (MTC). It is measured in diagnosis and monitoring of MTC and occasionally for diagnosis of other neuroendocrine tumours.
Referral Laboratory	Pathology Department Charing Cross Hospital Fulham Palace Road W6 8RF
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	2mL
Special Collection Requirements	A fasting sample is recommended.
Additional Information	Grossly haemolysed samples are unsuitable for the assay.
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport frozen on Dry Ice via Courier.
Turnaround Time	10 days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Not stated

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CARBOHYDRATE DEFICIENT TRANSFERRIN

Indication	Chronic alcoholism and alcohol avoidance compliance.
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	2ml
Special Collection Requirements	None
Additional Information	Occupational Health requests only.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	5 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Used for monitoring therapy.

A steady state level will not be achieved for at least 2 weeks after initiating therapy.

Tube/Minimum Volume

White Top (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Blood should not be collected for at least 3 days subsequent to a change in dose.

Sample should ideally be collected immediately prior to the next dose or at least 6 hours post dose.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Enzyme multiplied immunoassay technique EMIT.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

n/a

Reference Ranges

4 – 12 mg/L

Turn-around Time

Urgent Samples – 24 Hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CARBOXYHAEMOGLOBIN / CARBON MONOXIDE

Indication

Used in the assessment of carbon monoxide poisoning.

Tube/Minimum Volume

Lithium Heparin (Orange Top) – Minimum 1 ml

Sample volume stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Sample needs to be filled to the top and reach laboratory ASAP, as sample is unstable.

Transport

Transport to the lab as soon as possible, due to sample stability

Clinical Details Required

Please give relevant details on the request form.

Method

Optimal measurement blood gas

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

Non-smoker < 2%
Smoker < 9%
Intoxication 15-20 %
Levels above 25 - 30% indicate severe poisoning

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 1 hour

OP/GP – 1 hour

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CARCINO EMBRYONIC ANTIGEN (CEA)

Indication

CEA has a limited value in primary diagnosis of malignancy. It has a greater role in the detection of recurrent disease or in monitoring tumour therapy. This may be appropriate in cases of colorectal, gastric, breast, bronchial and some ovarian carcinomas

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Sandwich Immunoassay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

0 – 5 ug/L

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CARNITINE (TOTAL / FREE)

Indication	Used to evaluate patients with a clinical suspicion of a wide range of inborn errors of metabolism, such as organic acidemias and fatty acid oxidation disorders, including Primary Carnitine Deficiency.
Referral Laboratory	Department of Clinical Chemistry Sheffield Children's Hospital Western Bank Sheffield S10 2TH
Specimen Tube Required	Lithium Heparin Tube 
Sample Type	Plasma
Minimum Volume	0.5ml
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	5-14 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Detection of rectal carriage of carbapenemase producing enterobacteriaceae (CPE) in patients who are screened to be at risk of carrying them on admission to hospital.

At risk patients are those that have been in hospital/dialysed abroad in the past 12 months, or who have been in a London or Manchester hospital in the past 12 months. Patients who are household contacts of known carriers of CPE should also be screened.

3 samples must be sent 48 hours apart.

Tube / Minimum Volume

Swab in Amies Transport Medium

Faeces sample can also be used, although this may delay results as 3 samples are required in total, taken 48 hours apart.

node://28963

Sample Collection

The swab should be inserted 3-4cm past the anal sphincter and rotated a few times. The swab must be visibly soiled to ensure there is a sufficient sample for the laboratory to process.

Transport

Transport to the laboratory as soon as possible.

Clinical Details Required

Travel history

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Method

Culture on selective media (agar plates). Enterobacteriaceae that are found to be resistant to ertapenem undergo further testing using immunochromatograph test O.K.N.V and supplementary testss (Modified Hodge Test and Rosco disk testing).

Interpretation

Provisional results will be communicated to users, as will confirmatory results when available. Infection Prevention & Control Advice will be given.

It is important that when a patient is known to be colonised with CPE, that all antimicrobial prescriptions are discussed with microbiology.

Known Interfering Factors

Transit time. Quality of specimen taken

Turn-around Time

Negative results - 24 hours

Positive results – presumptive result 24-48hrs and confirmed result 48hrs -72 hrs

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CD PANEL (T & B LYMPHOCYTE SUBSETS)

Indication	Suspected cellular immunodeficiency. These tests are most frequently done in patients who are suspected of having an underlying immunodeficiency or are receiving immunosuppressive drugs.
Referral Laboratory	Department of Immunology Clinical Sciences Centre Clinical Sciences Building 3 Manchester Royal Infirmary M13 9WL
Specimen Tube Required	EDTA Tube 
Sample Type/Minimum volume	Whole blood - 5ml.
Special Collection Requirements	Samples should be stored at room temperature and received by the referral laboratory within 48 hours of collection.
Additional Information	*Factors affecting the test:* Age. Acute infection and immunosuppressive drugs will alter T and B lymphocyte numbers.
Turnaround time	2 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Daily (Monday – Saturday)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **CDP**
Preparation	Do **NOT** centrifuge sample.
Storage	Place primary sample tube in the designated rack at ambient room temperature
Additional Information	Samples should be sent for referral following document *LI 990-105 Posting samples for CD markers (including CD4).*
Urgent requests	This test is not routinely considered urgent. However, the Clinician may request the sample to be tested urgently. Please inform the Referrals team who will make arrangements for the sample to be sent to the referral lab immediately. If samples are not urgent, they can be stored until the next working day unless it is a weekend. If a sample is received after the final pickup on Friday, arrange transport with the Transport department to collect and deliver the sample the same day. (See *LI 990-105 Posting samples for CD markers (including CD4).*
Arrangement during public holidays	Special arrangements will need to be put into place to ensure samples are not collected prior to public holidays. If a sample is received after the final pickup prior to public holidays, follow *LI 990-105 Posting samples for CD markers (including CD4).*

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Courier. Arrange transport with the Transport department for URGENT samples if the delivery driver has already collected samples or during Out of Hours.
Method of sending patient/test info.	NPEx

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Packaging	Pack samples in racks. Place packed samples in Transport boxes.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

CD4 (T CELL) COUNT

Indication	Used as a monitoring tool in serologically confirmed HIV infection. This test should not be used to diagnose HIV infection.
Referral Laboratory	Department of Immunology Clinical Sciences Centre Clinical Sciences Building 3 Manchester Royal Infirmary M13 9WL
Specimen Tube Required	EDTA Tube 
Sample Type/Minimum volume	Whole blood - 5ml.
Special Collection Requirements	Samples should be stored at room temperature and received by the referral laboratory within 48 hours of collection.
Additional Information	*Factors affecting the test:* Because physiological stress can affect results, avoid testing during acute infections, postoperatively etc. Always try and do monitoring tests at the same time of day. In women, try to do monitoring tests at the same phase of the menstrual cycle
Turnaround time	1 Day - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Daily (Monday – Saturday)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **CD4**
Preparation	Do **NOT** centrifuge sample.
Storage	Place primary sample tube in the designated rack at ambient room temperature
Additional Information	Samples should be sent for referral following document *LI 990-105 Posting samples for CD markers (including CD4).*
Urgent requests	This test is not routinely considered urgent. However, the Clinician may request the sample to be tested urgently. Please inform the Referrals team who will make arrangements for the sample to be sent to the referral lab immediately. If samples are not urgent, they can be stored until the next working day unless it is a weekend. If a sample is received after the final pickup on Friday, arrange transport with the Transport department to collect and deliver the sample the same day. (See *LI 990-105 Posting samples for CD markers (including CD4).*
Arrangement during public holidays	Special arrangements will need to be put into place to ensure samples are not collected prior to public holidays. If a sample is received after the final pickup prior to public holidays, follow *LI 990-105 Posting samples for CD markers (including CD4).*

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Courier. Arrange transport with the Transport department for URGENT samples if the delivery driver has already collected samples or during Out of Hours.
Method of sending patient/test info.	NPEx
Packaging	Pack samples in racks. Place packed samples in Transport boxes.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CHLAMYDIA SCREENING (MOLECULAR DETECTION)

Test repertoire currently not available to view.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

.

Indication	C. trachomatis is known to be the most common bacterial sexually transmitted disease (STD) in Europe. IgG antibody detection is a marker for Chlamydial positive immune-response, either for current, chronic or past infections.
Tube / Minimum Volume	5 ml serum or EDTA
Sample Collection	As per CHFT venepuncture policy
Transport	Send to the laboratory as soon as possible
Clinical Details Required	As appropriate
Method	The LIAISON® Chlamydia trachomatis IgG assay uses chemiluminescence immunoassay (CLIA) technology for the semiquantitative determination of specific IgG antibodies to *Chlamydia trachomatis* in human serum or plasma samples.
Interpretation	**Negative:** Chlamydia trachomatis IgG concentration below 9 should be graded as negative. A negative result for IgG antibodies generally indicates that the individual has not been infected and is susceptible to Chlamydia. However, it does not exclude the possibility of acute Chlamydia trachomatis, because the infection may be in its very early stage and the patient may be still unable to synthesize antibodies, or the antibodies may be present in undetectable levels **Positive:** Chlamydia trachomatis IgG concentration equal to or above 11 should be graded as Positive. A positive result for

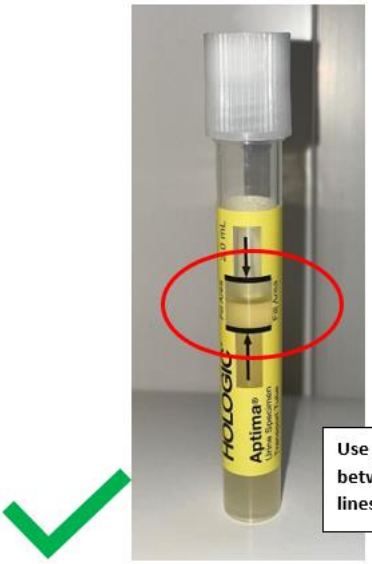
The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	IgG antibodies to Chlamydia trachomatis can either indicate current, chronic or past infections. **Equivocal:** Chlamydia trachomatis IgG concentration 9 - 11 should be graded as equivocal. A second sample should be collected and tested no less than one to two weeks later when the result is repeatedly equivocal
Known interfering factors	Not stated
Ref. Range (Male)	N/A
Ref. Range (Female)	N/A
Ref. Range (Paed)	N/A
Turn-around Time	5 days
Frequency of Testing	Routine: Monday - Friday

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CHLAMYDIA TRACHOMATIS PCR

Indication	For direct, qualitative detection of Chlamydia trachomatis RNA from clinician-collected female endocervical, vaginal, male urethral specimens, and both male and female throat and rectal swab specimens; patient-collected vaginal, both male and female throat and rectal swab specimens and female urine specimens. The assay is indicated for use with asymptomatic and symptomatic individuals to aid in the diagnosis of gonococcal urogenital disease.
Tube / Minimum Volume	Aptima Urine collection kit for male and female urine specimens or plain urine in sterile universal. If using Aptima urine collection kits the urine liquid level must fall between the two black lines on the tube. (See images below). Aptima Unisex Swab Specimen Collection Kit for Endocervical and Male Urethral Swab Specimens Aptima Multitest Swab Specimen Collection Kit 

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	
Sample Collection	Urine samples should be collected Aptima Urine collection tubes or appropriate preservative free containers. Swabs should be collected using the applicable collection system dependent on body site.
Transport	Sample should be transported to the laboratory without delay. Urine specimens which are not in Aptima Urine collection kit tubes must reach the laboratory within a maximum of 24 hours.
Clinical Details Required	Relevant clinical details should be included on the request form.
Method	The Aptima Combo assay is a target amplification nucleic acid probe test that utilizes target capture for qualitative detection and differentiation of ribosomal RNA (rRNA) from Chlamydia trachomatis (CT and/or Neisseria gonorrhoeae (GC) to aid in the diagnosis of chlamydial and/or gonococcal disease using Panther system.
Interpretation	CT positive – Positive for CT rRNA CT negative – presumed negative for CT rRNA CT Equivocal – Indeterminate, a new specimen should be collected. As true for all non-culture methods, a positive specimen obtained from a patient after therapeutic treatment

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	cannot be interpreted as indicating presence of viable CT. As true for all urine test methods, a negative urine result for a female patient who is clinically suspected of having a gonococcal infection does not rule out the presence of CT in the urogenital tract. A negative result for CT does not preclude presence of a CT infection because results are dependent on adequate specimen collection, absence of inhibitors, and the presence of sufficient rRNA to be detected.
Known Interfering Factors	The Aptima Combo 2 Assay has not been validated for use with specimens collected by patients at home. The performance of Aptima Combo 2 assay has not been evaluated in patients less than 14 years of age. The Aptima Combo 2 Assay is not intended for the evaluation of suspected sexual abuse or for other medico-legal indications. Additional testing is recommended in any circumstance when false positive or false negative results could lead to adverse medical, social, or psychological consequences. Therapeutic success or failure cannot be determined with the assay since nucleic acids from CT may persist following antimicrobial therapy. The effects of other specimen collection variables, use of tampons, douching, have not been determined.
Ref. Range (Male)	N/A
Ref. Range (Female)	N/A
Ref. Range (Paed)	N/A
Turn-around Time	3 days for negatives 4 days for positives
Frequency of Testing	Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CHOLESTEROL (TOTAL) / HDL CHOLESTEROL RATIO

Indication

In primary prevention of CHD it is best measured in conjunction with HDL Cholesterol, so that risk can be assessed using the Total/HDL Cholesterol ratio.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Cholesterol levels should be assessed in conjunction with other cardiovascular risk factors such as, age, sex, blood pressure, smoking.

For cholesterol and HDL cholesterol requests ONLY the patient does not need to be fasted.

If a full lipid profile is required, the patient should fast overnight.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Enzymatic

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

n/a

Reference Ranges

n/a

Turn-around Time

Urgent Samples – 3 hours

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CHOLINESTERASE GENOTYPING

Indication	Investigate an individual's ability to metabolize muscle relaxants which may lead to prolonged paralysis and apnoea.
Referral Laboratory	Department of Clinical Biochemistry Cholinesterase Laboratory Southmead Hospital Westbury-on-Trym Bristol BS10 5NB
Specimen Tube Required	EDTA 
Sample Type	Whole Blood
Minimum Volume	4 mL
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post.
Turnaround Time	10-12 weeks - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	As and when required

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CHOLINESTERASE PHENOTYPING

Indication	Suxamethonium (scoline) apnoea
Referral Laboratory	Department of Clinical Biochemistry Cholinesterase Laboratory Southmead Hospital Westbury-on-Trym Bristol BS10 5NB
Specimen Tube Required	EDTA 
Sample Type	Whole blood
Minimum Volume	3ml
Special Collection Requirements	None
Additional Information	Cholinesterase Activity and Phenotyping. Genotyping can be added to this sample if later required. Samples are kept for 3 months.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	3-4 weeks - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Predominantly used for assessing wear of artificial hip joints.
Referral Laboratory	The SAS Laboratories Clinical Biochemistry Charing Cross Hospital Fulham Palace Road Hammersmith London W6 8RF
Specimen Tube Required	EDTA 
Sample Type	Whole Blood
Minimum Volume	0.5 mL
Special Collection Requirements	None
Additional Information	Whole Blood preferred, Serum accepted
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post.
Turnaround Time	2 weeks - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Batch testing

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

CHROMOGRANIN A

Indication	Markers for monitoring neuroendocrine tumours (Phaeochromocytoma, medullary Carcinoma of Thyroid, Pancreatic islet cell adenoma and carcinoma, parathyroid adenoma, small cell carcinoma of lung and neuroblastoma).
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	EDTA 
Sample Type	Plasma
Minimum Volume	2ml
Special Collection Requirements	Sample should be separated and frozen within 3 hours of collection.
Additional Information	Serum Gel or Lithium Heparin can be used if EDTA in unavailable.
Storage in Laboratory	Refrigerate prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	14 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CLOSTRIDIUM DIFFICILE SCREEN

Investigation	Clostridium difficile
Indication	New onset diarrhoea (type 5-7) of unknown aetiology.
Tube	 **Blue** top with scoop
Sample Collection	Only Bristol stool chart type 5-7 stool will be tested for the presence of *Clostridium difficile*. 5g of stool is sufficient (5 scoops full). If stool is liquid, 3-5ml is sufficient. Care must be taken to ensure the container lid is tightly sealed.
Clinical Details to Provide Laboratory	Date of onset. If any evidence of colitis.
Transport	Transport to the laboratory as soon as possible. If significant delay in transport time anticipated (i.e. overnight) then sample should be refrigerated.
Description of Testing	• Initial test to look for antigen produced by C. difficile called GDH. If GDH detected, then C. difficile is highly likely to be present. Further testing is required to determine if the strain of C. difficile is producing toxin. • Toxin test – will detect the presence of either toxin A or toxin B (positive result does not differentiate between toxins). • Toxin Gene – where GDH is positive, but the toxin test is negative, a PCR (polymerase chain reaction) genetic test is performed to look for the presence of the gene that codes for toxin.
Interpretation	C. difficile – NEGATIVE: GDH negative: no evidence of C. difficile infection. This test has a sensitivity of 99.1%, specificity of 98.3% and a negative predictive value of 99.8%. C. difficile – TOXIN detected: evidence of toxigenic strain of C. difficile that is currently producing detectable toxin. Confirms C. difficile infection (CDI) if appropriate clinical picture. This test has a sensitivity of between 76 and 90%. C difficile – GENE detected – C. difficile is present, and it is has the potential to produce toxin. Given the sensitivity of the toxin test is only between 76% and 90%, some strains that are producing toxin will be missed by the toxin test. Therefore, if the clinical picture is consistent with CDI and the patient has C. difficile that is toxin gene positive, they should be treated a case of C. difficile infection with appropriate antibiotics (see full trust guidance).
Freq.	Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Ref. Range (Male)	n/a
Ref. Range (Female)	n/a
Ref. Range (Paed)	Samples from children <2 years old will not be processed without the prior agreement of a consultant microbiologist.
Ref. Range Notes	n/a
Units	n/a
Turnaround Time	1 day

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

All cases of unexplained haemorrhage or thrombosis. Liver & renal disease. Pre-operative screening. Premature infants. DIC.
This is a qualitative, global screen which tests the intrinsic, extrinsic and common pathways of the coagulation cascade. Components of the test are PT (Prothrombin time), APTT (activated partial thromboplastin time) and fibrinogen.

Tube/Minimum Volume

Sodium citrate (green top) - Minimum 3ml

Sample Collection

The tube MUST be filled exactly to the line.

Transport

Transport to the lab as soon as possible. Specimens may be delivered by the following routes:
Pneumatic tube system, phlebotomists, Trust personnel, Trust transport drivers, external medical personnel, White Knights and private hire personnel.

Clinical Details Required

Please give relevant clinical details

Method

Sysmex CS 2500 Analyser

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

Results are reported as below with the normal ranges.

Known Interfering Factors

The condition of the specimen (e.g. haemolysed, lipaemic and parenteral feeding) may affect results).

Reference Ranges

PT	9.7 – 12.3 secs
APTT	21.0 – 29.0 secs
Derived Fibrinogen	1.9 – 3.1 g/L
Clauss Fibrinogen	1.8 - 3.5 g/L

Critical Phone Limits

INR>5.0, APTT ratio >3.5, Clauss fibrinogen <1.0 g/L

Turn-around Time

1 - 2 hours

Frequency of Testing

24 hour service

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Monitoring therapy
Referral Laboratory	Sandwell & West Birmingham Hospitals NHS Trust Department of Clinical Chemistry City Hospital Dudley Road Birmingham B18 7QH
Specimen Tube Required	EDTA 
Sample Type	Whole blood
Minimum Volume	Not stated
Special Collection Requirements	Samples should be collected immediately before the next dose, i.e. pre-dose (trough), or a minimum 12 hours post-dose.
Additional Information	Not routinely available. Authorisation from the budget holder will be required before referring sample.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post.
Turnaround Time	2-3 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CYTOMEGALOVIRUS (CMV) PCR

Indication

Suspected acute CMV (after serological testing), suspected CMV reactivation (e.g. renal transplant recipients). Suspected CMV pneumonitis. Suspected CMV colitis.

Sample Type/Tubes and Minimum Volumes

Blood - EDTA

Urine - universal container

BAL, CSF and tissue samples can also be sent - collect in a universal container. Tissue should be kept moist with some normal saline.

Clinical Details Required

If immunosuppressed.

Timing of Sample Collection

Sample can be taken at any time.

Interpretation

Interpretative comments will be provided with the report. Further clarification/advice can be sought from microbiology.

Known Interfering Factors

Not stated

Reference Laboratory address

Leeds Bradford Microbiology
The Old Medical School
Leeds General Infirmary
Great George Street
Leeds LS1 3EX

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Reference Lab Website

http://www.pathology.leedsth.nhs.uk/pathology/Home.aspx

Contact Telephone Number

tel:0113 3923499

Expected Turn-around Time

5 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CYTOMEGALOVIRUS (CMV) SEROLOGY

Indication

Suspected acute CMV infection by determination of presence of CMV IgM antibodies.

Determination of CMV IgG antibodies to suggest previous exposure to CMV

Tube / Minimum Volume

Serum Gel 7.5ml

node://28903

Sample Collection

Venepuncture as per CHFT policy

Transport

Transport to Microbiology Laboratory as soon as possible

Clinical Details Required

Date of onset of symptoms, if immunocompromised

Method

Local screening for CMV IgG/IgM serology - confirmation sent to Leeds Virology

Interpretation

Interpretative comments will be provided on written report.

Known Interfering Factors

Specimens from patients receiving preparations of mouse monoclonal antibodies for therapy or diagnosis may contain human anti-mouse antibodies (HAMA). Such specimens may interfere in a monoclonal antibody-based immunoassay and their results should be evaluated with care.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Turn-around Time

1-3 days for screening results.

6 days for referred test.

Frequency of Testing

Monday to Friday

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Cases of known or suspected deficiency of one or more coagulation factors (e.g. haemophilia). DIC. Suspected factor inhibitor(s). Abnormal PT and/or APTT.
This is a quantitative test for individual coagulation factors. It must only be requested in cases of a known factor deficiency (for therapeutic monitoring) or when there is a prolonged and unexplained abnormal PT and/or APTT.
This is NOT a routine screening test.

Tube/Minimum Volume

Green Citrate (Sodium) - Minimum 3ml

Sample Collection

The tube MUST be filled exactly to the line.
At least two tubes are required.

Transport

Transport to the lab as soon as possible. Specimens may be delivered by the following routes:
Pneumatic tube system, phlebotomists, Trust personnel, Trust transport drivers, external medical personnel, White Knights and private hire personnel.

Clinical Details Required

Please give relevant details on the request form.

Method

Sysmex CS 2500 Analyser

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

Results are reported in IU/dL.
Normal ranges for age related children will be shown at the side of children's reports.

Known Interfering Factors

Grossly haemolysed samples, lipaemic samples and samples with clots will be rejected. Certain drugs and inhibitors such as lupus anticoagulants may interfere with the results.

Reference Ranges

Adults:	Factor 2	70-120 IU/dL
	Factor 5	70-140 IU/dL
	Factor 7	70-120 IU/dL
	Factor 8	70-150 IU/dL
	Factor 9	70-120 IU/dL
	Factor 10	70-120 IU/dL
	Factor 11	70-120 IU/dL
	Factor 12	70-150 IU/dL

Critical phone limits

Low Factor assay results are phoned if required after discussing with the Consultant Haematologist

Turn-around Time

2-3 weeks
Can be done urgently in exceptional circumstances.

Frequency of Testing

Weekdays on request. During out-of-hours, please telephone the Haematology lab for advice.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Predominantly used for assessing wear of artificial hip joints.
Referral Laboratory	The SAS Laboratories Clinical Biochemistry Charing Cross Hospital Fulham Palace Road Hammersmith London W6 8RF
Specimen Tube Required	EDTA 
Sample Type	Whole Blood
Minimum Volume	0.5 mL
Special Collection Requirements	None
Additional Information	Whole Blood preferred, Serum accepted
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post.
Turnaround Time	2 weeks - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Batch testing

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Coeliac disease, dermatitis herpetiformis, Chronic diarrhoea, Iron/folate deficiency, Reduced bone density CS requests will be tested for IgA anti-tissue transglutaminase antibodies (tTG). If positive a follow-up test of IgA Endomysial antibodies (ab) will be performed as a confirmatory test. In patients with coeliac disease and total IgA deficiency, only IgG ab is seen. Where IgA deficiency is detected, IgG Endomysial ab will be requested by the laboratory.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	Please note that coeliac screening assays are sensitive to a gluten-free diet – i.e. Results are often negative in those excluding gluten from the diet.
Turnaround time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Frequency of testing	Daily (Weekdays)

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **CS**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Packaging	Pack samples in racks. Place packed samples in Transport bags

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

C3 and C4 should be requested in patients with renal disease, joint disease and multi-system disorders with evidence of vasculitis, as low levels would imply an immunological basis for the symptoms. Levels are often low in SLE particularly with renal involvement; low levels are also common in nephritis. Complement components are acute phase proteins and may be normal, despite complement consumption, in some inflammatory and infective disorders.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Polyethylene glycol enhanced PEG immunoturbidimetric

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

n/a

Reference Ranges

C3 Male

Age	Reference Range
0-5 Months	0.58-1.08 g/L
5-8 Months	0.67-1.24 g/L
8 months- 12 Months	0.74-1.38 g/L
1Yr-11Yr	0.80-1.5 g/L
11-19Yrs	0.85-1.5 g/L
19-29 Yrs	0.85-1.60 g/L
29 -39 Yrs	0.82-1.60 g/L
39 yrs +	0.90-1.70g/L

C3 Female

Age	Reference Range
0-2 Months	0.58-1.08 g/L
2-5 Months	0.67-1.24 g/L
5 - 8 Months	0.74-1.38 g/L
8 -12 Months	0.74-1.44 g/L
1-11Yrs	0.80-1.5 g/L
11-19 Yrs	0.85-1.60 g/L
19 -29 Yrs	0.82-1.60 g/L
29-39 yrs	0.84-1.60g/L
39 years +	0.90-1.70 g/L

C4 = 0.12 - 0.36 g/L

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

CONJUGATED BILIRUBIN / DIRECT BILIRUBIN

Indication

Used in the differential diagnosis of jaundice. Raised in obstructive jaundice (cholestasis)

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Vanadate Oxidation

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

0-5.1 umol/L

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Patients on TPN, Wilson disease, Menke's syndrome (very rare). Unexplained neutropenia/ anaemia.
Referral Laboratory	Specialist Laboratory Medicine Trace Metals Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Plain Tube 
Sample Type	Serum
Minimum Volume	1mL
Special Collection Requirements	None
Additional Information	A trace metals tube can be provided if a repeat is suggested by Leeds.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	7 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekdays

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Keratitis

Tube / Minimum Volume

Corneal scrape kit

Sample Collection

By trained member of staff (Ophthalmologist)

Transport

Ensure the laboratory is aware that the specimen is coming to ensure timely processing, particularly of the Gram stain.

Clinical Details Required

Contact lens wearer/duration of symptoms, history of trauma.

Method

Gram stain on tissue on glass slide. Culture of broths/agar plates with identification of any organisms cultured. Requests for PCR will be forwarded to Leeds Teaching Hospitals Virology.

Interpretation

All culture results require clinical correlation. Discuss with microbiology if required. Sensitivities reported are based on systemic antibiotic use and may not reflect clinical response of topically applied antimicrobials.

Known Interfering Factors

Delay in specimen processing. Sample size. Previous antibiotic exposure.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Turn-around Time

Same day for Gram stain provided laboratory informed of sample coming.

Culture - enrichment broth is incubated for 5 days after receipt. A negative report can be issued at this point. Any positive culture may take longer depending on ID/sensitivity testing required.

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Used in the diagnosis of Cushing's syndrome. A 24-hour urine cortisol can be useful in diagnosing Cushing's, when an elevated 9 am serum cortisol has already been determined.

Dexamethasone suppression (overnight) test can also be used in the diagnosis of Cushing's syndrome.

Single 9 am serum cortisol is not recommended for the diagnosis of adrenal insufficiency (Addison's disease), Synacthen test for adrenal insufficiency is recommended.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Cortisol shows a diurnal rhythm with higher levels in the morning than at night.

Cushing's Disease: To investigate this blood should be collected at 09:00 (morning) following dexamethasone at 10pm the previous night.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Competitive Immunoassay

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

Reference Ranges

09:00 (morning) serum cortisol: 184 – 623 nmol/L
00:00 (midnight) serum cortisol: <220nmol/L

Turn-around Time

Urgent Samples – 8 Hours

Routine Inpatients – 8 Hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	The assay is intended as an aid in the diagnosis of CoVID-19 and to support the study of the immune status of infected patients by providing an indication of the presence of neutralizing IgG antibodies against SARS-CoV-2.
Tube / Minimum Volume	5ml Serum Gel
Sample Collection	As per CHFT Venepuncture policy
Transport	Transport to the laboratory as soon as possible
Clinical Details Required	
Method	LIAISON® SARS-CoV-2 TrimericS IgG assay is a new generation of chemiluminescence immunoassay (CLIA), for the quantitative determination of anti-trimeric spike protein specific IgG antibodies to SARS-CoV-2 in human serum or plasma samples.
Interpretation	Negative - A negative result may indicate the absence or a very low level of IgG antibodies to the pathogen. The test could score negative in infected patients during the incubation period and in the early stages of infection. Positive - A positive result indicates the presence of IgG antibodies to SARS-CoV-2 and generally indicates exposure to SARS-CoV-2.
Known Interfering Factors	Not stated
Ref. Range (Male)	N/A
Ref. Range (Female)	N/A
Ref. Range (Paed)	N/A

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Turn-around Time	
Frequency of Testing	Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Detection of SARS-COV-2 by PCR. Testing on admission and at stated intervals whilst an inpatient as per trust policy. Testing before elective procedures.
Sample Type/Tubes and Minimum Volumes	Nose and/or throat swab or alternatively a nasopharyngeal swab in viral transport medium (VTM)
Transport	Specimens should be double bagged and sent to the laboratory in purple specimen bags as soon as possible.
Limitations	Reliable results are dependent on proper specimen collection, handling, and storage. Erroneous results could occur from improper specimen collection, handling, storage, technical error, or specimen tube mix-up. In addition, false negative results could occur because the number of viral particles in the sample is below the limit of detection of the SARS- CoV-2 Assay. Deletions or mutations in the regions targeted by the SARS-CoV-2 Assay may affect detection and could lead to an erroneous result. A positive result does not necessarily indicate the presence of viable SARS-CoV-2. However, a positive result for both targets is indicative of the presence of SARS-CoV-2 RNA.
Method	Detection of SARS-CoV-2 RNA is performed using PCR. Testing may be performed on either NeuMoDx/Panther/BD Max or Samba analysers.
Interpretation	COVID 19 Positive by PCR - SARS-CoV-2 RNA detected COVID 19 Negative by PCR - SARS-CoV-2 RNA NOT detected COVID 19 INCONCLUSIVE by PCR – Result is inconclusive and a repeat swab should be collected and sent for testing as soon as possible.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Expected Turn-around Time	All samples received for SARS-COV-2 testing are treated as urgent and processed within 24 hrs or referred to Leeds.
Frequency of Testing	Testing is performed Monday - Sunday between the hours of 8am-8pm.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Detection of rectal carriage of carbapenemase producing enterobacteriaceae (CPE) in patients who are screened to be at risk of carrying them on admission to hospital.

At risk patients are those that have been in hospital/dialysed abroad in the past 12 months, or who have been in a London or Manchester hospital in the past 12 months. Patients who are household contacts of known carriers of CPE should also be screened.

3 samples must be sent 48 hours apart.

Tube / Minimum Volume

Swab in Amies Transport Medium

Faeces sample can also be used, although this may delay results as 3 samples are required in total, taken 48 hours apart.

node://28963

Sample Collection

The swab should be inserted 3-4cm past the anal sphincter and rotated a few times. The swab must be visibly soiled to ensure there is a sufficient sample for the laboratory to process.

Transport

Transport to the laboratory as soon as possible.

Clinical Details Required

Travel history

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Method

Culture on selective media (agar plates). Enterobacteriaceae that are found to be resistant to ertapenem undergo further testing using immunochromatograph test O.K.N.V and supplementary testss (Modified Hodge Test and Rosco disk testing).

Interpretation

Provisional results will be communicated to users, as will confirmatory results when available. Infection Prevention & Control Advice will be given.

It is important that when a patient is known to be colonised with CPE, that all antimicrobial prescriptions are discussed with microbiology.

Known Interfering Factors

Transit time. Quality of specimen taken

Turn-around Time

Negative results - 24 hours

Positive results – presumptive result 24-48hrs and confirmed result 48 hrs -72 hrs

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CREATININE KINASE CK

Indication

As a cardiac marker it has been largely superseded by Troponin I. Elevated in diseases of muscle. Very high levels in rhabdomyolysis and malignant hyperpyrexia.

Used in the diagnosis of Duchenne muscular dystrophy.

Used to assess significance of muscle pain in treatment of hyperlipidaemia with statins. Levels in excess of 10x the upper limit of normal plus symptoms of myopathy may require withdrawal of statin.

Elevation can be seen in athletes taking weight gain products.

Also known as CK, CPK, Creatine Phosphokinase

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

IFCC Reference Method

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

No significant interferences have been observed against Icteric or Lipemic interferents. A value for CK cannot be reported on haemolysed specimens above 1.5g/L

Reference Ranges

Males	32 - 294 IU/L
Females	33 - 211 IU/L

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

CREATININE

Indication

Used in the assessment of renal function**.**

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Jaffe, alkaline picrate, kinetic with blank rate correction

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

Age Group	Male umol/L	Female umol/L
0-<14 days	27-81	27-81
14d-1yr	14-34	14-34
1-<3yr	15-31	15-31
3-<5yr	23-37	23-37
5-<7yr	25-42	25-42
7-<9yr	30-48	30-48
9-<11yr	28-57	28-57
11 yr	36-64	36-64
12 yr	36-67	36-67
13yr	38-76	38-74
14yr	40-83	43-75
15 yr	47-98	44-79
16yr	54-99	48-81
adult	48-128	48-128

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CREATININE SYNTHESIS DISORDER / GAA

Indication	Presentation of the three creatine synthesis disorders is neurological with psychomotor retardation, developmental delay, speech delay and epilepsy the most common features.
Referral Laboratory	Specialist Laboratory Medicine Biochemical Genetics Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Plain Universal and Lithium Heparin  
Sample Type	Urine and Plasma
Minimum Volume	0.1mL
Special Collection Requirements	Samples must be sent to laboratory as soon as possible (urine/plasma must be frozen with 2 hours of collection). Sample must have date and time written on the sample.
Additional Information	None
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport frozen on dry ice via CHFT Hospital Transport
Turnaround Time	30 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Monthly

The revision/review history of this page is held within Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CRYOGLOBULINS (CRYO)

Indication

Cryoglobulins are abnormal immunoglobulins that precipitate at temperatures below 37 degrees Celsius and re-dissolve on warming. Symptoms may include intolerance of cold weather conditions, joint pain, muscle pain, skin discoloration, purpura, poor peripheral circulation, glomerulonephritis, breathing problems and fatigue. In severe cases tissue necrosis or even gangrene may occur. High levels may be associated with malignant lymphoproliferative diseases, rheumatoid arthritis, Reynaud's Syndrome, Hepatitis C Virus, Systemic Lupus Erythematosus (SLE) and Sjogrens Syndrome. However, essential cryoglobulinaemia may occur without an associated disease.

Tube/Minimum Volume

Pre-warmed and temperature controlled Plain tube containing 5ml blood and EDTA tube containing 3mL blood

Sample Collection

Please contact the Lab 24 hours before test for information on sample collection – special tube conditions required.

Patient should attend/contact Path OPD as special collection conditions apply

Transport

Transport to the lab in temperature controlled flask as soon as possible after collection.

Clinical Details Required

Please give relevant details on the request form.

Method

Cryoprecipitate identification, purification and electrophoresis.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

No significant interferences.

Reference Ranges

N/A

Turn-around Time

Urgent Samples – n/a contact laboratory

Routine Inpatients – 7 Days

OP/GP – 7 Days

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CRYPTOCOCCAL ANTIGEN

Indication

Suspected cryptococcosis

Sample Type/Tubes and Minimum Volumes

Serum gel

node://28903

Can also be performed on CSF

Clinical Details Required

Nature of immunocompromise

Timing of Sample Collection

Sample can be taken at any time

Interpretation

Positive results are highly likely to indicate cryptococococcosis.

Known Interfering Factors

Not stated

Reference Laboratory Address

Leeds Bradford Microbiology
The Old Medical School
Leeds General Infirmary
Great George Street
Leeds LS1 3EX

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Reference Lab Website

http://www.pathology.leedsth.nhs.uk/Pathology/

Contact telephone number

tel:0113 3923499

Expected Turn-around Time

2 days from receipt in the reference library

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CSF (MICROBIOLOGY)

Indication

Suspected CNS infection - meningitis / encephalitis

Investigation for prion diseases (CJD, nvCJD)

Tube / Minimum Volume

3 sterile universal containers, labelled in order of collection (1,2,3). 1 glucose bottle. A 4th universal container is often useful to store/send for additional testing, e.g. meningococcal/pneumococcal PCR.

1&3 should be sent to Microbiology for culture / sensitivity / PCR (if required). Minimum 10 drops per bottle. Preferably, 18-20 drops. If suspect TB meninigitis, considerably more CSF is required (5-10ml).

Sample 2 sent to biochemistry for protein.

Concurrent serum glucose must be sent to allow interpretation of CSF glucose.

node://28903

node://29006

Sample Collection

ANTT procedure as per CHFT policy, using LP kit.

Transport

Samples must be transported to the laboratory as soon as possible.

Inform the lab that CSF is being sent and requires urgent processing.

Clinical Details Required

Suspected diagnosis. Antibiotics. Presence of VP / VA shunt.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Method

Microscopy - white cell and red cell count. Gram stain for bacteria.

Culture and identification of any growth on agar plates.

Viral PCR - sent to Leeds Virology for Herpes Simplex 1&2, Varicella Zoster, Enterovirus, Echovirus and Parechovirus multiplex PCR.

Interpretation

WCC: >5 is considered abnormal in an adult. WCC must be interpreted in conjunction with the red cell count. If it is a 'bloody tap' then ensure this is a accounted for in the interpretation of the white cell count, i.e. allow 1 white cell for each 500 red cells.

A positive is culture is usually significant.Occasionally contaminants can be picked up from the skin at the time of specimen collection. Microbiology will advise on the likely significance.

Known Interfering Factors

Transport delays

Turn-around Time

CSF culture - 2-4 days.

CSF cell count and Gram stain should be available within 60-90 minutes of the sample arriving in the laboratory.

Frequency of Testing

Daily (in and out of hours)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CSF AMINO ACIDS (GLYCINE & SERINE)

Indication	Most commonly used by Paediatric Neurologists for investigation of seizures and other neurological problems e.g. CSF glycine for non-ketotic hyperglycinaemia (NKH) and CSF serine for serine deficiency disorders.
Referral Laboratory	Specialist Laboratory Medicine Biochemical Genetics Block 46 St James hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Plain Universal 
Sample Type	CSF
Minimum Volume	0.2mL
Special Collection Requirements	Clean tap, blood free CSF.
Additional Information	A paired plasma sample is required to calculate CSF/plasma glycine ratios. Blood contamination causes an increase in CSF glycine, invalidating the sample.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	10 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily (weekdays)

The current version of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Used in the investigation of possible meningitis. Commonly but not always decreased in bacterial meningitis, rarely decreased in viral form

Tube/Minimum Volume

Yellow Fluoride – Minimum1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Avoid bloodstaining of sample

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Hexokinase Principle

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

2.2 - 3.9 mmol/L

Turn-around Time

Urgent Samples – 4 hours

Routine Inpatients – 4 hours

OP/GP – n/a contact Laboratory

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

For query reduced flow of oxygen to the brain. A cerebrospinal fluid (CSF) lactate test may also be used with a blood lactate test to help distinguish between viral and bacterial meningitis, with higher levels generally associated with bacterial infection.

Tube/Minimum Volume

Yellow Fluoride (CSF) – Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

CSF must not be contaminated with blood. A traumatic tap may invalidate results.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Lactate Oxidase, Colorimetric

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

CSF must not be contaminated with blood. A traumatic tap may invalidate results.

Reference Ranges

0- 2.8 mmol/L

Turn-around Time

Urgent Samples – 4 hours

Routine Inpatients – 4 hours

OP/GP – n/a Contact Laboratory

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Used as an indicator of prognosis in hypoxic brain injury: higher levels correlate to a worse prognosis. CSF LDH is also elevated in 90% of bacterial meningitis cases and in 10% of viral meningitis cases.

Tube/Minimum Volume

White top 25mL Universal (CSF) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

CSF must not be contaminated with blood. A traumatic tap may invalidate results.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Lactate/Nicotinamide Adenine Dinucleotide (NAD)

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

CSF must not be contaminated with blood. A traumatic tap may invalidate results.

Reference Ranges

n/a

Turn-around Time

Urgent Samples – 4 hours

Routine Inpatients – 4 hours

OP/GP – n/a Contact Laboratory

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Used in the investigation of possible meningitis. Commonly but not always increased in bacterial meningitis, rarely increased in viral form.

Tube/Minimum Volume

White top 25mL Universal (CSF) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Affected by haemolysis, avoid blood staining.

Transport

Transport to the lab as soon as possible. Do not transport in the pneumatic tube system.

Clinical Details Required

Please give relevant details on the request form.

Method

Dye Binding

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

Assay affected by Haemolysis/bloodstaining

Reference Ranges

0.15 – 0.45 g/L

Turn-around Time

Urgent Samples – 4 hours

Routine Inpatients – 4 hours

OP/GP – N/A

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

The presence of a significant amount of bilirubin in the CSF of a non-jaundiced patient with appropriate symptoms suggests sub-arachnoid haemorrhage.

This test should be performed on patients who have had prior CT scanning, 98% of patients with SAH will test positive by CT, those few patients who are CT negative with a high degree of clinical suspicion of SAH may benefit from analysis of CSF Bilirubin.

Tube/Minimum Volume

White top 25mL Universal (CSF) - Minimum 1mL

A gel serum sample should be taken at the same time for serum bilirubin and total protein analysis (required for interpretation).

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Sample MUST be protected from light.
Do not send samples in the POD system – samples must be hand-delivered to the laboratory.

The CSF samples should be collected at least 12 hours after the onset of symptoms and MUST be protected from light.

Transport

Transport to the lab as soon as possible. Do not send samples in the POD system – samples must be hand-delivered to the laboratory.

Clinical Details Required

Please give relevant details on the request form.

Method

Spectrophotometry

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

Haemolysis and Jaundice may interfere with the interpretation of the significance of bilirubin in CSF.

Reference Ranges

Reporting is in the form of interpretative comments based on the outcome of the spectrophotometric analysis

Turn-around Time

Urgent Samples – 4 hours

Routine Inpatients – 4 hours

OP/GP – N/A

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

CYCLOSERINE

Indication	Requesters have found these assays to be of value in all patients receiving Cycloserine as part of anti-TB therapy.
Sample Type/Tubes and Minimum Volumes	*5ml Serum – minimum 2mL* Samples should be kept at 4°c if there is a delay in sending. We recommend a pre dose sample and a post dose sample, taken 3-4 hours after oral administration.
Known Interfering Factors	Not stated.
Reference Range	Pre dose 10-20 mg/L Post dose (3-4h) 20-35 mg/L Levels to be kept below 35 mg/L.
Reference Laboratory Address	Antimicrobial Reference Laboratory Level 2, Phase 1, Pathology Sciences Building Southmead Hospital Westbury-on-Trym Bristol BS10 5NB
Expected Turn-around Time	3-5 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

CYCLOSPORIN

Indication	Therapeutic drug monitoring
Referral Laboratory	Specialist Laboratory Medicine Transplant Immunology Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	EDTA 
Sample Type	Whole blood
Minimum Volume	1mL
Special Collection Requirements	Samples should be collected prior to morning dose (trough level).
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	2 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekdays

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

D DIMER

Indication

Suspected PE, DVT and DIC.
Monitoring the treatment or progression of the above.

Tube/Minimum Volume

Green Citrate (Sodium) - Minimum 3ml

Sample Collection

The tube MUST be filled exactly to the line.

Transport

Transport to the lab as soon as possible. Specimens may be delivered by the following routes:
Pneumatic tube system, phlebotomists, Trust personnel, Trust transport drivers, external medical personnel, White Knights and private hire personnel.

Clinical Details Required

Please give relevant details on the request form.

Method

Sysmex CS 2500 Analyser.

Interpretation

Results up to 1000 ng/ml are reported as a numerical result. Results >1000 ng/ml are reported as >1000 except in cases of DIC where an actual value is required.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

Grossly haemolysed samples, lipaemic samples and samples with clots will be rejected.

The following can affect the result: therapeutic dose of anticoagulants >24 hours, fibrinolytic therapy in last 7 days:

Trauma/surgery in last 4 weeks, aortic aneurysm, disseminated malignancies, sepsis, infections, pneumonia, severe skin infections, liver cirrhosis and pregnancy.

Reference Ranges

<500 ng/ml

Critical phone limits

GP and OPD results >500ng/ml are phoned.

Turn-around Time

8 hours
Urgent requests - 1 hour

Frequency of Testing

24-hour service

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

DEHYDROEPLANDROSTEONE – DHEA / DHAS

Indication	Used to investigate delayed or precocious puberty and androgen secreting tumours.
Referral Laboratory	Specialist Laboratory Medicine Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	1mL
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	14 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Used for monitoring therapy of Digoxin. Analysis is also recommended for potassium, calcium and creatinine to fully assess possible toxic effects of digoxin.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Should be collected at least 6 hours post dose.

Samples should not be collected for at least one week post change of dose to allow blood levels to reach a steady state.

Samples should be taken before antibody administration as levels are unreliable following Fab.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Competitive immunoassay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

Reference Ranges

1.3 – 2.6 nmol/L

Severe toxicity at levels >5.2 nmol/L

Turn-around Time

Urgent Samples – 2 hours

Routine Inpatients – 2 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

EAR SWAB

Indication

Refractory otitis media, otitis externa

Tube / Minimum Volume

Swab in Amies transport medium.

Sample Collection

Gently ensure inflamed area/purulent discharge makes contact with the swab.

Transport

Send to the laboratory as soon as possible.

Clinical Details Required

Antibiotic therapy. Clinical diagnosis.

Method

Culture on agar plates

Interpretation

Significant growth will be reported. Any organism may be colonising - only treat if clinical evidence of infection.

Known Interfering Factors

Transport time, swab coming into contact with infected area/purulent discharge.

Turn-around Time

48-72 hours

Frequency of Testing

Monday - Saturday

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

EBV SEROLOGY

Indication

Suspected EBV infection (acute)

Tube / Minimum Volume

Serum Gel 5ml

node://28903

Sample Collection

As per CHFT venepuncture policy

Transport

Transport to the laboratory as soon as possible.

Clinical Details Required

Date of onset of symptoms. Travel history if relevant.

Method

Screening serology in CHFT. Positive samples suggestive of acute EBV infection will be sent to Leeds Virology for confirmation / further testing.

Interpretation

Interpretative comments will be provided.

Presence of IgM and absence of EBNA is suggestive of acute infection.

Presence of EBNA excludes acute infection.

Known Interfering Factors

Not stated.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Turn-around Time

Screening result 48-72 hours. Confirmation 5-7 days.

Frequency of Testing

Monday - Friday

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

EGFR (ESTIMATED GLOMERULAR FILTRATION RATE)

Indication

Used as an estimate of kidney function. Kidney disease is indicated if eGFR < 90 ml/min/1.73m2 and is categorised into 5 stages.

Results are specific to each laboratory based on the creatinine value and adjustments according to the method and equipment used and is calculated using the 4-variable MDRD formula. Further information is available at renal.org

This is not an accurate indicator in acute kidney injury.

Tube/Minimum Volume

N/A – Calculated result based in Creatinine Result and other data held by Pathology.
Brown Gel (Serum) - Minimum 1mL required for creatinine measurement.

Sample Collection

eGFR should not be used as a substitute for GFR to determine doses of nephrotoxic drugs or chemotherapy.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

4-variable MDRD formula

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

Reference Ranges

> 90 ml/min/1.73m2

Turn-around Time

Urgent Samples – n/a

Routine Inpatients – n/a

OP/GP – n/a

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Used as a measure for acid base balance, fluid balance and renal function.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab within 7 hours of collection

Clinical Details Required

Please give relevant details on the request form.

Method

Ion selective electrode- Indirect ISE's

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

Potassium levels cannot be reported for samples which are haemolysed (0.5g/L haemoglobin). Potassium can also be affected by ambient

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

temperature causing falsely low and high results. Electrolytes cannot be reported on samples with high triglycerides (>10mmol/L)

Reference Ranges

Chloride: 95-108 mmol/L

Sodium: 133 – 146 mmol/L

Potassium: 3.5 – 5.3 mmol/L

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ENCEPHALITIS SCREEN

Indication	Autoimmune Encephalitis. Tests within profile include AMPA1/AMPA2, CASPR2, LGI1, GABAB1/GABAB2, NMDA.
Referral Laboratory	Neuroimmunology The Medical School University of Birmingham Edgbaston Birmingham B15 2TT
Specimen Tube Required	Gel Tube  (Universal for CSF)
Sample Type/Minimum volume	Serum - 5ml or CSF-1ml
Special Collection Requirements	Plasma also acceptable.
Additional Information	None
Turnaround time	14 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Weekly (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **ESC (serum), CSFENC (CSF)**
Preparation	Centrifuge Primary gel sample. Do not centrifuge CSF sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	Sample to be sent with Pathology request form.
Packaging	Wrap each individual sample in absorbent paper and pack samples and request forms in red sample bags. Place packed samples in Transport boxes and seal ready for posting.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ENTEROCYTE ANTIBODIES AND GOBLET CELL ANTIBODIES

Indication	Autoimmune enteropathies, mainly found in children can be associated with anti-enterocyte antibodies and results in intractable diarrhoea associated with small bowel villous atrophy. It is a multisystem disorder and often responds to immunosuppression.
Referral Laboratory	Protein Reference Unit Immunology PO Box 894 Sheffield S5 7YT
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	None
Turnaround time	5 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	As required (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **ENTO**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	Sample to be sent with Pathology request form.
Packaging	Wrap each individual sample in absorbent paper and pack samples and request forms in red sample bags. Place packed samples in Transport boxes and seal ready for posting

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Enteroviruses include coxsackieviruses, echoviruses and polioviruses. These cause a wide range of diseases including meningitis, rash illness such as hand foot and mouth diseases, myocarditis, neonatal sepsis and Bornholm's disease.
Sample Type/Tubes and Minimum Volumes	Samples should be sent from the suspected site of infection:- Viral Throat swab – Pharyngitis Non vesicular rash CSF – meningoencephalitis Pericardial fluid – Myocarditis Tissue- internal organ infection Faeces – Meningoencephalitis, Myocarditis, Rash, myalgic encephalomyelitis Eye Swab – conjunctivitis Mouth swab – mouth ulcer Skin or vesicle swab – rash EDTA sample – PUO <3 month old If delays occur refrigerate at 2-8 degrees C.
Known Interfering Factors	Not stated.
Reference Laboratory Address	LGI Microbiology Department.
Expected Turn-around Time	5-7 days
Unique Identifier and Version Number	IP 320 035 Version 1

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ERYTHROCYTE SEDIMENTATION RATE

Indication

Laboratory test for the investigation and monitoring of non-specific changes in plasma protein composition following tissue damage, inflammation and chronic pathological processes.

Tube/Minimum Volume

Whole Blood
EDTA(red top bottle) 2.7ml filled to line (low volumes will be rejected as insufficient).

Sample Collection

Clean venepuncture. Mix gently after collection.

Transport

Routine transport to lab. Specimens may be delivered by the following routes: Pneumatic tube system, phlebotomists, Trust personnel, Trust transport drivers, external medical personnel, White Knights and private hire personnel.

Clinical Details Required

Relevant clinical details relating to acute inflammation or chronic inflammatory disease.

Method

Automated ESR analyser.

Interpretation

The ESR test is a non-specific test and should not be viewed in isolation, but must be interpreted with other clinical and laboratory findings.

Known Interfering Factors

Red cell morphology, anaemia and polycythaemia.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

	Male	Female
Age (yrs)	**Reference Range (mm/hr)**	**Reference Range (mm/hr)**
≤17	1 - 10	1 - 10
18- 50	1 - 10	1 - 12
51 - 60	1 - 12	1 - 19
>60	1 - 14	1 - 20

Age and sex related ranges are reported with each test report.

Critical Phone Limits

ESR >50 phoned if clinical details of temporal arteritis, giant cell arteritis or visual loss.

Turn-around Time

Routine samples-same day

Urgent within one hour.

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ERYTHROPOIETIN LEVELS

Indication	Helps to differentiate between polycythaemia vera and secondary polycythaemia or to help differentiate between different types of anaemia.
Referral Laboratory	Haematology Laboratory Royal Oldham Hospital Rochdale Road Oldham OL12 2JH
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	7.5mL
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Store at -20◦C prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport.
Turnaround Time	21 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Batch testing

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ETHAMBUTOL LEVELS

Indication	Therapeutic drug monitoring/toxicity.
Sample Type/Tubes and Minimum Volumes	EDTA plasma minimum 0.5ml 2 h post dose. If suspect delayed absorption collect samples 2 h and 6h post dose. If concern over toxicity collect pre-dose. Please state sample timing on request.
Known Interfering Factors	Not stated.
Reference Range	2-6 mg/L For peak drug levels for a daily dose regimen. Pre-dose ethambutol concentration should be less than 1 mg/L.
Reference Laboratory Address	Cardiff Toxicology Laboratories The Routledge Academic Centre (4th Floor) University Hospital Llandough Penarth CF64 2XX
Expected Turn-around Time	7-10 days
Unique Identifier and Version Number	IP 320 036 Version 1

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ETHYLENE GLYCOL (ANTI FREEZE POISONING)

Indication	For the assessment of patients who may have been poisoned with ethylene glycol or who are being treated.
Referral Laboratory	Sandwell & West Birmingham Hospitals NHS Trust Toxicology Laboratory City Hospital Dudley Road Birmingham B18 7QH
Specimen Tube Required	Fluoride Oxalate 
Sample Type	Plasma
Minimum Volume	1ml
Special Collection Requirements	None
Additional Information	Do not send GEL tubes as they interfere with analysis.
Storage in Laboratory	Refrigerate prior to sending (if required)
Transportation to Referral Laboratory	Transport immediately at ambient temperature via Courier
Turnaround Time	2 hours - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	As and when required

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

EYE SWAB

Indication

Persistent conjunctivitis

Tube / Minimum Volume

Swab in Amies Transport Media

node://28963

Sample Collection

Prior to antibiotic therapy where possible.

Transport

Transport to Laboratory within 24 hours.

Clinical Details Required

Eye swabbed, clinical diagnosis, antibiotic therapy.

Method

Culture on agar plates

Interpretation

Interpret in conjunction with clinical picture. Discuss with microbiology as required.

Known Interfering Factors

Transport delay. Prior antibiotic therapy.

Turn-around Time

2-3 days

Frequency of Testing Monday - Saturday

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

FAECAL ALPHA 1 ANTITRYPSIN (FAECAL A1A)

Indication	Investigation of suspected protein losing enteropathy
Referral Laboratory	Protein Reference Unit South West London Pathology St George's Hospital Blackshaw Road Tooting London SW17 0QT
Specimen Tube Required	Universal Faeces Container 
Sample Type	Faeces/Stool sample
Minimum Volume	1g stool
Special Collection Requirements	None
Additional Information	Freeze immediately
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport Dry Ice via courier.
Turnaround Time	7 days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

FAECAL CALPROTECTIN

Indication	The faecal Calprotectin assay can be used as an aid in the diagnosis of inflammatory bowel diseases (IBD), specifically Crohn's disease and ulcerative colitis, and as an aid in differentiation of IBD from irritable bowel syndrome (IBS). Test results are to be used in conjunction with information obtained from the patients' clinical evaluation and other diagnostic procedures.
Tube / Minimum Volume	N/A
Sample Collection	Collect stool specimens into a clean airtight container with no preservative.
Transport	Transport to lab within 6 hours of sample collection. If delay anticipated can be placed in refrigerator 2-8C for maximum 3 days.
Clinical Details Required	As appropriate
Method	
Interpretation	<50ug – IBD unlikely 50 – 150 ug – indeterminate, suggest repeat >150ug – consistent with IBD Re-evaluation of borderline faecal calprotectin levels after 4-6 weeks is recommended to determine the inflammatory status. This decision should be made by the clinician in conjunction with the patient's clinical symptoms, medical history, and other clinical and laboratory findings
Known Interfering Factors	Samples that are too solid, too liquid or heavily blood stained cannot be tested. Patients who are taking NSAIDs may have elevations in their faecal calprotectin levels (8,9)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	Since Calprotectin is present in the cytoplasm of neutrophils there is the potential for elevated Calprotectin test results when measuring bloody stool samples. False negative results could occur in patients who have granulocytopenia due to bone marrow depression. Patients with IBD fluctuate between active (inflammatory) and inactive stages of the disease. These stages must be considered when interpreting results. Results may not be clinically applicable to children less than 2 years of age who have mildly increased faecal calprotectin levels. Other intestinal diseases, including many gastrointestinal infections and colorectal cancer, can result in elevated levels of calprotectin. Therefore, a diagnosis of active IBD should be made only in the context of other diagnostic testing and the total clinical status of the patient. Faecal calprotectin is an indicator of neutrophilic presence in the stool and is not specific for IBD
Ref. Range (Male)	N/A
Ref. Range (Female)	N/A
Ref. Range (Paed)	Not suitable for children <2years
Turn-around Time	5-7 days
Frequency of Testing	Daily Monday to Friday

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

FAECAL ELASTASE (FELAS)

Indication	Non-invasive assessment of pancreatic exocrine insufficiency. Pancreatic elastase is also gaining an increasing role in the assessment of cystic fibrosis patients.
Referral Laboratory	Sandwell & West Birmingham Hospitals NHS Trust Department Clinical Chemistry City Hospital Dudley Road Birmingham B18 7QH
Specimen Tube Required	Blue capped stool container 
Sample Type	A formed random stool sample
Minimum Volume	No minimum volume stated.
Special Collection Requirements	None
Additional Information	Low elastase results on very wet samples may require a repeat sample on a formed specimen.
Storage in Laboratory	Refrigerate prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post.
Turnaround Time	3 days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

FAECES CULTURE

Indication

- Suspected bacterial gastroenteritis
- Haemolytic uraemic syndrome
- Travel associated diarrhoea
- Carriage status of food handlers/care workers with previously isolated Salmonella, Shigella or E. coli O157.

NB all diarrhoeal specimens (Bristol Stool 5-7) will be processed for Clostridium difficile unless recently tested.

Specimen Container

Blue top with scoop

node://29006

Sample Collection

Sample collected from faeces that has been passed into a clean, dry, disposable bedpan or similar using the scoop attached to the lid of the collection pot. 1-2g of stool is sufficient (1 full scoop full). If stool is liquid, 1-2ml is sufficient. Care must be taken to ensure the container lid is tightly sealed.

Transport

Transport to the laboratory as soon as possible (some bacterial pathogens will not survive long after passed due to pH changes in stool).

Clinical Details Required

- Nature / duration of symptoms
- Recent travel, particularly if suspect enteric fever (typhoid)
- If known HIV positive / neutropenia
- If appendicitis, severe abdominal pain, reactive arthritis
- If known food handler
- If part of a suspected outbreak

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Method

Bacterial pathogens routinely cultured for:

- Campylobacter species
- Salmonella species (including S. typhi and S. paratyphi)
- Shigella species
- E. coli O157

Other bacterial pathogens cultured for if relevant clinical details:

- Vibrio species (including V. cholera)
- Yersinia species

Testing for Cryptosporidium will be carried out on all diarrhoeal specimens that have been sent for culture. Other parasites will only be routinely looked for when the clinical details indicate an appropriate travel history.

Interpretation

Only significant organisms will be reported. A negative culture does not exclude the presence of pathogenic bacteria – if symptoms persist then repeat sampling is recommended.

Turn-around Time

4 days

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Suspected parasitic infection of the gastrointestinal tract.

Specimen Container

BLUE CAP with collecting spoon.

node://29006

Sample Collection

Three samples taken within a period of 10 days should be submitted. Samples should be clearly labelled with sample number, time and date.

Scoop a pea sized piece fresh stool into the collection pot using the spoon in the lid of the container. Ensure correctly sealed before sending to laboratory.

Transport

Sample should be transported to the laboratory as soon as possible.

Clinical Details Required

Travel history, animal contact, symptoms, duration of symptoms, contact history. Immune status of patient (including HIV status if positive), eosinophilia (if present).

Method

Faeces is mixed with formalin, centrifuged and concentrated prior to examination under the microscope for the presence of parasites. All diarrhoeal specimens are stained with a fluorescent stain to look for the presence of cryptosporidium spp.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

If present, parasites will be reported by name. A negative result does not exclude parasitic infection, and sample should be repeated if parasitic infection suspected.

Turn-around Time

4 days

Frequency of Testing

Weekdays only

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

FERRITIN

Indication

Ferritin may be low in iron deficiency anaemia. It is however, an acute phase protein and may therefore be increased in patients with inflammation, infection or malignancy.

It is raised in haemochromatosis and liver disease.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculated total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Two site sandwich immunoassay.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

Male 22-322 ug/L

Female 10 – 291 ug/L

Turn-around Time

Urgent Samples – 8 hours

Routine Inpatients – 8 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

FLUID ANALYSIS / FLUID SCREEN

Fluids (Amylase, Creatinine, Electrolytes, glucose, LDH, protein, pH) performed on pleural fluid, ascities, and drain fluid.

Indication

The composition of fluid depends on the site and are either transudates (ultrafiltrate of plasma) or exudates (increased capillary permeability) and are identified by the protein concentration (transudate low protein concentration; exudates high protein concentration).

Tube/Minimum Volume

25mL White Top (Fluid) – Minimum 5mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Samples need to be analysed within 24 hours of collection for Fluid pH, samples older than 24 hours will be rejected.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

See individual serum tests for specific methods.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

N/A

Reference Ranges

Analyte concentrations should be interpreted within the clinical context as no reference ranges are established. For unknown fluids, comparison with urine or serum is recommended, and can only be analysed if supernatant is clear and non-viscous.

Turn-around Time

Urgent Samples – 8 Hours

Routine Inpatients – 8 Hours

OP/GP – 8 Hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Used to diagnose the cause of macrocytic anaemia.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Competitive Immunoassay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

Folate levels are unable to be reported on samples which have a haemolysis level >1.5g/L.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

3.0-14.4ug/L

Turn-around Time

Urgent Samples – 8 hours

Routine Inpatients – 8 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Used to evaluate the metabolic status of patients with Endocrinopathies, to detection Phenchromocytoma and glucagon, thyrotropin and adrenocorticotropin secreting tumours, and monitoring control of diabetes mellitus.
Referral Laboratory	Department of Clinical Chemistry Sheffield Children's Hospital Western Bank Sheffield S10 2TH
Specimen Tube Required	Fluoride Tube 
Sample Type	Plasma
Minimum Volume	2ml
Special Collection Requirements	None
Additional Information	Haemolysed samples unsuitable for analysis
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	1 Week - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

FSH – FOLLICLE STIMULATING HORMONE

Indication

Abnormal FSH levels with corresponding increased or decreased levels of LH, estrogens, progesterone, and testosterone are associated with a number of pathological conditions.

Increased FSH levels are associated with menopause and primary ovarian hypofunction in females and primary hypogonadism in males. Decreased FSH levels are associated with primary ovarian hyperfunction in females and primary hypergonadism in males. Normal or decreased FSH levels are associated with polycystic ovary disease in females.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated are for guidance only, Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Two-site sandwich immunoassay using direct chemiluminometric technology.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

No significant interferences have been observed Lipaemic interferents. Results for FSH cannot be reported on haemolysed specimens that contain above 1.5g/L Hb, or on Icteric samples that contain 342umol/L Bilirubin

Reference Ranges

N/A

Turn-around Time

Urgent Samples – 48 hours

Routine Samples (Inpatient) – 48 hours

OP/GP Samples – 48 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Routine screening test for the investigation of haematological disorders and for monitoring treatments

Tube/Minimum Volume

Whole Blood
EDTA (red top bottle) 2.7ml
Paediatric sample bottle 1.3ml

Sample Collection

Clean venepuncture or capillary collection. Mix gently after collection.

Transport

Routine transport to lab. Specimens may be delivered by the following routes: Pneumatic tube system, phlebotomists, Trust personnel, Trust transport drivers, external medical personnel, White Knights and private hire personnel.

Clinical Details Required

Please give relevant clinical details.

Method

Automated haematology analyser.

Interpretation

Clinical interpretation of laboratory FBC results should be performed in conjunction with the relevant clinical presentation.

A peripheral blood film will be viewed microscopically if FBC parameters exceed laboratory defined limits or if the clinician specifically requests a film.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Gross abnormalities may be referred to a haematology clinician for further clinical review.

Known Interfering Factors

Platelet clumping, cryoprotein, fibrin(activated sample), giant platelets, cold agglutinins, red cell fragments, lipaemia, haemolysis, spherocytes, uraemia, degenerate white cells. Clotted EDTA samples are unsuitable for analysis.

Reference Ranges

Adult FBC Normal Reference Range Table			
TEST	**Male**	**Female**	**Units**
Hb	135-170	115-150	g/L
WBC	3.5-11.0	3.5-11.0	10^9/L
Platelets	140-400	140-400	10^9/L
PCV	0.400-0.510	0.360-0.460	Ratio
RBC	4.25-6.00	3.80-5.00	10^{12}/L
MCV	80-99	80-99	fl
MCH	27.5-32.5	27.5-32.5	pg
MCHC	310-350	310-350	g/L
Neutrophils	1.70-8.00	1.70-8.00	10^9/L
Lymphocytes	1.00-4.00	1.00-4.00	10^9/L
Monocytes	0.20-0.80	0.20-0.80	10^9/L
Eosinophils	0.04-0.40	0.04-0.40	10^9/L
Basophils	0.02-0.10	0.02-0.10	10^9/L
Reticulocytes	50-100	50-100	10^9/L

Paediatric/neonatal ranges may be different from above and are reported with each set of results.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Critical Phone Limits

Test	Low	High	Notes
Haemoglobin (g/L)	<80	>190 or PCV>0.550	Or fall of 4g/L in 24 hours
Neutrophils x 10^9/L	<0.5		
White cellcount x10^9/L		>50	New cases
Lymphocytes		>50	New cases
Platelets x 10^9/L	<30	>1000	New cases

Turn-around Time

Routine samples-same day.
Urgent within one hour.

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

FUNCTIONAL ANTIBODIES / VACCINE SPECIFIC ANTIBODY / TETANUS ANTIBODY

Indication	Measurement of specific antibody production (spontaneous and post immunisation) is useful in the assessment of patients with suspected immune deficiency.
Referral Laboratory	Clinical Immunology Old Medical School Leeds General Infirmary Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	5mL
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transpost.
Turnaround Time	14 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Fortnightly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Haemolysis when patient exposed to oxidant compounds for example anti-malarial drugs. Some cases of neonatal jaundice and anaemia. Occasional cases of anaemia.

This is a qualitative test only. Where the screen indicates a G6PD deficiency a second sample may be required for referral to a Reference Centre for quantification.

Samples on children <6 months old or individuals with a raised reticulocye count may be falsely normal.

A repeat sample may be requested after a haemolytic episode to confirm G6PD status.

Tube/Minimum Volume

Red EDTA - Minimum 1.0 mL

Sample Collection

Mix gently after collection.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details.

Method

Fluorescent spot.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

Results are reported as Normal, Inconclusive or Deficient.
Any Inconclusive or Deficient samples are sent to a Reference centre for quantification.

Known Interfering Factors

Samples on children <6 months old or individuals with a raised reticulocye count may be falsely normal.

Reference Ranges

N/A

Turn-around Time

72 hours

Frequency of Testing

Weekdays on request

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

GALACTOSE-1-PHOSPHATE

Indication	Galactosaemia monitoring.
Referral Laboratory	Willink Biochemical Genetics Laboratory Genomic Diagnostic Laboratories Metabolites Section 6th Floor, Pod 1 St Mary's Hospital Oxford Road Manchester M13 9WL
Specimen Tube Required	Lithium Heparin tube 
Sample Type	Whole Blood
Minimum Volume	5 mL
Special Collection Requirements	Must reach the referral laboratory within 24 hours of venepuncture.
Additional Information	Samples should be collected in core laboratory working hours where possible.
Storage in Laboratory	Refrigerate prior to sending.
Transportation to Referral Laboratory	Transport on WET ice via Courier. DO NOT USE DRY ICE.
Turnaround Time	3 working weeks - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	As and when required

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

GALACTOSE 1 PUT (GALACTOSE-1-PHOSPHATE-URIDYLE-TRANSFERASE)

Indication	Suspicion of Galactosaemia (clinical history can include lethargy, poor feeding, vomiting, jaundice, failure to thrive and liver failure)
Referral Laboratory	Specialist Laboratory Medicine Biochemical Genetics Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Lithium Heparin Tube 
Sample Type	Whole blood
Minimum Volume	0.5mL
Special Collection Requirements	Make sure sample is gently but well mixed to avoid blood clots. Do not use Gel tube.
Additional Information	DO NOT spin or separate, whole blood is required for this test. Test invalid if patient has been blood transfused in past 6 weeks.
Storage in Laboratory	Store at room temperature prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	7 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekdays

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

GAMMA GLUTAMYL TRANSFERASE / GGT

Indication

Raised in alcohol abuse; secondary to certain drug therapies and cholestasis

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Modified IFCC Photometric

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

Male: 0 - 73 IU/L

Female: 0 - 38 IU/L

Turn-around Time

Urgent Samples – 8 hours

Routine Inpatients – 8 hours

OP/GP – 24 hours

Frequency of Testing

Daily

Unique Identifier and Version Number

LI 820 078 Gamma GT Version 6.2

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

GANGLIOSIDE ANTIBODIES (GM1 & GQ1B)

Indication	Anti-ganglioside antibodies are associated with several immunologically mediated peripheral neuropathies e.g., anti-GM1 (IgM) with multifocal motor neuropathy, GQ1b (IgG) with the Miller-Fisher syndrome and GM1 (IgG) with the Guillain-Barre syndrome. Anti-ganglioside antibodies are often found at low titres in normal individuals.
Referral Laboratory	Immunology Laboratory Churchill Hospital Old Road Headington Oxford OX3 7LE
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml. Plasma is acceptable but CSF not required.
Special Collection Requirements	None
Additional Information	None
Turnaround time	21 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Frequency of testing	Not stated.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **GANG**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	NPEx

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Packaging	Wrap each individual sample in absorbent paper and pack samples and NPEx Manifest in red sample bags. Place packed samples in Transport boxes and seal ready for posting.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

GASTRIC BIOPSIES FOR HELICOBACTER PYLORI

Indication

For suspected Infection with H. pylori associated with peptic ulceration and failure of treatment.

Tube / Minimum Volume

CE marked sterile leak proof container in sealed plastic bag,

Sample Collection

Gastric Biopsy sent in a sterile universal container,

Transport

Specimens should be transported and processed as soon as possible (preferably within 6hr), biopsies can be covered with small amount of saline (100uL) to prevent dessication.

Where delays of 6hours are expected, The biopsy should be covered with approximately 1mL brain heart infusion broth in a small sterile container, and stored at 4°C for up to 48hr. **NOTE: Brain Heart infusion broth can be obtained from Microbiology Dept**.

Clinical Details Required

Site of biopsy, duration of symptoms, antimicrobial therapy.

Method

A representative portion of the specimen is cultured onto selective culture media. Any cultured organisms will be identified and susceptibility testing performd in line with local policy.

Interpretation

Culture

The report will state isolation or absence of isolation of Helicobacter pylori.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

Delay in transport to the laboratory.

Turn-around Time

7-10 days. Results may be reported sooner.

Frequency of Testing

Daily.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

GASTRIC PARIETAL CELL ANTIBODIES (GPC)

Indication	Pernicious anaemia. Atrophic gastritis. Autoimmune gastritis. Anti-liver/kidney/microsomal antibodies are part of the autoantibody screen which includes gastric parietal cell antibodies, mitochondrial antibodies, and smooth muscle antibodies.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum Volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	None
Turnaround Time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **ALS**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx
Packaging	Pack samples in racks. Place packed samples in Transport bags

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Suspected gastrinoma/somatostatinoma or Zollinger-Ellison syndrome (gastrin-producing tumour).
Referral Laboratory	The SAS Laboratories Clinical Biochemistry Charing Cross Hospital Fulham Palace Road Hammersmith London W6 8RF
Specimen Tube Required	EDTA 
Sample Type	Plasma
Minimum Volume	1mL
Special Collection Requirements	Mix gently and transfer to the laboratory immediately. Sample must be in the laboratory within 15 minutes of collection. Sample must be fasting 6-8 hours.
Additional Information	H2 blockers should be stopped for 72h and Omeprazole for 2 weeks before blood is taken.
Storage in Laboratory	Refrigerate prior to sending.
Transportation to Referral Laboratory	Transport on Dry Ice via Courier.
Turnaround Time	21 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Batch testing

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

GENITAL SWAB CULTURE

Indication

Sexually transmitted infections (STIs), vaginal infections other than STIs, other infections of the female genital tract, infections (other than STIs) of the male genital tract,

Tube / Minimum Volume

Swab with Amies transport medium

Sterile plain universal (white top), ideally minimum volume of 1ml.

Samples may include: High vaginal swab (HVS), vaginal discharge, vulval swab, labial swab, cervical swab, endocervical swab, penile swab, urethral swab, genital ulcer swab, semen, screening swabs for N. gonorrhoeae, aspirates from bartholin's glandintra-uterine contraceptive device (IUCD),

Sample Collection

Samples should ideally be sent prior to initiation of antimicrobial therapy.

Transport

Specimens should be transported to the laboratory so soon as possible.

Clinical Details Required

Site of sample (HVS, LVS, CX etc), duration of symptoms, antimicrobial therapy.

Method

Culture onto agar plates according to clinical details and local policy.

Interpretation

Significant organisms will be reported with interpretative comments where indicated. Further interpretation/clinical advice can be obtained through discussion with a microbiologist.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

Inhibitors. Overgrowth of significant pathogens by normal flora.

Turn-around Time

48-72 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

GENTAMICIN

Indication

Levels are used to monitor Gentamicin therapy. Electrolytes and serum creatinine should also be monitored regularly.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Pre/Post/Unknown Dose must be specified, Samples should not be taken from the site of the venous catheter where the gentamicin has been administered.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Competitive immunoassay.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

No significant interferences have been observed against Haemolytic, Icteric or Lipaemic interferents.

Reference Ranges

For further details see the following link

https://intranet.cht.nhs.uk/clinical-information/antibiotics/

Turn-around Time

Urgent Samples – 4 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

GLOMERULAR BASEMENT MEMBRANE ANTIBODIES (GBM)

Indication	Rapidly progressive glomerulonephritis and Haemoptysis with haematuria. Used in the diagnosis and monitoring of Goodpasture's syndrome/anti-GBM disease.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	None
Turnaround time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **GBM**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not routinely considered urgent. However, if clinical indications suggest the patient may have GBM antibodies, the Clinician may request the sample to be tested urgently. Please inform the Referrals team who will make arrangements for the sample to be sent to the referral lab immediately. If samples are not urgent, they can be stored until the next working day.
Arrangement during public holidays	No special arrangements required unless the test has been requested as URGENT. If samples are not urgent, they can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport. Arrange transport with the Transport department for URGENT samples if the delivery driver has already collected samples or during Out of Hours.
Method of sending patient/test info.	NPEx.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Packaging	Pack samples in racks. Place packed samples in Transport bags.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Used in the diagnosis of diabetes and may be part of a glucose tolerance test.

Tube/Minimum Volume

Yellow Fluoride – Minimum 500 ul (Adults and Paediatrics)

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Patient should ideally be fasted overnight.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Hexokinase Assay.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

A normal fasting plasma glucose < 6.1 mmol/L

Fasting plasma glucose 6.1 – 6.9mmol/L is considered an impaired fasting glucose level.
Retest fasting glucose in 3 – 6 months and if still in the impaired fasting glycaemia range the patient should be referred for a glucose tolerance test.

Fasting plasma glucose greater or equal to 7.0 mmol/L on more than one occasion is consistent with diabetes.

A random plasma glucose >= 11.1 mmol/L suggests diabetes.

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

GLUTAMIC ACID DECARBOXYLASE ANTIBODIES (GAD)

Indication	Insulin-dependent diabetes mellitus, Stiff-person syndrome. Glutamic acid decarboxylase occurs in two isoforms (GAD 65 and GAD67); although GAD 67 is only expressed in neuronal tissue, the major target antigen in both syndromes is GAD 65, which is the isoform used in this commercial assay.
Referral Laboratory	Immunology Laboratory Churchill Hospital Old Road Headington Oxford OX3 7LE
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml. Plasma is NOT acceptable.
Special Collection Requirements	None
Additional Information	None
Turnaround time	10 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Not stated.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **GAD**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	NPEx
Packaging	Wrap each individual sample in absorbent paper and pack samples and NPEx Manifest in red sample bags. Place packed samples in Transport boxes and seal ready for posting.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

GLYCATED HAEMOGLOBIN / GHB / HBA1C

Indication

Used in the monitoring of patients on treatment for diabetes. May be used for the diagnosis of diabetes in non-pregnant patients where there is normal red cell turnover and no known haemoglobin variant present.

Tube/Minimum Volume

Red EDTA – Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Boronate affinity and High performance liquid chromatography

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

Non-Diabetic 18-41 mmol/mol

Turn-around Time

Urgent Samples – 48 hours

Routine Inpatients – 48 hours

OP/GP – 48 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

GROUP B STRETOCOCCUS SCREENING (ANTE NATAL PATIENTS)

Indication

The examination of genital specimens for the presence of Group B Streptococcus (GBS) in Ante Natal patients.

Tube / Minimum Volume

Swab with Amies transport medium.

Sample Collection

Low vaginal and rectal swab per patient.

(Note: HVS should not be collected as these have a lower sensitivity)

Transport

Specimens should be transported to the laboratory so soon as possible.

Clinical Details Required

Women who are known to have been colonised with GBS in a previous pregnancy - testing 3-5 weeks before the anticipated delivery (usually 35-37 weeks).

Method

Broth enrichment followed by culture onto agar plates.

Interpretation

Will be reported as below:

Negative screen: No Group B Streptococci Isolated

Positive screen: Group B Streptococci will be reported along with antibiotic susceptibility profile and with interpretative comments where indicated. Further interpretation/clinical advice can be obtained through discussion with a microbiologist.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Turn-around Time

48 – 72 hours.

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Measured to check under or overproduction of the hormone by the pituitary. Can also be used to examine the function of the pituitary and to monitor the effectiveness of treatment. ACROMEGALY: If acromegaly is suspected, a GTT should be performed to determine if GH can be suppressed by hyperglycaemia. SHORT STATURE: A low random GH cannot diagnose GH deficiency. GH deficiency can be due to a number of causes.
Referral Laboratory	Blood Sciences Old Medical School Leeds General Infirmary Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	1mL
Special Collection Requirements	None
Additional Information	Heparin and EDTA plasma can also be used for this test.
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport on Dry Ice via CHFT Hospital Transpost.
Turnaround Time	7 days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly (weekdays)

The current controlled version of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Suspected gastrinoma/somatostatinoma or Zollinger-Ellison syndrome. Gut Hormone levels are indicated in the investigation of patients with symptoms suggestive of a neuroendocrine tumour or for screening patients with multiple endocrine neoplasia type 1.
Referral Laboratory	Pathology Department Charing Cross Hospital Fulham Palace Road Hammersmith London W6 8RF
Specimen Tube Required	EDTA 
Sample Type	Plasma
Minimum Volume	3 mL
Special Collection Requirements	Fasting sample (6-8 hours) H2 blockers should be stopped 72 hours prior to sample collection. Omeprazole should be stopped two weeks prior to sample collection.
Additional Information	Sample should be centrifuged within 15 minutes of collection.
Storage in Laboratory	Freeze prior to sending.
Transportation to Referral Laboratory	Transport on Dry Ice via Courier.
Turnaround Time	21 days from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Not stated

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HAEMOGLOBINOPATHY SCREEN (SICKLE CELL SCREEN, THALASSAEMIA SCREEN, HAEMOGLOBIN VARIANT (HV) SCREEN)

Indication

Detection of haemoglobin abnormalities including sickle cell and thalassaemic conditions.

All antenatal patients are offered screening for sickle cell and thalassaemia regardless of family origins.

Screening for sickle cell is performed for pre-op patients.

Tube/Minimum Volume

Red EDTA - Minimum 1 mL
and Brown Gel (Serum) - Minimum 1 mL are required

Sample Collection

Both sample and form MUST be labelled with Full Name, DOB and NHS Number.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.
For antenatal screening please fill in the Family Origin Questionnaire (FOQ) which is incorporated in the request on ICE and EPR. For guidance for health care professionals please see the back of the paper FOQ found at https://www.gov.uk/government/publications/family-origin-questionnaire-sickle-cell-and-thalassaemia-screening

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Method

An FBC is performed on all requests using the red EDTA sample as part of the thalassaemia screening process.
A Ferritin is performed using the Brown Gel sample to help determine iron deficiency which may hinder interpretation.
HPLC is performed on all requests using the red EDTA sample to determine any haemoglobin variants and to help diagnose beta thalassaemia.
Gel electrophoresis may be performed if any haemoglobin variants are detected.
Samples may be sent to a reference lab for confirmation of unusual haemoglobin variants.

Interpretation

Hb A2 and Hb F results are reported along with an interpretive comment.
The National Antenatal Screening Programme Algorithm is used for reporting Antenatal results.

Known Interfering Factors

Age of sample, incorrect sample identification, incorrect or missing information on FOQ.

Reference Ranges

Hb A2 1.5-3.4%
Hb F <1%

Turn-around Time

3 working days

Frequency of Testing

Weekdays - Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HAEMOPHILUS DUCREYI

Indication	Useful in diagnosis of chancroid an infectious disease caused by *Haemophilus ducreyi*, most commonly presenting with a painful genital ulcer, and often associated with fluctuant lymphadenitis.
Sample Type/Tubes and Minimum Volumes	Fresh dry swab or swab in viral transport medium is optimal, taken from genital or oral ulcer.
Known Interfering Factors	Not stated.
Reference Laboratory Address	UK Health Security Agency Bacteriology Reference Department 61 Colindale Avenue London NW9 5EQ.
Reference Lab Website	Virus Reference Department User Manual (publishing.service.gov.uk)
Contact Telephone Number	020 83277887
Expected Turn-around Time	Not stated
Unique Identifier and Version Number	IP 320 042 Version 1

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HAPTOGLOBIN

Indication

Used to assess the possibility of intravascular haemolysis, which may be due to thalassaemias; sickle cell disease; G6PDH deficiency etc. where levels of haptoglobin are reduced.

Haptoglobin is an acute phase protein and may therefore be increased in cases of inflammation.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Polyethylene glycol enhanced PEG immunoturbidimetric

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

Haptoglobin levels are unable to be reported on samples which have an haemolysis level >1.5g/L.

Reference Ranges

0.5 – 2.0 g/L

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HDL CHOLESTEROL / HIGH DENSITY LIPOPROTEIN

Indication

Used in the calculation of LDL cholesterol, and the Total cholesterol to HDL cholesterol ratio, for the assessment of risk cardiovascular disease.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volumes and the number of tubes required.

Sample Collection

Patient should be fasted.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Elimination/catalase/trinder reaction.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

N/A

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

N/A.

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HELICOBACTER PYLORI FAECAL ANTIGEN

Indication

1. Suspected H. pylori infection
2. Test of cure* following H. pylori eradication – indications:

    - recurrence of severe symptoms
    - complicated peptic ulcer disease or MALTOMA
    - family history gastric cancer
    - poor compliance with prescribed treatment
    - planned long term NSAIDs without additional PPI

* NB Test of cure samples should ideally be sent 8 weeks after PPI/antibiotic treatment course completed (absolute minimum of 4 weeks)

Specimen Container

BLUE CAP with collecting spoon

node://29006

Sample Collection

Collect at least 4 weeks (ideally 8 weeks) after stopping antibiotic therapy, or 2 weeks after stopping PPI or bismuth preparations.

Scoop fresh stool into the collection pot using the spoon in the lid of the container. Ensure correctly sealed before sending to laboratory.

Transport

Transport to lab within 24 hours of sample collection. If delay anticipated can be placed in refrigerator 2-8C for maximum 3 days.

Clinical Details Required

Symptoms. If patient has had prior treatment for H. pylori.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Method

Detects H. pylori antigen in stool indicating whether or not there is active infection with H. pylori.

Chemiluminescence immunoassay performed locally on Diasorin.

Interpretation

POSITIVE – suggestive of infection with H. pylori. Review result in clinical context and treat accordingly only if symptoms/signs consistent with H. pylori infection.

NEGATIVE – does not exclude H. pylori infection, particularly if has received PPI/antibiotic therapy within 2 or 4 weeks respectively. If strong clinical suspicion of H pylori infection, alternative methods of investigation may be required.

Known Interfering Factors

PPI / antibiotic / bismuth use as described above.

Turn-around Time

5 working days

Frequency of Testing

Monday, Wednesday and Friday. Samples can be sent any day.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Hepatitis IgM = Screening for acute hepatitis Hepatitis Total antibody = Check immune status against hepatitis A Hepatitis IgM testing will be performed on all clinical requests for Hepatitis A unless stating to check immunity status. Hepatitis A Total antibody will be performed on any requests to check immunity status.
Tube / Minimum Volume	7.5 ml serum
Sample Collection	As per CHFT venepuncture policy
Transport	Send to the laboratory within 24 hours
Clinical Details Required	As appropriate
Method	Detection of Hepatitis IgM antibodies to detect acute Hepatitis A Detection of Hepatitis Total antibodies and absence of Hepatitis IgM is indicative of immunity
Interpretation	Results of this assay should always be interpreted in conjunction with the patient's medical history, clinical presentation, and other findings. <u>Specific HAV IgM:</u> POSITIVE: suggests acute infection with HAV. Almost always positive at the time of

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	presentation and remains positive for ~3-6 months after infection. NEGATIVE: no serological evidence of acute Hepatitis A infection. Consider testing for Hepatitis E (discuss with microbiology). <u>Total antibody:</u> POSITIVE: HAV IgM and/or IgG detected indicating either acute or past infection. Sample will have specific IgM testing to differentiate between acute/past infection (see below). HAV IgG normally persists at detectable levels for life following a past infection with HAV. It is less clear about how long antibodies remain detectable following a complete course of Hepatitis A vaccination, although at least 10 years of protection is anticipated (a complete course depends on the brand of the vaccine used – consult the Green Book for further information). NEGATIVE: HAV IgM and IgG not detected. No evidence of acute or past infection or effective vaccination against Hepatitis A. Interpretative comments will be provided.
Known Interfering Factors	Test results are reported qualitatively as positive or negative for the presence of IgM anti-HAV. However, diagnosis of infectious diseases should not be established on the basis of a single test result but should be determined in conjunction with clinical

	findings and other diagnostic procedures as well as in association with medical judgement. Specimens from patients receiving preparations of mouse monoclonal antibodies for therapy or diagnosis may contain human anti-mouse antibodies (HAMA). Such specimens may interfere in a monoclonal antibody-based immunoassay and their results should be evaluated with care.
Turn-around Time	1-3 days for local screening Additional 5-7 days if sample sent to reference laboratory.
Frequency of Testing	Routine: Monday - Friday Urgent testing can be performed any day - must be discussed with microbiology

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HEPATITIS A SEROLOGY

Indication

Acute hepatitis

Check immune status against hepatitis A

Tube / Minimum Volume

Serum Gel 5mls

node://28903

Sample Collection

Venepuncture as per CHFT policy

Transport

Transport to lab within 24 hours of taking sample (unless urgent).

Clinical Details Required

Date of onset of symptoms, recent travel history

Method

Locally we initially test for total Hepatitis A antibody, i.e. combined IgM and IgG. If this is positive, we then go on to do specific IgM testing to determine if there is evidence of an acute infection.

Interpretation

Total antibody:

POSITIVE: HAV IgM and/or IgG detected indicating either acute or past infection. Sample will have specific IgM testing to differentiate between acute/past infection (see below). HAV IgG normally persists at detectable levels for life following a past infection with HAV. It is less clear about how long antibodies remain detectable following a complete course of Hepatitis A vaccination, although at least 10 years of protection is anticipated (a complete

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

course depends on the brand of the vaccine used – consult the Green Book for further information).

NEGATIVE: HAV IgM and IgG not detected. No evidence of acute or past infection or effective vaccination against Hepatitis A.

Specific HAV IgM:

POSITIVE: suggests acute infection with HAV. Almost always positive at the time of presentation and remains positive for ~3-6 months after infection.

NEGATIVE: no serological evidence of acute Hepatitis A infection. Consider testing for Hepatitis E (discuss with microbiology).

Known Interfering Factors

Not stated

Turn-around Time

24 hours

Frequency of Testing

Daily including Saturday and Sunday. Sample should be received by 1:30pm at the latest to ensure same day result is available.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HEPATITIS B CORE ANTIBODY

Indication	Suspected acute Hepatitis B infection
Tube / Minimum Volume	5 ml serum
Sample Collection	As per CHFT venepuncture policy
Transport	Send to the laboratory within 24 hours
Clinical Details Required	As appropriate
Method	Qualitative detection of antibodies to hepatitis B core antigen in human serum or plasma. Screening test done locally - confirmation sent to Leeds Virology
Interpretation	Interpretative comments will be provided
Known Interfering Factors	The ADVIA Centaur HBc Total assay is limited to the detection of total antibodies to hepatitis B core antigen in human serum or EDTA plasma. Assays for the detection of anti-HBc may not identify all patient samples that contain hepatitis B virus or potentially infectious units of blood and may generate false reactive results. Results from patients taking biotin supplements or receiving high-dose biotin therapy should be interpreted with caution due to possible interference with this test.
Ref. Range (Male)	N/A
Ref. Range (Female)	N/A
Ref. Range (Paed)	N/A
Turn-around Time	1-3 days for local screening. Additional 5-7 days if sample sent to reference laboratory.
Frequency of Testing	Routine: Monday – Friday. Urgent testing can be performed any day - must be discussed with microbiology.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HEPATITIS B GENOTYPING

Indication	Determination of genotype of Hepatitis B virus
Sample Type/Tubes and Minimum Volumes	7.5mL serum or 5mL EDTA Please supply viral load if available.
Known Interfering Factors	Not stated
Reference Laboratory Address	Micropathology Ltd Venture Centre University of Warwick Science Park Sir William Lyons Road Coventry CV4 7EZ United Kingdom
Reference Lab Website	Micropathology: Test A-Z
Contact Telephone Number	(0) 2476 323222
Expected Turn-around Time	3-5 days
Unique Identifier and Version Number	IP 320 046 Version 1

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HBC TOTAL 2 (HBCT2) – HEPATITIS B CORE TOTAL

Indication	This assay can be used as an aid in the diagnosis of individuals (neonates, children, adolescents, and adults) with acute or chronic hepatitis B virus (HBV) infection, and in the determination of the clinical status of HBV-infected individuals in conjunction with other HBV serological markers for the laboratory diagnosis of HBV disease associated with HBV infection.
Tube / Minimum Volume	7.5 ml serum
Sample Collection	As per CHFT venepuncture policy
Transport	Send to the laboratory within 24 hours
Clinical Details Required	As appropriate
Method	Qualitative detection of antibodies to hepatitis B core antigen in human serum or plasma. Screening test done locally - confirmation sent to Leeds Virology.
Interpretation	Results of this assay should always be interpreted in conjunction with the patient's medical history, clinical presentation, and other findings. • Samples with an Index Value of < 1.00 are considered nonreactive for total antibodies to hepatitis B core antigen. • Samples with an Index Value ≥ 1.00 are considered reactive for total antibodies to

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	hepatitis B core antigen. Interpretative comments will be provided.
Known Interfering Factors	The ADVIA Centaur HBcT2 assay is limited to the detection of total antibodies to hepatitis B core antigen in human serum or plasma. Assays for the detection of anti-HBc may not identify all patient samples that contain hepatitis B virus or potentially infectious units of blood and may generate false reactive results. The performance of the assay has not been established for populations of immunocompromised or immunosuppressed patients. Patient samples may contain heterophilic antibodies that could react in immunoassays to give falsely elevated or depressed results. This assay is designed to minimize interference from heterophilic antibodies.
Turn-around Time	1-3 days for local screening Additional 5-7 days if sample sent to reference laboratory
Frequency of Testing	Routine: Monday - Friday Urgent testing can be performed any day - must be discussed with microbiology.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HEPATITIS B DNA PCR / VIRAL LOAD

Indication	Quantitative detection of Hepatitis B viral particles in plasma as an indicator of viral replication. Significant for initiation and monitoring of interferon therapy.
Sample Type/Tubes and Minimum Volumes	EDTA samples preferred. *Serum acceptable but* may result in under/over reporting of viral load.
Known Interfering Factors	Not stated.
Reference Laboratory Address	Microbiology Department, Royal Oldham Hospital.
Expected Turn-around Time	10 days
Unique Identifier and Version Number	IP 320 045 Version 1

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HEPATITIS B SEROLOGY

Indication

Suspected acute hepatitis, suspected Hepatitis B, response to Hepatitis B vaccine (anti-HBs)

Tube / Minimum Volume

Serum gel

node://28903

Sample Collection

As per CHFT venepuncture policy

Transport

Send to the laboratory within 24 hours

Clinical Details Required

If acute hepatitis suspected

Method

Screening test done locally - confirmation send to Leeds Virology

Interpretation

Interpretative comments will be provided.

Known Interfering Factors

Not stated

Turn-around Time

1-3 days for local screening

Additional 5-7 days if sample sent to reference laboratory.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Frequency of Testing

Routine: Monday - Saturday

Urgent testing can be performed any day - must be discussed with microbiology.

Unique Identifier and Version number

IP 320-047 Version 1.0

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HEPATITIS B SURFACE ANTIBODY (ANTI-HBS)

Indication	Detection of Antibodies to Hepatitis B Surface Antigen
Tube / Minimum Volume	5 ml serum
Sample Collection	As per CHFT venepuncture policy
Transport	Send to the laboratory within 24 hours
Clinical Details Required	As appropriate
Method	In vitro diagnostic immunoassay for the qualitative and quantitative determination of total antibodies to hepatitis B surface antigen in human serum or plasma. The assay results may be used as an aid in the determination of susceptibility to hepatitis B virus (HBV) infection in individuals prior to or following HBV vaccination or where vaccination status is unknown. Assay results may be used with other HBV serological markers for the laboratory diagnosis of HBV disease associated with HBV infection.
Interpretation	Nonreactive: Samples with an initial value of less than 8 mIU/mL are considered nonreactive (negative) for antibodies to HBsAg. Reactive: Samples with an initial value greater than or equal to 12.0 mIU/mL are considered reactive (positive) for antibodies to HBsAg. Interpretative comments will be provided
Known Interfering Factors	Assay performance characteristics have not been established for the use of the ADVIA Centaur anti-HBs2 assay as an aid in determining susceptibility to HBV infection prior to or following vaccination in infants or children.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	This assay does not differentiate between a vaccine-induced immune response and an immune response induced by infection with HBV. To determine if the anti-HBs response is due to vaccine or HBV infection, a total anti-HBc assay may be performed. The performance of the assay has not been established for populations of immunocompromised or immunosuppressed patients.
Ref. Range	N/A
Ref. Range (Female)	N/A
Ref. Range (Paed)	N/A
Turn-around Time	1-3 days for local screening. Additional 5-7 days if sample sent to reference laboratory.
Frequency of Testing	Routine: Monday – Friday. Urgent testing can be performed any day - must be discussed with microbiology.
Unique Identifier and Version Number	IP 320 004 Version 1.0

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HEPATITIS C GENOTYPING

Indication	Determination of the strain of Hepatitis C virus with which a patient is infected. Different genotypes respond differently to anti-viral treatment. Used to determine which patients are more likely to respond to anti-viral treatment and the appropriate duration of that treatment.
Sample Type/Tubes and Minimum Volumes	7.5mL serum or 5mL EDTA Please supply viral load if available.
Known Interfering Factors	Not stated
Reference Laboratory Address	Micropathology Ltd Venture Centre University of Warwick Science Park Sir William Lyons Road Coventry CV4 7EZ United Kingdom
Reference Lab Website	Micropathology: Test A-Z
Contact Telephone Number	(0) 2476 323222
Expected Turn-around Time	3-5 days
Unique Identifier and Version Number	IP 320 050 Version 1

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HEPATITIS C PCR / VIRAL LOAD

Indication	Hepatitis C Virus RNA - Presence in blood indicates active viral replication and therefore active infection. May be DETECTABLE within 1-3 weeks after exposure. HCV RNA levels (viral load or quantitative HCV RNA) in the blood are used both to predict and monitor responses to anti-viral treatment. Test should not be requested as a screening test for Hep C infection - please see serology tests.
Sample Type/Tubes and Minimum Volumes	7.5mL serum or 5ml EDTA
Known Interfering Factors	Not stated.
Reference Laboratory Address	Microbiology Department, Royal Oldham Hospital.
Expected Turn-around Time	10 days
Unique Identifier and Version number	IP 320 051 Version 1

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HEPATITIS C SEROLOGY

Indication

Acute hepatitis

Screening for past infection

Post exposure injury (donor)

Tube/Minimum Volume

Serum gel

Sample Collection

As per CHFT venepuncture policy.

Transport

Send to the microbiology laboratory as soon as possible after specimen collection.

Clinical Details Required

Date of onset of symptoms.

If post-exposure injury (and if donor or recipient).

Method

In house serology. Confirmation of positive samples provided by Leeds Teaching Hospitals NHS Trust.

Interpretation

Interpretative comments will be provided on the report. Discuss with Microbiology if further interpretation required.

IgM positive – suggestive of acute infection. This is a notifiable infection.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

Not stated.

Reference Ranges

N/A

Turn-around Time

72 hours.

Frequency of Testing

Monday – Friday. Weekend testing available for urgent tests.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

SUSPECTED HEPATITIS C INFECTION

Indication	Suspected Hepatitis C infection
Tube / Minimum Volume	5 ml serum
Sample Collection	As per CHFT venepuncture policy
Transport	Send to the laboratory within 24 hours
Clinical Details Required	As appropriate
Method	Diagnostic immunoassay for the qualitative determination of immunoglobulin G (IgG) antibodies to hepatitis C virus (HCV) in human serum. Screening test done locally - confirmation sent to Leeds Virology.
Interpretation	Interpretative comments will be provided.
Known interfering factors	Not stated
Ref. Range (Male)	N/A
Ref. Range (Female)	N/A
Ref. Range (Paed)	N/A
Turn-around Time	1-3 days for local screening Additional 5-7 days if sample sent to reference laboratory
Frequency of Testing	Routine: Monday - Friday Urgent testing can be performed any day - must be discussed with microbiology

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Detection of both IgG and IgM antibodies to Hepatitis Delta Antigen in the serum of infected patients. Anti-HD can be detected in high titres in HbsAg chronic carriers (superinfection) and at lower levels in patients with acute infections (coinfection) Infection with Hepatitis D virus requires presence of Hepatitis B virus.
Sample Type/Tubes and Minimum Volumes	7.5mL Serum gel tube (minimum volume 0.5mL)
Known Interfering Factors	Not stated.
Reference Laboratory Address	UK Health Security Agency Bacteriology Reference Department 61 Colindale Avenue London NW9 5EQ.
Expected Turn-around Time	15 days
Unique Identifier and Version number	IP 320 053 Version 1

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Hepatitis E virus (HEV) has a faecal-oral transmission route, generally "self-limiting" but occasionally develops into an acute severe liver disease. In rare cases, it can prove fatal particularly in pregnant women. The clinical presentation of acute symptomatic hepatitis E cannot be distinguished from that of any other viral hepatitis. Although epidemiological features may suggest HEV infection in some cases, laboratory tests should always be performed to confirm any clinical diagnosis

Sample Type / Tubes and Minimum Volumes

5ml blood for the test should be drawn into **Serum Gel**

Clinical Details Required

Duration of symptoms, travel history (to endemic areas), pregnancy and exposure history (environmental/water and certain foods) should be explored.

Timing of Sample Collection

Serology should be sent 2 to 9 weeks after exposure.

Interpretation

HEV IgG - detected in both acute cases and in those previously exposed. The IgG response can persist for several years and may be life-long in majority of patients.

HEV IgM - used to confirm the diagnosis of acute HEV · It is usually detectable at the onset of symptoms or abnormal liver function. However, it may be undetectable in acute cases and false positives can also occur. Hence the detection of HEV IgM alone is not diagnostic of HEV infection. An IgM reactivity must be confirmed by serology (reactive IgG) or by molecular testing (HEV RNA positivity). HEV RNA testing should be undertaken on all

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

samples that are IgM reactive and IgG unreactive to confirm acute HEV infection.

Known Interfering Factors

Not Stated

Reference Laboratory Address

PHE Public Health Laboratory,

Birmingham Heart of England NHS Foundation Trust,

Bordesley Green East Birmingham, B9 5SS

Reference Lab Website

https://www.gov.uk/the-midlands-public-health-laboratory-services

Contact Telephone Number

Tel: 0121 424 3111

Expected Turn-around Time

7 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HERPES SIMPLEX PCR (HSV)

Indication	The HSV1/2 assay may be used to test clinician-collected swab specimens from skin lesions in the anogenital or oral region and placed in viral transport media (VTM) or Aptima specimen transport medium (STM). The assay will be used to aid in the diagnosis of HSV-1 and/or HSV-2 infections in symptomatic male and female patients.
Tube / Minimum Volume	Clinician-collected swab specimens from anogenital and oral lesions placed in the STM or VTM can be used. Lesion samples may be collected using either the: • Aptima Multitest Swab Specimen Collection kit (for STM) • Commercially available VTM collection kit.
Sample Collection	Refer to the appropriate specimen collection kit package insert for specific collection instructions
Transport	Sample should be transported to the laboratory without delay.
Clinical Details Required	Relevant clinical details should be included on the request form.
Method	The Aptima Herpes Simplex Viruses 1 & 2 assay (Aptima HSV 1 & 2 assay) is an *in vitro* real time nucleic acid amplification test (NAAT) for the qualitative detection and differentiation of messenger RNA (mRNA) from herpes simplex virus (HSV) type 1 (HSV-1) and type 2 (HSV-2) on the Panther™ system.
Interpretation	Negative: No HSV-1 or HSV-2 mRNA detected HSV-2 positive: HSV-2 mRNA detected

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	HSV-1 positive: HSV-1 mRNA detected HSV-1 and HSV-2 positive: HSV-1 and HSV-2 mRNA detected Invalid: There was an error in the generation of the result. A repeat specimen should be collected.
Known Interfering Factors	Reliable results are dependent on adequate specimen collection, transport, storage, and processing.
Turn-around Time	3-10 days
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HERPES SIMPLEX (HSV) SEROLOGY

Indication	Serological test used to screen for past infection with Herpes simplex virus (HSV). Relevant for investigation of Transplant assessment, localised vesicular rash (generalised if indicated), Guillain Barre, Encephalitis (+ other neurological conditions).
Sample Type/Tubes and Minimum Volumes	7.5mL Serum. Requests for type specific IgG are send away tests and will be assessed before sending for suitability. HSV IgM is no longer available.
Known Interfering Factors	Not stated.
Reference Laboratory Address	LGI Microbiology Department.
Reference Lab Website	Test and Tubes (leedsth.nhs.uk)
Contact Telephone Number	0113 392 3499
Expected Turn-around Time	7-10 days
Unique Identifier and Version number	IP 320 055 Version 1

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HISTONE ANTIBODIES

Indication	Histones are basic proteins which bind to DNA within the nuclei of cells. Anti-histone antibodies are found in patients with SLE and patients with DIL (Drug-induced SLE). In SLE, anti-histone antibodies do not provide any better diagnostic information than DNA and anti-nuclear antibodies but in drug induced lupus, a typical antibody profile consists of anti-nuclear antibodies, anti-histone antibodies but rarely dsDNA antibodies and extractable nuclear antibodies. Drugs implicated in DIL include hydralazine, procainamide and isoniazid. Histone antibodies can be positive in active lupus nephritis Anti-histone antibodies have also been reported in selected cases of rheumatoid arthritis. Anti-histone antibody levels are reportedly higher in neuropsychiatric lupus
Referral Laboratory	Protein Reference Unit Immunology PO Box 894 Sheffield S5 7YT
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	None

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Turnaround time	10 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	As required (Weekdays)

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **IHIST**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	Sample to be sent with Pathology request form.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Packaging	Wrap each individual sample in absorbent paper and pack samples and request forms in red sample bags. Place packed samples in Transport boxes and seal ready for posting

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HIV ANTIBODY/ANTIGEN

Indication

Suspected/possible HIV Infection.

Infectious disease in pregnancy screening (HIV test should be offered to all expectant mothers)

Universal screening in Sexual Health Clinics

All patients diagnosed with TB, Hepatitis B or C, lymphoma.

Donor of contamination incident where consent has been obtained to test for HIV.

UK National Guidelines for HIV Testing (2008) can be found here: http://www.bhiva.org/documents/guidelines/testing/glineshivtest08.pdf

Tube / Minimum Volume

Serum gel

node://28903

Sample Collection

As per CHFT venepuncture policy

Transport

Sample should reach the laboratory within 24 hours of collection.

Clinical Details Required

Reason for testing

Method

ADVIA Centaur HIV Ag/Ab Combo (CHIV) Assay for the Detection of HIV p24 Antigen and Antibodies to Human Immunodeficiency Virus Type 1, Including Group O (HIV-1 + "O") and/or Type 2 (HIV-2)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

All screen positive tests will be referred to Leeds General Infirmary (Virology) for confirmation by a further 2 methods. If confirmed, a positive result will be reported with a request for a repeat sample for confirmation.

Known Interfering Factors

The ADVIA Centaur CHIV assay was evaluated for interference according to CLSI Document EP7-A2 (. None of the interferents at the levels tested produced a change in clinical interpretation of the assay. For further details contact microbiology.

Reference Range

Results are qualitative and will be reported as either positive or negative. Occasionally two tests may be reactive and repeat sampling 7 days after the initial test date will be required to exclude HIV infection.

Turn-around Time

24-72 hours for screen. Screen positives will be referred for confimration and may take a further 3-5 days for confirmation.

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HIV-1 RNA QUANTITATION (VIRAL LOAD)

Indication

Determination of response to HAART

Tube / Minimum Volume

EDTA

node://28903

Sample Collection

Venepuncture as per CHFT policy

Transport

Send to the laboratory as soon as possible

Clinical Details Required

If on treatment.

Method

Real Time PCR

Interpretation

Viral load will be reported. Interpretation is best done with previous results to see trend in response to treatment.

Known Interfering Factors

Delay in transport to laboratory can cause artificially high viral loads. Ideally sample should be in the laboratory with 6 hours of

Turn-around Time

7 days

Frequency of Testing

Monday - Friday

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication	Used for distinguishing recent HIV-1 infections from those which are long-term.
Sample Type/Tubes and Minimum Volumes	7.5 mL Serum or 5 mL EDTA Minimum volume 200µL
Known Interfering Factors	Not stated.
Reference Laboratory Address	UK Health Security Agency Bacteriology Reference Department 61 Colindale Avenue London NW9 5EQ
Expected Turn-around Time	Not stated

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HIV PREDICTED TROPISM

Indication	An important subclass of drugs used in patients with HIV-1 infection have been designed to inhibit HIV-1 viral entry. These entry inhibitors are drugs which target one of the receptors that can be used (in addition to the main receptor CD4 by HIV-1), as a coreceptor to enter the cell. The most important HIV coreceptors are the chemokine receptors CCR5 and CXCR4. HIV-1 particles fall into three classes according to which of them they can use to enter a cell: some can only use CCR5, others can only use CXCR4, and some can use either of them. Before and during drug treatment with a coreceptor antagonist, it is important to find out about the coreceptor usage of the virus population in the patient. Indicated for baseline and/or when failing therapy.
Sample Type/Tubes and Minimum Volumes	10 mL EDTA
Known Interfering Factors	Must have quantifiable HIV-1 viral load.
Reference Laboratory Address	Dept of Virology, Royal Free Hospital, Pond Street, London NW3 2QG
Expected Turn-around Time	14 - 21 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication	Suspected Ankylosing Spondylitis.
Referral Laboratory	Transplant & Cellular Immunology Level 9 Gledhow Wing St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Blue EDTA Tube 
Sample Type/Minimum Volume	Whole Blood - 5ml
Special Collection Requirements	None
Additional Information	None
Turnaround Time	28 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **IB27**
Preparation	Do NOT centrifuge sample.
Storage	Place primary sample tube in the designated rack at ambient room temperature.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	Sample to be sent with Pathology request form.
Packaging	Pack samples and request forms in red sample bags. Place packed samples in Transport bags.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	HIV positive patients - Suspected hypersensitivity to abacavir
Referral Laboratory	Transplant & Cellular Immunology Level 9 Gledhow Wing St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Blue EDTA Tube 
Sample Type/Minimum Volume	Whole Blood - 5ml
Special Collection Requirements	None
Additional Information	For HIV positive patients. Please ensure samples and request forms have a Danger of Infection sticker on.
Turnaround Time	7 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **IB57**
Preparation	Do NOT centrifuge sample.
Storage	Place primary sample tube in the designated rack at ambient room temperature.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	Sample to be sent with Pathology request form. Ensure patient request form and sample have a Danger of Infection sticker on.
Packaging	Pack samples and request forms in red sample bags. Place packed samples in Transport bags.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Suspected Behcet's Disease
Referral Laboratory	Transplant & Cellular Immunology Level 9 Gledhow Wing St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Blue EDTA Tube 
Sample Type/Minimum volume	Whole Blood - 5ml
Special Collection Requirements	None
Additional Information	None
Turnaround time	28 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **IB51**
Preparation	Do NOT centrifuge sample.
Storage	Place primary sample tube in the designated rack at ambient room temperature.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	Sample to be sent with Pathology request form.
Packaging	Pack samples and request forms in red sample bags. Place packed samples in Transport bags.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Suspected form of autoimmune uveitis Birdshot Chorioretinopathy.
Referral Laboratory	Transplant & Cellular Immunology Level 9 Gledhow Wing St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Blue EDTA Tube 
Sample Type/Minimum Volume	Whole Blood - 5ml
Special Collection Requirements	None
Additional Information	None
Turnaround Time	28 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **IA29**
Preparation	Do NOT centrifuge sample.
Storage	Place primary sample tube in the designated rack at ambient room temperature.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	Sample to be sent with Pathology request form.
Packaging	Pack samples and request forms in red sample bags. Place packed samples in Transport bags.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication	This test is primarily for diagnosis and monitoring of disorders of homocysteine metabolism. Homocysteine is generated by leukocytes in vitro.
Referral Laboratory	Specialist Laboratory Medicine Trace Metals Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	EDTA 
Sample Type	Plasma
Minimum Volume	0.5mL
Special Collection Requirements	Fasting sample is preferable. Serum samples are NOT acceptable.
Additional Information	Ideally samples should be separated within 30 minutes of venepuncture and be frozen within 1 hour of collection. Please write the time the sample was separated on the request form. This test is not routine available - request must be authorised prior to referral.
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	18 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HUMAN HERPES VIRUS 6 DNA

Indication	Detection of Human Herpes Virus 6 by PCR in patients with suspected HHV6 associated encephalitis. Indicated in young children and immunocompromised/immunosupressed patients. May also cause other systemic infections in immunocompromised patients.
Sample Type/Tubes and Minimum Volume	CSF -white universal EDTA tube If delays occur refrigerate at 2-8 degrees C.
Known Interfering Factors	Not stated.
Reference Laboratory Address	LGI Microbiology Department.
Expected Turn-around Time	5 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication	Detection of IgG antibodies to *Echinococcus* species (hydatid)
Sample Type/Tubes and Minimum Volume	5mL Serum Clinical history must be provided. [14] Provide details of travel history.
Known Interfering Factors	Not stated.
Reference Laboratory Address	The Doctors Laboratory The Halo Building Mabledon Place London WC1H 9AX
Expected Turn-around Time	7 days
Unique Identifier and Version number	IP 320 129 Version 1

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

3-HYDROXYBUTYRATE (BETA HYDROXYBUTYRATE)

Indication	3HB is used to detect ketones to identify patients suffering from diabetic ketoacidosis.
Referral Laboratory	Department of Clinical Chemistry Sheffield Children's Hospital Western Bank Sheffield S10 2TH
Specimen Tube Required	Fluoride Tube 
Sample Type	Plasma
Minimum Volume	0.5ml
Special Collection Requirements	None
Additional Information	Haemolysed samples unsuitable for analysis
Storage in Laboratory	Refrigerate prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	1 Week - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HYDROXYINDOLE ACETIC ACID – 5H1AA PLASMA

Indication	Used in the investigation of carcinoid disease.
Referral Laboratory	Specialist Laboratory Medicine Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Lithium Heparin Tube 
Sample Type	Plasma
Minimum Volume	1mL
Special Collection Requirements	Must be spun, separated and frozen (posting freezer) within 5 hours of collection. Fasting sample required.
Additional Information	All serotonin containing foods should have been avoided for at least 8 hrs prior to sample collection. These include salmon, poultry, eggs, spinach, seeds, milk, soy products and nuts. Blood serotonin levels should also be considered.
Storage in Laboratory	Freeze prior to sending.
Transportation to Referral Laboratory	Transport frozen on dry ice via CHFT Hospital Transport
Turnaround Time	20 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Fortnightly (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

HYDROXYPROGESTERONE (170HP)

Indication	Investigation of ambiguous genitalia in the newborn, diagnosis and monitoring of patients with classical and late-onset congenital adrenal hyperplasia (CAH).
Referral Laboratory	Specialist Laboratory Medicine Endocrine Section Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	1mL
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	14 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Twice Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

IGD (IMMUNOGLOBULIN D)

Indication	Hyper IgD syndrome, Periodic fever syndrome, Autoinflammatory syndrome
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	2ml
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	2 weeks - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	As required

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Differential diagnosis of spontaneous hypoglycaemia.
Referral Laboratory	Guildford RSCH Peptide Hormone Laboratory Berkshire and Surrey Pathology Services Royal Surrey County Hospital Egerton Road Guildford GU2 7XX
Specimen Tube Required	Gel tube 
Sample Type	Serum
Minimum Volume	1mL
Special Collection Requirements	Freeze immediately on receipt
Additional Information	None
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport frozen on Dry Ice via Courier.
Turnaround Time	1 week - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Not stated

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication	Immunodeficiency. IgG4 related diseases.
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	2ml
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	7 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

IMMUNOGLOBULINS / IGS / IGA, IGM, IGG

Indication

Essential in the diagnosis and monitoring of primary and secondary immunodeficiency's. Also used in the diagnosis and classification of patients with gammopathies.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Polyethylene glycol-enhanced PEG immunoturbidimetric assay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

Adult IgA: 0.4 – 3.5 g/L
Adult IgG: 6.5 – 16.0 g/L
Adult IgM: 0.5 – 3.0 g/L

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

INFECTIOUS MONONUCLEOSIS TEST (PAUL BUNNELL)

Indication

Laboratory test for the diagnosis of Infectious Mononucleosis (Glandular fever).

Tube/Minimum Volume

Whole Blood (2ml) in EDTA or Citrated anticoagulant or Serum (4ml) in plain or gel tube.
Paediatrics 1ml whole blood or 2ml serum.

Sample Collection

Clean venepuncture or capillary collection. Mix gently after collection (if EDTA or citrate).

Transport

Routine transport to lab.

Clinical Details Required

Clinical details relating to suspected viral infection.

Method

Clearview IM II (manual) kit.

Interpretation

The test is a qualitative (negative or positive) test detecting IgM Heterophile antibodies in the acute phase of the disease.

The peak incidence of infectious mononucleosis occurs between 15 and 19 years of age. Infection during childhood is usually sub clinical, whereas infection of adolescents or young adults results in IM in 30-70% of cases. After 35 years of age the incidence of the disease declines rapidly and is uncommon in persons over 40 years of age.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

Clearview IM is only for use with blood specimens. The performance of the test taken from other sources has not been established.

Specimens which are contaminated or grossly haemolysed should not be used. Serum or plasma specimens must be clear and particle free.

Negative results may be obtained if insufficient antibody is present in the specimen. Where negative results are obtained and symptoms still persist, it is recommended that a further test be carried out at a later date, allowing time for the antibody to develop.

It has been reported that up to 10-20% of infected adults and up to 50% of children under 4 years of age may fail to produce heterophile antibodies.

The presence of heterophile antibodies has been demonstrated in other disease states such as leukaemia, Burkitts Lymphoma, rheumatoid arthritis, viral hepatitis and cytomegalovirus infections.

As heterophile antibody may persist for several months after recovery, a positive result should not be regarded as indicative of acute infectious mononucleosis in isolation from the clinical and haematological information. Therefore, the result obtained from the Clearview IM kit must be considered with both haematological finding and the clinical symptoms of the patient before a diagnosis of infectious mononucleosis is made.

A blood film should accompany the IM screen.

Critical Decision limits

N/A

Critical Phone Limits

Positive glandular fever tests are not required to be phoned.

Reference Ranges

A Qualitative, Positive or Negative result is reported.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Turn-around Time

Routine samples-same day.

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Measures TOTAL Infliximab Antibody Concentration.
Referral Laboratory	Blood Sciences Area A2 Royal Devon and Exeter NHS Foundation Trust Barrack Road Exeter EX2 5DW
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	Not stated
Special Collection Requirements	None
Additional Information	Large doses of Biotin (Vitamin B7) may interfere with the assay.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post.
Turnaround Time	10 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Detection and differentiation of influenza A virus , influenza B virus, respiratory syncytial virus (RSV) and SARS CoV2 RNA from nasopharyngeal (NP) swabs in transport medium from individuals with signs and symptoms of respiratory tract infection in conjunction with clinical and epidemiological risk factors.
Tube / Minimum Volume	Nose and/or throat swab or alternatively a nasopharyngeal swab in viral transport medium (VTM)
Sample Collection	Refer to Infection Control Poster: Specimens should be collected using the Copan UTM-RT® System, BD™ UVT System or Bio-VTMTM using the validated nylon flocked swabs (see Swabs and Transport Media). In addition, flocked swabs, polyester, and rayon swabs are acceptable swab types.
Transport	Ensure VTM container is sealed correctly. Transport to laboratory in a sealed plastic microbiology sample bag.
Clinical Details Required	Clinical symptoms, date of onset.
Method	The NeuMoDx™ Flu A/B/RSV/SARS-CoV-2 Vantage Assay combines automated RNA extraction and amplification/detection by real-time RT-PCR
Interpretation	Interpretative comments will be provided.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors	Because detection of viral targets is generally dependent on the number of viral particles present in the sample, reliable results are dependent on proper specimen collection, handling, and storage. Deletions or mutations in the conserved regions targeted by the NeuMoDx Flu A-B/RSV/SARS-CoV-2 Vantage Assay may affect detection and could lead to an erroneous result.
Turn-around Time	24 hours
Frequency of Testing	Routine: Monday - Sunday

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

INHIBIN A (TUMOUR MARKER)

Indication	Granulosa cell tumours
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	2ml
Special Collection Requirements	None
Additional Information	Plasma from EDTA or Lithium Heparin can be used if Serum Gel is unavailable.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	2 weeks - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Differential diagnosis of documented spontaneous hypoglycaemia.
Referral Laboratory	Guildford RSCH Peptide Hormone Laboratory Berkshire and Surrey Pathology Services Royal Surrey County Hospital Egerton Road Guildford GU2 7XX
Specimen Tube Required	Gel or Lithium Heparin 
Sample Type	Serum or Lithium Heparin Plasma
Minimum Volume	1mL
Special Collection Requirements	Take blood during hypoglycaemia or after an overnight fast. Sample must be sent to the Laboratory within 1 hour of collection.
Additional Information	Use Lithium Heparin for neonates so maximum volume of plasma can be collected.
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport frozen on Dry Ice via Courier.
Turnaround Time	4 weeks - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Not stated

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

INSULIN ANTIBODIES

Indication	Predictor for type 1 diabetes. Insulin resistance. Insulin antibodies may be seen in autoimmune polyendocrinopathies, in association with other organ-specific autoimmune conditions or following administration of thiol-containing drugs.
Referral Laboratory	Protein Reference Unit Immunology PO Box 894 Sheffield S5 7YT
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	None
Turnaround time	5 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **IINS**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	Sample to be sent with Pathology request form.
Packaging	Wrap each individual sample in absorbent paper and pack samples and request forms in red sample bags. Place packed samples in Transport boxes and seal ready for posting

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

INSULIN-LIKE GROWTH FACTOR (IGF1)

Indication	IGF-1 is used in the management of patients with GH deficiency and acromegaly.
Referral Laboratory	Blood Sciences Old Medical School Leeds General Infirmary Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	1mL
Special Collection Requirements	IGF1 is unstable. Samples must be separated rapidly.
Additional Information	None
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport on Dry Ice via CHFT Hospital Transpost.
Turnaround Time	2 weeks - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

INTERNATIONAL NORMALISED RATIO (INR)

Indication

Therapeutic monitoring of patients taking oral anticoagulants (i.e. Warfarin, Phenindione, Sinthrome).

The INR is only relevant to patients taking oral anticoagulants.

Tube/Minimum Volume

Blood
Sodium citrate (green top bottle)
3ml

Sample Collection

Clean venepuncture Mix gently after collection. The tube MUST be filled exactly to the line.

Transport

Specimens should be transported to lab as soon as possible. Specimens may be delivered by the following routes:
Pneumatic tube system, phlebotomists, Trust personnel, Trust transport drivers, external medical personnel, White Knights and private hire personnel.

Clinical Details Required

Please give details of oral anticoagulant.

Method

Sysmex CS 2500 analyser.

Interpretation

Results are reported as a ratio (INR).

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

The condition of the specimen (e.g. haemolysed, lipaemic and parenteral feeding) may affect results.

Reference Ranges

Therapeutic ranges vary depending on the clinical condition requiring oral anticoagulant therapy.

Critical phone limits

INR results greater than 5.0 are phoned through. Out of hours, GP and anticoagulant clinic results over 5.0 are phoned through to Local Care Direct.

Turn-around Time

1 - 2 hours

Frequency of Testing

24 hour service

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

INTRINSIC FACTOR ANTIBODIES (IFA)

Indication	Investigation of vitamin B12 deficiency due to loss of intrinsic factor.
Referral Laboratory	Leeds General Infirmary Blood Sciences Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	Sample should not be collected from a patient who has received a vitamin B12 injection in the last week as free vitamin B12 can give a false positive result.
Additional Information	Samples must ideally be less than 48 hours old when received in the laboratory.
Turnaround time	7 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Not stated

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **IFA**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	Sample to be sent with Pathology request form
Packaging	Pack samples and request forms in red sample bags. Place packed samples in Transport bags.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

IRON / IRON PROFILE

Indication

Used in the investigation of suspected haemochromatosis in conjunction with transferrin. Available urgently, in cases of suspected overdose.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volume stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Ferrozine Colorimetric

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

Iron levels are unable to be reported on samples which have an haemolysis level >1.5g/L.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

Male: 11.6 – 31.3 umol/L
Female: 9.0 – 30.4 umol/L
Iron level peak at 6hrs post dose.
<55 umol/L mild poisoning

55-90 umol/L moderate poisoning
>90 umol/L severe poisoning

Further information on poisoning available from NPIS.

Turn-around Time

Urgent Samples – 4 hours

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Confirmation of adequate levels and alerting to toxic levels in patients receiving itraconazole for treatment or prophylaxis of fungal disease. Drug concentration in mg/L, with advice on target levels. Levels should be maintained above 0.5 mg/L. If levels are below this: ensure dosing is appropriate in relation to meals - consider increasing dose or examine effects of concomitant medications.
Sample Type/Tubes and Minimum Volume	Serum 5ml tube
Known Interfering Factors	Not stated
Reference Laboratory Address	Mycology Reference Laboratory The General Infirmary Leeds LS1 3EX
Reference lab Website	https://www.leedsth.nhs.uk/a-z-of-services/pathology/microbiology-2/mycology/mycology-samples/antifungal-drug-monitoring/itraconazole-levels/
Contact Telephone Number	tel:0113 392 6787
Expected Turn-around Time	5 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

IV CANNULAE (CATHETER TIPS)

Indication

For suspected CR-BSI – Catheter related blood stream infections.

Tube/Minimum Volume

Catheter tips placed in a sterile universal or Swab with Amies transport medium.

Sample Collection

Line tips eg CVP or Hickman lines,

Remove cannula using aseptic technique and ideally cut off 4cm of the tip into a sterile universal container using sterile scissors. Cannula should only be sent if there is evidence of infection.

Swabs of cannula insertion sites

Sample the inflamed area exudate around the catheter insertion site using a swab with Amies transport medium.

Transport

Specimens should be transported to the laboratory so soon as possible.

Clinical Details Required

Suspected line infection, catheter related blood stream infection.

Method

Culture onto agar plates according to clinical details and local policy.

Interpretation

Any significant amount of organisms will be reported with interpretative comments where indicated. Further interpretation/clinical advice can be obtained through discussion with a microbiologist.

Known Interfering Factors

Antimicrobial therapy.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Turn-around Time

48 hours.

Frequency of Testing

Daily.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Detection of JC Virus by PCR in CSF samples from immunocompromised patients is diagnostic of progressive multifocal leukoencephalopathy (PML). Consider in immunocompromised patients with progressive damage and inflammation of the white matter in the brain with neurological symptoms including cognitive and behavioural changes; paraesthesia; visual problems; gait abnormalities and loss of limb coordination; and hemiparesis. Please specify if patient is immunocompromised and has PML.
Sample Type/Tubes and Minimum Volume	CSF EDTA blood 5mL
Known Interfering Factors	Not stated
Reference Laboratory Address	Department of Microbiology, Old Medical School Thoresby Place Great George Street Leeds LS1 3EX
Reference Lab Website	https://www.leedsth.nhs.uk/a-z-of-services/pathology/test-and-tubes/virology/jc-virus-pcr
Contact Telephone Number	0113-392-23499
Expected Turn-around Time	7-10 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

LACTATE

Indication

Used in the assessment of possible lactic acidosis and hyperlactatemia. Sometimes used in the ischaemic lactate test for McArdle's syndrome

Tube/Minimum Volume

Paediatics - Yellow Fluoride – Minimum 500ul
Adults – Yellow Fluoride – Minimum 1 ml

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Sample must be spun in the laboratory within 30 minutes of venepuncture.

Transport

Transport to the lab as soon as possible, Sample must be spun in the laboratory within 30 minutes of venepuncture.

Clinical Details Required

Please give relevant details on the request form.

Method

Lactate Oxidase, colorimetric chemistry assay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

0.5 – 2.0 mmol/L

Results above 4.0mmol/L are indicative of sepsis

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 1 hour

OP/GP – n/a contact laboratory

Frequency of Testing

Daily

Unique Identifier and Version Number

LI 820 103 Lactate 6.2

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

LACTOSE DEHYDROGENASE / LDH

Indication

Used as a generalised tumour marker for monitoring therapy.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volume stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Lactate/ Nicotinamide adenine Dinucleotide (NAD)

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

No significant interferences have been observed against Icteric or Lipaemic interferents. A value for LDH cannot be obtained for Haemolysed specimens that contain above 1.5g/L Hb.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Reference Ranges

208 - 378 IU/L

Turn-around Time

Urgent Samples – 8 hours

Routine Inpatients – 8 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Monitoring therapy
Referral Laboratory	Sandwell & West Birmingham Hospitals NHS Trust Department of Clinical Chemistry City Hospital Dudley Road Birmingham B18 7QH
Specimen Tube Required	EDTA 
Sample Type	Whole blood
Minimum Volume	0.5mL
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post.
Turnaround Time	5 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

LAXATIVE SCREEN

Indication	Suspected laxative abuse.
Referral Laboratory	Sandwell & West Birmingham Hospitals NHS Trust Department of Clinical Chemistry City Hospital Dudley Road Birmingham B18 7QH
Specimen Tube Required	Universal Container 
Sample Type	Urine
Minimum Volume	Not stated
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via courier.
Turnaround Time	2-3 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Suspected lead poisoning and occupational health monitoring of individuals who work with lead. Also, where there is a suspected risk of lead exposure. This particularly includes any child with pica and any individual handling lead or lead-containing items non-occupationally.
Referral Laboratory	Specialist Laboratory Medicine Trace Metals Block 46 St James hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	EDTA 
Sample Type	Whole blood
Minimum Volume	2mL
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	7 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekdays. Urgent analysis is possible; please contact Laboratory or Duty Biochemist.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

LEGIONELLA URINARY ANTIGEN

Indication

Legionnaires' disease is caused by Legionella pneumophila and is characterized as an acute febrile respiratory illness ranging in severity from mild illness to fatal pneumonia. Legionella pneumophila is responsible for 80-90% of reported cases of Legionella infection with Serogroup 1 accounting for >70% of all legionellosis.

Tube/Minimum Volume

White top universal container or Red top container with Boric acid can be used.
A minimum of 5 ml urine sample is required.

Sample Collection

Random urine sample should be collected into sterile leak proof containers with or without boric acid.

Transport

Time between specimen collection and processing -
The samples can be stored at room temperature if assayed within 24 hours of collection. Alternatively, specimens may be stored at 2-8°C for up to 14 days.

Clinical Details Required

Travel history (including UK travel), symptoms, date of onset

Method

Method using to test Legionella antigen is an immunochromatographic membrane assay.
This test is rapid giving a result within 15 minutes.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

A positive result indicates Legionella pneumophila serogroup 1 infection.
Legionella pneumophila serogroup 1 antigen has been detected in urine as early as three days after the onset of symptoms.

Known Interfering Factors

Excretion of Legionella antigens in urine may vary depending on the individual patient. Antigen excretion may begin as early as 3 days post onset of symptoms and persist for 1 year afterwards. A positive antigen test can therefore indicate past or present infection.

Only Legionella pneumophila serogroup 1 antigen is being screened for. Other Legionella may cause infection and therefore infection with Legionella cannot be ruled out.

Turn-around Time

24 hours

Frequency of Testing

Daily

Unique Identifier and Version Number

IP 320-065 Version 1.0

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

LEPTOSPIRA

Indication	Detection of Leptospirosis infection by detection of Leptospira specific antibodies. Leptospirosis is a zoonotic disease spread via infected animal urine. Animals can spread the bacteria in their urine. Nearly all mammals are capable of carrying the bacteria and may spread the disease among others of their own kind and to other species, including man. Common animal reservoirs include: • rodents • cattle • pigs Leptospirosis is more common in tropical areas of the world and is still uncommon in the UK. Serology is the primary investigation for Leptospirosis diagnosis. The primary serological test performed will be an IgM ELISA.
Sample Type/Tubes and Minimum Volume	1 mL preferred serum, plasma or clotted blood.
Known Interfering Factors	Not stated
Reference Laboratory Address	Rare and Imported Pathogens Laboratory (RIPL) Public Health England Porton Down Salisbury Wiltshire SP4 0JG
Reference Lab Website	https://www.gov.uk/guidance/leptospira-reference-unit-services
Contact Telephone Number	01980 612348
Expected Turn-around Time	10 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

LGV / LYMPHGRANULOMA VENEREUM)

Indication	Rectal swabs proving positive for *Chlamydia trachomatis* must be referred to STBRU Colindale for further testing for LGV serovars. Lymphogranuloma venereum (LGV) is a sexually transmitted infection caused by 3 serovars of Chlamydia trachomatis: serovars L1, L2 and L3.
Sample Type/Tubes and Minimum Volume	Confirmed C.trachomatis positive clinical specimen: minimum of 500µl residual NAAT swab transport medium, or a fresh dry swab (note: swabs from men only).
Known Interfering Factors	Not stated
Reference Laboratory Address	Bacteriology reference department (BRD) UK Health Security Agency 61 Colindale Avenue London NW9 5EQ
Reference Lab Website	https://www.gov.uk/government/publications/molecular-confirmation-tests-request-form
Contact Telephone Number	020 8327 7887
Expected Turn-around Time	10 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

LIPASE

Indication

Hyperamylasaemia has been reported in numerous abdominal conditions that can be confused with pancreatitis. Acute pancreatitis has also been reported in patients with a normal amylase. Serum lipase is usually normal in patients with elevated serum amylase, who do not have pancreatitis, but who do have peptic ulcer, salivary adenitis, inflammatory bowel disease, intestinal obstruction, or macroamylasemia.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Colorimetric rate chemistry

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

n/a

Reference Ranges

6 – 51 U/L

Turn-around Time

Urgent Samples – 8 hours

Routine Inpatients – 8 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

LITHIUM

Indication

Patients taking Lithium should be monitored to assess possible toxicity.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Blood should be collected 12 hours post dose.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Colorimetric chemistry assay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

0.4-1.0mmol/L. Samples should be collected 12 hours post dose, NICE guideline 38 recommends monitoring lithium levels every 3 months, thyroid and renal function every 6 months for patients on lithium treatment.

Turn-around Time

Urgent Samples – 2 hours

Routine Inpatients – 2 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

LIVER KIDNEY MICROSOMAL ANTIBODIES (LKM)

Indication	Investigation of Autoimmune hepatitis. Anti-liver/kidney/microsomal antibodies are part of the autoantibody screen which includes gastric parietal cell antibodies, mitochondrial antibodies, and smooth muscle antibodies.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	All new patients with a positive LKM antibody or patients with atypical LKM antibodies pattern will be confirmed by a liver immunoblot screen
Turnaround time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **ALS**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx
Packaging	Pack samples in racks. Place packed samples in Transport bags

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

LOW DENSITY LIPOPROTEIN / LDL

Indication

Cholesterol; triglyceride and HDL cholesterol are measured and used to calculate LDL cholesterol and total cholesterol/HDL cholesterol ratio. Total and LDL Cholesterol levels are also measured as a guide to the efficacy of lipid lowering therapy using statins.

Tube/Minimum Volume

n/a – calculation using cholesterol, triglyceride and HDL cholesterol

Sample Collection

Patient should be fasted

Electronic requesting systems will calculate total sample volume and the number of tubes required.

Transport

n/a

Clinical Details Required

Please give relevant details on the request form.

Method

Calculated from the total cholesterol and HDL-cholesterol values measured using the Friedewald formula

LDL = TotalChol - (Triglyceride / 2.2) - HDL which is not valid when triglycerides > 4.5 mmol/L

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

n/a

Reference Ranges

n/a

Turn-around Time

n/a

Frequency of Testing

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

LUPUS ANTICOAGULANT TESTING

Indication

To help evaluate a prolonged APTT and/or a thrombotic episode, to help determine the cause of recurrent foetal loss, as part of an evaluation for antiphospholipid syndrome. Not a diagnostic test for lupus.

Tube/Minimum Volume

Blood
Sodium citrate (green top)
3ml
NB The tube MUST be filled exactly to the line
At least two tubes are required
Plus 1 gel (brown top) or one white top tube for the cardiolipin antibody test.

Sample Collection

Clean venepuncture. Mix gently after collection The tube MUST be filled exactly to the line.

Transport

Send to lab as soon as possible. Specimens may be delivered by the following routes:
Pneumatic tube system, phlebotomists, Trust personnel, Trust transport drivers, external medical personnel, White Knights and private hire personnel.

Clinical Details Required

Full clinical details required especially relating to fetal loss or thrombotic events.

Method

Sysmex CS-2500 analyser.

Interpretation

Results are reported as negative, positive or equivocal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

Grossly haemolysed samples, lipaemic samples and samples with clots will be rejected. Certain drugs affect the Lupus anticoagulant screen.

Reference Ranges

LA1 screen = 0.8-1.20 ratio
Lupus sensitive APTT = 26.0-35.0 seconds

Critical phone limits

N/A

Turn-around Time

4 weeks

Frequency of Testing

Tested in batches once a week.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

LH – LUTEINISING HORMONE

Indication

LH is secreted by the anterior pituitary in response to gonadotropin-releasing hormone (GnRH)

secreted by the hypothalamus. In both males and females, LH secretion is regulated by a balance of positive and negative feedback mechanisms involving the hypothalamic-pituitary axis, the reproductive organs, and the pituitary and sex steroid hormones. LH and the other pituitary gonadotropin, FSH, play a critical role in maintaining the normal function of the male and female reproductive systems.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated are for guidance only, Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Two-site sandwich immunoassay using direct chemiluminometric technology

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

No significant interferences have been observed against Lipaemic

interferents. Results for LH cannot be reported on haemolysed or Icterus

specimens that contain above 5.25.g/L Hb /513umol/L bilirubin.

Reference Ranges

n/a

Turn-around Time

Urgent Samples – 48 hours

Routine Samples (Inpatient) – 48 hours

OP/GP Samples – 48 hours

Frequency of Testing

Daily

Unique Identifier and Version Number

LI 820-292 LH version 1.2

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

LYME SEROLOGY

Indication

Suspected Lyme's disease

NB Local screening test for Borrelia IgM/IgG is performed first. Only if the screening test is positive will the sample be referred for further testing at the reference laboratory.

Sample type/tubes and minimum volumes

Serum

node://28903

Clinical details required

Travel history, if history of tick bite and when. Presence of rash typical of erythema migrans.

Timing of sample collection

Samples can be taken at any time. Blood taken early after infection can be negative as the immune response to the pathogen can fluctuate early in the disease process. Therefore if the result is negative, and symptoms persist for >3-4 weeks a repeat sample should be sent.

Interpretation

Interpretative comments will be provided with test results and can be discussed with microbiology if required.

Known interfering factors

Time of sample in relation to onset of symptoms.

Administration of antibiotics early after infection can give false negative results.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Laboratory address

Rare and imported pathogens laboratory (RIPL)

Public Health England
Manor Farm Road
Porton Down
Wiltshire
SP4 0JG

Reference lab website

https://www.gov.uk/government/collections/rare-and-imported-pathogens-laboratory-ripl

Contact telephone number

01980 612 348

Expected turn-around time

10 days

Unique Identifier and Version number

IP 320-016 Version 1.0

Joint fluid, tissue and CSF may be sent for PCR – discuss with microbiology.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

M ANNOSE BINDING LECTIN

Referral Laboratory

Protein Reference Unit
Immunology
PO Box 894
Sheffield S5 7YT

Accreditation status - Accredited (checked September 2021)

Specimen Tube Required

Gel Tube

Specimen Type/Minimum volume

Serum - 5ml.

Special Requirements

None

Method of Transportation to Referral Laboratory

Transport at ambient temperature

Turn-around Time

5 Days - from receipt of sample at referral laboratory.

It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.

Frequency of Testing

Weekly (Weekdays)

Indication

Recurrent infections in childhood or during chemotherapy.

For further information see
https://www.immqas.org.uk/pru.asp?S=676721612&C=1252&AID=51

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Used to assess magnesium deficiency, caused by malabsorption; malnutrition; renal disease; prolonged use of diuretics.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Xylidyl Blue chemistry assay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

No significant interferences have been observed against Icteric or Lipaemic interferents. Results for magnesium cannot be reported on haemolysed specimens that contain above 1.5g/L Hb.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

0.7 – 1.0 mmol/L

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

MALARIAL PARASITE SCREEN

Indication

Blood cell morphological examination and serological screening test to detect malarial parasites in blood. Other blood borne parasites such as microfilaria and trypanosomes may also be reported.

Tube/Minimum Volume

Whole Blood
EDTA (red top bottle) 2.7ml
Paediatric EDTA red top sample bottle 1.3ml

Sample Collection

Clean venepuncture or capillary collection. Mix gently after collection**.**
Samples ideally should be received in the laboratory within two hours to ensure optimal blood cell viability

Transport

Routine transport. Specimens may be delivered by the following routes: Pneumatic tube system, phlebotomists, Trust personnel, Trust transport drivers, external medical personnel, White Knights and private hire personnel

Clinical Details Required

Essential information required:
Which endemic malarial areas has the patient visited recently ?
Has the patient taken malaria prophylaxis?
Any clinical history of malaria?

Method

Thin blood film preparations stained with May-Grunwald Geimsa.
Thick film preparations stained with Fields Stain.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Serological screen using commercially available kit (CareStart Rapid Malaria test).

Interpretation

A **negative** malaria result makes a malarial infection unlikely but cannot definitively exclude it. If there is a high clinical suspicion then a repeat sample should be sent (preferably when the patients' temperature spikes). There are five types of Plasmodium sp. Parasites which can be detected in the haematology laboratory; Plasmodium falciparum, P.vivax, P.ovale, P.malariae and P. Knowelsi. A positive result is definitive of a malaria infection and the species type will be reported only as 'suspected' eg Plasmodium vivax suspected.(the sample will be subsequently sent to for full confirmation to a referral laboratory at the next convenient time). If the sample appears to be positive for P.falciparum or P.knowelsi then a percentage parasitaemia is also reported. This can be used to monitor the efficacy of the treatment in subsequent samples. If not previously performed, a G6PD assay must be performed before commencing treatment. This is automatically performed by the laboratory.

Malaria is a notifiable disease and is reported to Public Health (by the laboratory).

Known Interfering Factors

Old samples may become unusable due to deteriorating cell morphology. Serological testing using the above rapid test can give false positive or negative results. The rapid serological screen will not detect the presence of P.knowlesi. With known P.vivax cases, the manufacturers stated sensitivity is 96%, P. falciparum sensitivity is 98% and sample with no history of malaria gave a specificity of 97.5%. As such, the results from this rapid test should be interpreted with the full clinical picture.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

Results reported are qualitative. Only in positive cases of P.flaciparum and P.knowelsi is a % parasitaemia reported.

Critical phone limits

All Positive cases are phoned.

Turn-around Time

Provisional results are within four hours of receipt in the haematology laboratory. Confirmation by the referral laboratory (London School of Tropical Medicine) will be longer unless an urgent review is required.

Frequency of Testing

Routine, daily.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Assess over-supplementation during long-term parental nutrition.
Referral Laboratory	Specialist Laboratory Medicine Trace Metals Block 46 St James Hospital Beckett Street LEEDS LS9 7TF
Trust	The Leeds Teaching Hospitals NHS Trust
Specimen Tube Required	TRACE METAL LH/7.5ml 
Sample Type/Minimum volume	Whole blood – 0.5mL
Special Collection Requirements	Samples must be collected into a trace element free tube. Other tube types are not acceptable due to the risk of contamination.
Additional Information	Trace metal specific needles and tubes available from Laboratory on request.
Referral laboratory quoted Turnaround time	7 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Weekdays

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	EPR sample(s): Samples should arrive at the laboratory with a unique laboratory barcode number affixed. Form and primary sample(s): Assign unique laboratory barcode number, affix a barcode to request form and primary sample. Secondary sample(s): N/A Book the request into the LIMS system using the test code: **MN**
Preparation	None required. Do NOT centrifuge sample.
Storage *	Store primary sample tube in the Posting **Fridge**. Store any additional primary samples in designated storage location unless required for additional testing.
Additional Information	Trace metal specific needles and tubes available from Laboratory on request.
Urgent requests	This test is not considered urgent, however please contact the laboratory if urgent analysis is required. Samples can be stored until the next working day.
Arrangement during public/bank holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.
Referral lab link	Pathology - Leeds Teaching Hospitals NHS Trust (leedsth.nhs.uk)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Posting Instructions *(for laboratory use only)*

Additional checks	None
Method of transport	Transport at **ambient** temperature via **CHFT Hospital Transport**.
Method of sending patient/test info.	Send sample with Manifest created on NPEx.
Packaging	Pack samples and request forms in red sample bags. Place packed samples in Transport bags.
Marking as SENT in APEX	Record the test as **PEN** in APEX. Record sample on the Referred spreadsheet.

Reporting Instructions *(for laboratory use only)*

Names	Profile = N/A Test = **MN** LTG = **POST2**
Received results	NPEx
Reporting format	Numerical
Comments	Coded comments are added automatically, via NPEx.
Associated coded comments for reporting	None

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Associated coded comments for location	**SULTH** (Sent for testing at the Leeds Teaching Hospitals) Coded comments for location to be added manually.
Authorising results	Authorise off the queue = **NPXLTV**
Associated queues	**NPXLTH** (NPEx LTHT Biochem Work PEN) **NPXLTV** (NPEx LTHT Biochem Validation)
Additional information	None

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

MANNOSE BINDING LECTIN (MBL/MBP)

Indication	Recurrent infections in childhood or during chemotherapy.
Referral Laboratory	Protein Reference Unit Immunology PO Box 894 Sheffield S5 7YT
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	HAMA (human anti-mouse antibodies) antibodies and rheumatoid factor may produce falsely elevated results.
Turnaround time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Weekly (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **IMBLA**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	Sample to be sent with Pathology request form.
Packaging	Wrap each individual sample in absorbent paper and pack samples and request forms in red sample bags. Place packed samples in Transport boxes and seal ready for posting

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	The test is intended to be used as an aid in the determination of serological status to measles virus.
Tube / Minimum Volume	Serum – 5ml EDTA Heparin
Sample Collection	As per CHFT venepuncture policy
Transport	Samples should be transported to the laboratory as soon as possible and if any delay should be stored at 2-8°C in the fridge
Clinical Details Required	Relevant clinical details should be included on the request form
Method	The LIAISON® Measles IgG assay uses chemiluminescence immunoassay (CLIA) technology for the semi-quantitative determination of specific IgG antibodies to measles virus in human.
Interpretation	Samples with measles virus IgG concentrations below 13.5 AU/mL should be graded negative. Samples with measles virus IgG concentrations ranging between 13.5 and 16.5 AU/mL should be graded equivocal. Equivocal samples must be retested in order to confirm the initial result. Samples which are positive at the second test should be considered positive. Samples which are negative at the second test should be considered negative. A second sample should be collected and tested no less than one to two weeks later when the result is repeatedly equivocal. Samples with measles virus IgG concentrations equal to or above 16.5 AU/mL should be graded positive.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	A negative result for IgG antibodies to measles virus generally indicates that the individual has not been infected and is susceptible to measles. However, it does not exclude the possibility of acute measles, because the infection may be in its very early stage and the patient may be still unable to synthesize measles virus specific antibodies, or the antibodies may be present in undetectable levels. It should be underlined that the test scores negative during the first weeks after infection. If clinical exposure to measles virus is suspected despite a negative or equivocal finding, but the subject has no history of measles, nor has been previously vaccinated a second sample should be collected and tested no less than one to two weeks later. A positive result for IgG antibodies to measles virus generally indicates past exposure to measles virus or previous vaccination thereby inferring immunity. A single specimen, however, can only help estimate the serological status of the individual.
Known Interfering Factors	Specimens from patients receiving preparations of mouse monoclonal antibodies for therapy or diagnosis may contain human anti-mouse antibodies (HAMA). Such specimens may interfere in a monoclonal antibody-based immunoassay and their results should be evaluated with care.
Ref. Range (Male)	N/A
Ref. Range (Female)	N/A
Ref. Range (Paed)	N/A
Turn-around Time	5 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Frequency of Testing	Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Serological assay for the detection of IgM antibodies to measles virus. This test is used to diagnose acute infection. Indicated for investigation of maculopapular rash in patients under 40 years of age or all with history of foreign travel, contact, no vaccination history or as part of an outbreak.
Sample Type/Tubes and Minimum Volumes	Serum – 5ml
Known Interfering Factors	Not stated
Reference Laboratory Address	Department of Microbiology, Old Medical School Thoresby Place Great George Street Leeds LS1 3EX
Reference Lab Website	https://www.leedsth.nhs.uk/a-z-of-services/pathology/test-and-tubes/serology/measles-igm
Contact Telephone Number	0113-392-3499
Expected Turn-around Time	5 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

MERCURY (BLOOD AND URINE)

Indication	Investigation and follow-up of suspected acute or chronic poisoning, including exposure to metallic, inorganic and organic mercury, eg, mercury found in fish.
Referral Laboratory	Specialist Laboratory Medicine Trace Metals Block 46 St James hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	EDTA & Plain Universal  
Sample Type	Whole blood & Urine
Minimum Volume	1mL
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	7 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekdays

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Post infusion monitoring. Useful in the management of lymphoblastic leukaemia, choriocarcinoma and carcinomas of the breast and testes.
Referral Laboratory	Blood Sciences Old Medical School Leeds General Infirmary Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	1mL
Special Collection Requirements	Collect sample 24 hours post dose (adults) and 48 hours post dose (children).
Additional Information	Lithium heparin or EDTA plasma is acceptable.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transpost.
Turnaround Time	Not stated *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	As and when requested.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

MITOCHONDRIAL ANTIBODIES (IAMA)

Indication	Primary Biliary Cirrhosis (PBC) Anti-mitochondrial antibodies are part of the autoantibody screen which includes gastric parietal cell antibodies, liver kidney microsomal antibodies and smooth muscle antibodies.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	Multiple anti-mitochondrial patterns are identifiable however the M2 pattern is considered pathogenic for PBC. If an unusual/atypical immunofluorescence pattern is detected immunoblotting is performed for confirmation of anti-M2 antibody.
Turnaround time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Frequency of testing	Daily (Weekdays)

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **ALS**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Packaging	Pack samples in racks. Place packed samples in Transport bags.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

MOUTH SWAB (BACTERIAL)

Indication

Oral mucosa infections

Tube/Minimum Volume

Swab with Amies transport medium

Sample Collection

The swab should be taken from the mouth

Samples should ideally be collected prior to:

Eat or drink within 2 hours

Brush their teeth within 2 hours

Any mouth rinse of disinfectant within 2 hours prior to sampling

Transport

Specimens should be transported to the laboratory as soon as possible.

Clinical Details Required

Site of sample, duration of symptoms, antimicrobial therapy

Method

Culture onto agar plates according to clinical details and local policy.

Interpretation

Significant organisms will be reported with interpretative comments where indicated. Further interpretation/clinical advice can be obtained through discussion with a microbiologist.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

Inhibitors. Overgrowth of significant pathogens by normal flora.

Turn-around Time

48 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

MRSA SCREENING

Indication

All emergency admissions, elective patients are screened for MRSA see infection control policy Section T MRSA policy for more information.

Tube / Minimum Volume

Swab with Amies transport medium

Sample Collection

Nose and groin swabs should be taken PLUS lesions, drain sites, sputum and urinary catheter samples as required. This must be taken within 12 hours of admission as part of the routine admission process or for elective screens at the time of the pre-assessment process.

Samples should ideally be sent prior to initiation of antimicrobial therapy.

Transport

Specimens should be transported to the laboratory so soon as possible.

Clinical Details Required

Pre-op, admission, no other specific details required for MRSA screening.

Method

Culture onto selective chromogenic agar plates.

Interpretation

MRSA will be reported with interpretative comments where indicated. Further interpretation/clinical advice can be obtained through discussion with a Microbiologist.

Known Interfering Factors

Inhibitors. Overgrowth of significant pathogens by normal flora.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Turn-around Time

24 hours. 4 days.

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

MUSCLE SPECIFIC TYROSINE KINASE ANTIBODIES (MUSK)

Indication	Present in 40% - 50% of patients with generalised Acetylcholine receptor seronegative Myasthenia Gravis (MG).
Referral Laboratory	Immunology Laboratory Churchill Hospital Old Road Headington Oxford OX3 7LE
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml. Plasma is acceptable but CSF not required.
Special Collection Requirements	None
Additional Information	None
Turnaround time	14 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Not stated.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **MUSK**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	NPEx
Packaging	Wrap each individual sample in absorbent paper and pack samples and NPEx Manifest in red sample bags. Place packed samples in Transport boxes and seal ready for posting.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

MYCOBACTERIA (STAIN AND CULTURE)

Test repertoire currently not available to view.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Skin

Tinea barbae, Tinea capitis, Tinea corporis, Tinea cruris, Tinea imbricate, Tinea manuum, Tinea pedis

Hair

Tinea favosa, Tinea capitis

Nail

Tinea unguium/ onychomycosis

Sample Collection

Specimens of nail, skin and hair should be collected into 'Dermapac' packages to allow small amounts to be obtained. Cut hair is not appropriate and hair samples should include scalp scrapings to maximise the recovery of live fungus.

Nail samples should include dystrophic, brittle or discoloured areas of the tissue.

Respiratory samples, pus or CSF are collected into sterile universal containers. Sputum samples should avoid the collection of saliva. Respiratory samples should be obtained as first morning sample, by physiotherapy or by bronchial aspirate. CSF samples for fungal investigation are performed as required.

Transport

Specimens should be sent in a sealed 'Dermapac' envelopes or sterile universal container.

All samples should be sent to the laboratory as soon as possible. Hair, nails and skin are stored at room temperature until processing. Other samples should be stored in the fridge until testing.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Clinical Details Required

They should contain as much information as possible, as this may aid interpretation of test results

Method

Each specimen a direct Microscopy for yeast, fungal elements and culture is performed as per local standard operating procedure.

Interpretation

Reports are sent by paper copy or electronically as required by user.

Microscopy: Reported as fungal hyphae seen or not seen

Culture Reporting: Report as Fungal cultures negative or as the isolate name.

Further interpretation/clinical advice can be obtained through discussion with a Microbiologist.

Known Interfering Factors

N/A

Turn-around Time

Report times Microscopy: Written/electronic report: up to 3 working days

Reporting times Culture: 21 – 24 days for Microscopy negative cultures,

28 days for Microscopy Positive cultures.

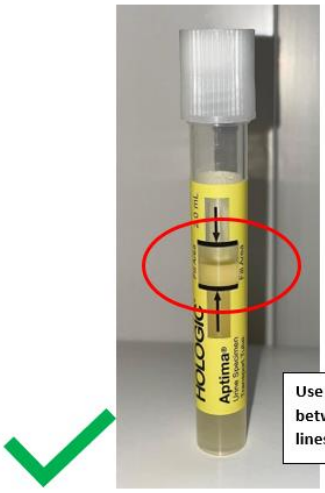
Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

MYCOPLASMA GENITALIUM PCR

Indication	The Aptima Mycoplasma genitalium assay is intended for use as an aid in the diagnosis of *M. genitalium* urogenital infections in male and female patients.
Tube / Minimum Volume	Clinician-collected and self-collected vaginal swab specimens, clinician-collected endocervical swab specimens, self-collected first-catch male and female urine specimens, clinician-collected male urethral swab specimens, and self-collected penile meatal swab specimens can be tested with the Aptima Mycoplasma genitalium assay. • Aptima Unisex Swab Specimen Collection Kit for Endocervical and Male Urethral Swab Specimens • Aptima Urine Collection Kit for Male and Female Urine Specimens (See images below) • Aptima Multitest Swab Specimen Collection Kit for vaginal swab specimens and penile meatal swab specimens  Use pipette to fill urine between the two black lines on the tube.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	
Sample Collection	Refer to the appropriate specimen collection kit package insert for specific collection instructions.
Transport	Sample should be transported to the laboratory without delay.
Clinical Details Required	Relevant clinical details should be included on the request form.
Method	The Aptima Mycoplasma genitalium assay is an *in vitro* nucleic acid amplification test (NAAT) for the qualitative detection of ribosomal RNA (rRNA) from *Mycoplasma genitalium* on the fully automated Panther system. It is intended for use as an aid in the diagnosis of *M. genitalium* urogenital infections in male and female patients.
Interpretation	M genitalium negative - No M genitalium rRNA detected. M. genitalium positive – M. genitalium rRNA detected. Invalid - Invalid result, a new specimen should be collected. Reliable results are dependent on adequate specimen collection, transport, storage, and processing. Because the transport system used for this assay does not permit microscopic assessment of specimen adequacy, training of clinicians in

	proper specimen collection techniques is necessary.
Known Interfering Factors	Therapeutic failure or success cannot be determined with the Aptima Mycoplasma genitalium assay since nucleic acid may persist following appropriate antimicrobial therapy. Results from the Aptima Mycoplasma genitalium assay should be interpreted in conjunction with other clinical data available to the clinician. Performance using any female specimen types has not been determined in pregnant women. Performance of the assay has not been evaluated in women less than 19 years of age.
Turn-around Time	3-10 days
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

MYCOBACTERIA MICROSCOPY AND CULTURE

Indication

Suspected Mycobacterial infection.

Sample collection and Minimal Volume

Take whenever possible before anti-tuberculous treatment is started.

- Urine: volume of 5ml early morning specimen in a sterile leak proof universal container (Do not use red top container with boric acid. Use white lidded universal container). Three early morning samples on consecutive days advised.
- Bronchial washing/ broncho-alveolar washing: 5ml in a sterile leak proof container (universal container).
- Sputum: volume of 5ml sputum in a sterile leak proof container less than 1 day old for three consecutive days, approximately 8 to 24 hours apart. **Note**: If looking to distinguish NTM pulmonary disease from occasional presence of NTM in the tracheobronchial tract, at least **3 respiratory samples** are required, **over an interval of at least a week**. The rationale for this is a prolonged interval ensures that repeat positive cultures are unlikely to reflect a transient contamination of the tracheobronchial system after a single environmental exposure.
- Gastric washings: volume of 5ml early morning sample on 3 consecutive days
- Sterile Body fluids (CSF, Pleural fluid etc.): Collect aseptically as much sample as possible into a sterile container. Note test sensitivity is better with pleural and pericardial tissue as compared to fluid, with a negative fluid result not necessarily ruling out infection at that body site.
- Skin, tissue or post-mortem specimens: Insert sample in a sterile leak proof container and add sterile distilled water to prevent desiccation. A caseous portion should be selected if possible.
- Pus, or pus swabs, Laryngeal swabs (charcoal swabs are not accepted): Pus is the sample type of choice. Use sterile leak proof container for pus. Swabs are less preferable, if microscopy is required, **two** pus swabs should be sent.
- Bone marrow and blood samples: Use orange topped Li-Heparin bottle. The optimum volume for testing is 10 ml which may necessitate the use of 2 or 3 bottles.

Transport

Transport in a CE marked sterile leak proof container in a sealed plastic bag the same day as collection. If not possible, specimens other than blood should be refrigerated. The blood must be kept at room temperature. Do not use the hospital pod system to transport samples.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Method

- Auramine microscopy
- Culture and incubation for 6 weeks (continuous monitored incubation of liquid media and manual analysis of solid slope), sometimes extend to 8-12 weeks depends on specimen and clinical history.
- TB PCR may not be as sensitive as liquid culture so samples must be verified and approved by clinical staff before referral.

Turnaround Time

Microscopy:

Inpatients AFB smear reported within 24hrs, seven days a week.
GP samples and outpatients: By the next working day after receiving the sample.

Culture:

Positives - Preliminary lab report issued within 24 hours. Clinically liaised by the on-call microbiologist on the same day via email/EPR message centre. Isolate will be referred to reference lab for Final ID and sensitivity if there is no contamination.

Contaminated culture: Repeat if clinically indicated with fresh specimen.

Negatives – Report issued after 6 weeks and sometimes after extended incubation to 8- 12 weeks.

Known Interfering Factors

Antituberculosis treatment and other antimicrobials may have significant anti-mycobacterial activity, notably the fluoroquinolones such as ciprofloxacin, levofloxacin or moxifloxacin, and the macrolides such as clarithromycin or azithromycin.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

MYELIN ASSOCIATED GLYCOPROTEIN ANTIBODIES (MAG)

Indication	Peripheral neuropathy, IgM paraproteinaemia. MAG antibodies contributes directly to the pathogenesis of peripheral neuropathies. Useful for diagnosis and monitoring of therapy.
Referral Laboratory	Immunology Laboratory Churchill Hospital Old Road Headington Oxford OX3 7LE
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml. Plasma is acceptable but CSF not required.
Special Collection Requirements	None
Additional Information	None
Turnaround Time	14 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Not stated.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **MAG**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	NPEx
Packaging	Wrap each individual sample in absorbent paper and pack samples and NPEx Manifest in red sample bags. Place packed samples in Transport boxes and seal ready for posting.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

MYOSITIS ASSOCIATED ANTIBODIES (MSA)

Indication	Dermatomyositis, Polymyositis, idiopathic myositis, anti-synthetase syndrome, overlapping syndrome. The assay detects autoantibodies to the following different myositis associated antigens: Jo-1, Mi-2alpha and Mi-2beta, TIF1gamma, MDA5, XNP2, SAE (SAE1/2), Ku, PM-Scl100, PM-Scl75, SRP, PL-7, PL-12, EJ, OJ and Ro-52.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	None
Turnaround time	14 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Fortnightly (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **MSA**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

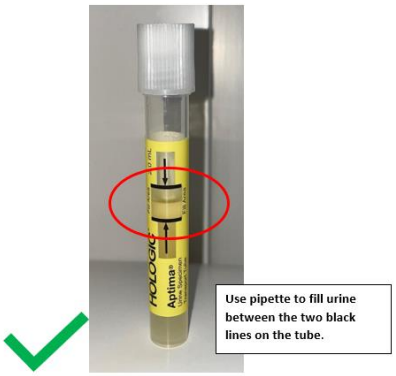
Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx
Packaging	Pack samples in racks. Place packed samples in Transport bags

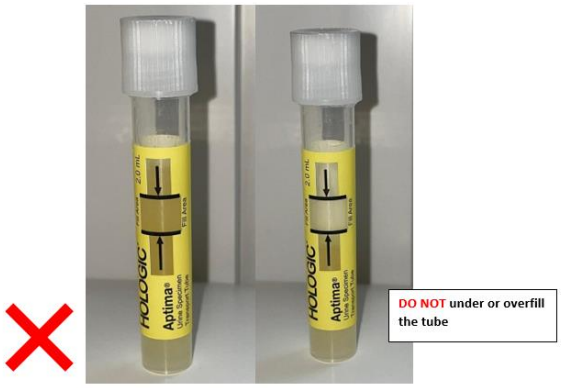
The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

NEISSERIA GONORRHOEA PCR

Indication	For direct, qualitative detection of Neisseria gonorrhoeae RNA from clinician-collected female endocervical, vaginal, male urethral specimens, and both male and female throat and rectal swab specimens; patient-collected vaginal, both male and female throat and rectal swab specimens and female urine specimens. The assay is indicated for use with asymptomatic and symptomatic individuals to aid in the diagnosis of gonococcal urogenital disease.
Tube / Minimum Volume	Aptima Urine collection kit for male and female urine specimens or plain urine in sterile universal. If using Aptima urine collection kits the urine liquid level must fall between the two black lines on the tube. Aptima Unisex Swab Specimen Collection Kit for Endocervical and Male Urethral Swab Specimens Aptima Multitest Swab Specimen Collection Kit 

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	
Sample Collection	Urine samples should be collected Aptima Urine collection tubes or appropriate preservative free containers. Swabs should be collected using the applicable collection system dependent on body site.
Transport	Sample should be transported to the laboratory without delay. Urine specimens which are not in Aptima Urine collection kit tubes must reach the laboratory within a maximum of 24 hours.
Clinical Details Required	Relevant clinical details should be included on the request form.
Method	The Aptima Combo assay is a target amplification nucleic acid probe test that utilizes target capture for qualitative detection and differentiation of ribosomal RNA (rRNA) from Chlamydia trachomatis (CT and/or Neisseria gonorrhoeae (GC) to aid in the diagnosis of chlamydial and/or gonococcal disease using Panther system.
Interpretation	GC positive – Positive for GC rRNA GC negative – presumed negative for GC rRNA GC Equivocal – Indeterminate, a new specimen should be collected. As true for all non-culture methods, a

	positive specimen obtained from a patient after therapeutic treatment cannot be interpreted as indicating presence of viable GC. As true for all urine test methods, a negative urine result for a female patient who is clinically suspected of having a gonococcal infection does not rule out the presence of GC in the urogenital tract. A negative result for GC does not preclude presence of a GC infection because results are dependent on adequate specimen collection, absence of inhibitors, and the presence of sufficient rRNA to be detected.
Known Interfering Factors	The Aptima Combo 2 Assay has not been validated for use with specimens collected by patients at home. The performance of Aptima Combo 2 assay has not been evaluated in patients less than 14 years of age. The Aptima Combo 2 Assay is not intended for the evaluation of suspected sexual abuse or for other medico-legal indications. Additional testing is recommended in any circumstance when false positive or false negative results could lead to adverse medical, social, or psychological consequences. Therapeutic success or failure cannot be determined with the assay since nucleic acids from GC may persist following antimicrobial therapy. The effects of other specimen collection variables, use of tampons, douching, have not been determined.
Ref. Range (Male)	N/A
Ref. Range (Female)	N/A

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Ref. Range (Paed)	N/A
Turn-around Time	3 days for negatives 4 days for positives
Frequency of Testing	Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

NEONATAL SCREENING

Indication

Neonatal infection

Tube/Minimum Volume

Swab with Amies transport medium

Sample Collection

Placental swabs, umbilical swabs, other skin swabs

Samples should ideally be collected prior to initiation of antimicrobial therapy.

Transport

Specimens should be transported to the laboratory so soon as possible.

Clinical Details Required

Samples with the following clinical details will be processed:-
Possible sepsis, Maternal pyrexia in labour, Unwell baby, Meconium stained/offensive liquor, Chorioamnionitis, Specific skin lesions and concern about infection, Intrauterine death.

Method

Culture onto agar plates, according to clinical details and local policy.

Interpretation

Significant organisms will be reported with interpretative comments where indicated. Further interpretation/clinical advice can be obtained through discussion with a microbiologist.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Turn-around Time

48 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

NEURONAL / PARANEOPLASTIC ANTIBODIES

Indication	Neuronal illness associated with remote effects of a malignant neoplasm. Tests within the profile are antibodies to Hu (ANNA1), Yo (PCA-1), Ri (ANNA2), Ma (Ma1), Ta (Ma2), GAD, CV2/CRMP5, Amphiphysin, SOX1, Tr, Zic4, Anti-recoverin Ab.
Referral Laboratory	Neuroimmunology The Medical School University of Birmingham Edgbaston Birmingham B15 2TT
Specimen Tube Required	Gel Tube  (Universal for CSF)
Sample Type/Minimum volume	Serum - 5ml or CSF-1ml
Special Collection Requirements	None
Additional Information	The presence of Paraneoplastic antibodies are confirmed by Western Blot.
Turnaround time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Weekly (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **NEUR (serum), CSNEUR (CSF)**
Preparation	Centrifuge Primary sample. Do not centrifuge CSF sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	Sample to be sent with Pathology request form.
Packaging	Wrap each individual sample in absorbent paper and pack samples and request forms in red sample bags. Place packed samples in Transport boxes and seal ready for posting.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

NEURONE SPECIFIC ENOLASE – NSE

Indication	Monitoring and diagnosis of neuroendocrine tumours. NSE has been found in tumours of neuroblastoma and small-cell carcinomas of the lung, APUD and melanoma.
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	2ml
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	3 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

NMDA ANTIBODIES

Indication	NMDA receptor antibodies associated with limbic encephalitis, systemic lupus erythematosus (SLE), ataxia and epilepsia partialis continua. Also found in patients presenting with psychiatric symptoms, amnesia, seizures, dyskinesias, autonomic dysfunction and loss of consciousness.
Referral Laboratory	Immunology Laboratory Churchill Hospital Old Road Headington Oxford OX3 7LE
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml. Ideally paired with a CSF sample. Plasma is acceptable.
Special Collection Requirements	None
Additional Information	None
Turnaround time	7 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Not stated.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **INMDA**
Preparation	Centrifuge Primary sample. Do NOT centrifuge CSF.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	NPEx
Packaging	Wrap each individual sample in absorbent paper and pack samples and NPEx Manifest in red sample bags. Place packed samples in Transport boxes and seal ready for posting.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

NORMALLY STERILE FLUIDS

Indication

Suspected infection of normally sterile sites, to identify causative organisms. Fluids include:

Amniotic fluid, pericardial fluid, peritoneal fluid (ascites), pleural fluid, synovial (joint) fluid, bursa fluid

Tube / Minimum Volume

CE marked sterile leak proof container in sealed plastic bag, ideally minimum volume of 1mL.

Sample Collection

Samples of fluid rather than swabs of the fluids are the preferred specimen type to facilitate comprehensive investigation.

Ascitic fluid can be inoculated into blood culture bottles at the bedside, a separate sample should also be sent for a neutrophil count.

Transport

Specimens should be transported and processed as soon as possible.

Clinical Details Required

Site of fluid, duration of symptoms, antimicrobial therapy.

Specifically state if patient is immunocompromised or if fungal infection is suspected.

Method

A representative portion of the specimen is Gram stained (following centrifugation to concentrate any cells, crystals or organisms). Agar plates/enrichment broth is then inoculated and cultured according to local policy. Any cultured organisms will be identified and susceptibility testing performd in line with local policy.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

Microscopy

Joint fluids – microscopy for crystals is performed for the diagnosis of gout (uric acid crystals) or Pseudogout (calcium pyrophosphate crystals)

Ascitic fluids – White cell counts are carried out only on Ascitic fluids routinely for the differential diagnosis of SBP

Culture

The significance of any bacterial growth is dependent on the method of collection, the site sampled and the organism identified. Interpretative comments may be provided from the laboratory. Discuss with microbiology when required.

Known Interfering Factors

Inhibitors. Temperature of incubation. Contamination of specimen.

Turn-around Time

5-7 days (to allow for full enrichment culture). Results may be reported sooner.

Frequency of Testing

Daily. Urgent Gram stains can be performed - discuss with the laboratory first. Further details of urgent processing can be found here: node://1845

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

NOROVIRUS (VIRAL ENTERIC PCR TESTING)

Indication

Suspected viral gastroenteritis.

Diarrhoea and vomiting and can include abdominal pain, nausea, pyrexia and headache and last for 2-3 days.

Tube / Minimum Volume

Blue top container with scoop.

Sample collected from faeces that has been passed into a clean, dry, disposable bedpan or similar using the scoop attached to the lid of the collection pot. 1-2g of stool is sufficient (1 full scoop full). If stool is liquid, 1-2ml is sufficient. Care must be taken to ensure the container lid is tightly sealed.

Transport

Transport to lab within 24 hrs of collection. If delay anticipated can be placed in refrigerator 2-8ºC for 5 days. Protect sample from excessive heat.

Clinical Details Required

Symptoms. Date of onset. Outbreak investigation

Method

PCR on BD-MAX analyser: detects nucleic acids from

- Norovirus GI & GII
- Rotavirus A
- Adenovirus F40/41
- Sapovirus (genogroups I, II, IV, V)
- Human Astrovirus (hAstro)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

POSITIVE: Suggestive of infection with one of the above viruses. Review result in clinical context as result does not necessarily indicate the presence of viable organisms. It does however indicate the presence of target DNA/RNA.

NEGATIVE- does not exclude viral gastroenteritis as false negative results may occur due to loss of nucleic acid from inadequate collection, transport or storage of specimens.

Known interfering factors

Not stated

Turn-around Time

24 - 48hrs

Frequency of Testing

Monday-Friday: Twice daily (10:00hrs and 14:00hrs).

Weekends: 12:00hrs

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

NOSE SWAB (BACTERIAL)

Indication

Nasal carriage of Staphylococcus aureus or Beta-haemolytic Streptococci

Tube/Minimum Volume

Swab with Amies transport medium.

Sample Collection

The swab should be taken from the nose.

Insert the swab into the anterior nare (nostril) sweep upwards towards the top of the nare. Repeat the procedure with the same swab in the other nare.

Samples should ideally be collected prior to initiation of antimicrobial therapy.

Transport

Specimens should be transported to the laboratory so soon as possible.

Clinical Details Required

Nose swabs may be used to investigate carriage of Lancefield group A Streptococcus and Staphylococcus aureus. Nose swabs are not a suitable sample type for the identification of sinusitis and should only be used for carriage detection.

Method

Culture onto agar plates according to clinical details and local policy.

Interpretation

Significant organisms will be reported with interpretative comments where indicated. Further interpretation/clinical advice can be obtained through discussion with a microbiologist.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

Inhibitors. Overgrowth of significant pathogens by normal flora.

Turn-around Time

48 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Used for monitoring therapy**.** Used in the differential diagnosis of disorders of puberty; infertility and in monitoring HRT.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Competitive Immunoassay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Reference Ranges

N/A

Turn-around Time

Urgent Samples – 72 hours

Routine Inpatients – 72 hours

OP/GP – 72 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

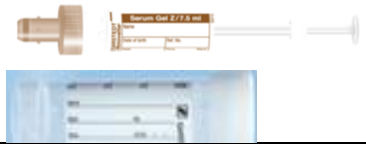
Calderdale and Huddersfield NHS
NHS Foundation Trust

OLANZAPINE

Indication	Monitoring therapy
Referral Laboratory	Sandwell & West Birmingham Hospitals NHS Trust Department of Clinical Chemistry City Hospital Dudley Road Birmingham B18 7QH
Specimen Tube Required	EDTA 
Sample Type	Whole blood
Minimum Volume	0.5mL
Special Collection Requirements	Samples should be collected immediately before the next dose, i.e. pre-dose (trough), or a minimum 12 post-dose.
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post.
Turnaround Time	5 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

OLIGOCLONAL BANDS

Indication	Detection of localised neuronal synthesis of immunoglobulins. Most useful in diagnosis of multiple sclerosis.
Referral Laboratory	Blood Sciences Clinical Immunology Service University of Birmingham Vincent Drive Edgbaston Birmingham B15 2TT
Specimen Tube Required	Gel Tube and Universal container 
Sample Type	Serum and CSF
Minimum Volume	1-2 mL
Special Collection Requirements	Paired samples of CSF and serum are essential for this assay
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post.
Turnaround Time	14 days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Not stated

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication	Urinary organic acids are used in the investigation and follow up of a number of inherited metabolic diseases and where Inborn error of metabolism is suspected.
Referral Laboratory	Specialist Laboratory Medicine Biochemical Genetics Block 46 St James hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Plain Universal 
Sample Type	Urine
Minimum Volume	0.5mL
Special Collection Requirements	Boric acid tubes are NOT acceptable – This affects GC column
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	18 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

OSMOLALITY / OSMOLARITY

Indication

Useful in the diagnosis of diabetes insipidus and inappropriate ADH secretion. May be collected as part of a water deprivation test or DDAVP test (See intranet for protocols).

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

White Top 25mL Universal (Urine) – Minimum 1mL

8.5ml Urine monovette Tubes – minimum 8.5ml – Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Please contact laboratory in advance if being performed as part of a Water Deprivation Test.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Freezing point depression

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

n/a

Reference Ranges

Serum Osmolality: 275 – 295 mosmol/L

Urine Osmolality: Reference interval 50-1200 mOsmol/Kg dependant on fluid intake. A
measured urine Osmolality greater than 750 mOsmol/Kg excludes DI.

Turn-around Time

Urgent Samples – 2 hours

Routine Inpatients – 2 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

OVARIAN ANTIBODIES

Indication	Found in 15-50% of patients with premature ovarian failure.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	Ovarian antibodies form part of the group of steroid-producing cell antibodies. Antibodies to ovary (theca interna/granulosa) are detected with multiblock slides that also have adrenal and testis tissue. Patients may also be positive for adrenal antibodies due to cross-reactive steroid cell antibodies.
Turnaround time	10 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Weekly (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **IOV**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	Sample to be sent with Pathology request form
Packaging	Pack samples and request forms in red sample bags. All samples for the same test can be packed in 1 bag. Place packed samples in Transport bags.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

OXYSTEROL Indication	Investigation for Niemann-Pick C disease.
Referral Laboratory	Willink Biochemical Genetics Laboratory Genomic Diagnostic Laboratories Metabolites Section 6th Floor, Pod 1 St Mary's Hospital Oxford Road Manchester M13 9WL
Specimen Tube Required	EDTA 
Sample Type	Plasma
Minimum Volume	2 mL
Special Collection Requirements	Separate and freeze minimum of 2ml of EDTA plasma the same day sample is taken.
Additional Information	None
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport on Dry Ice via Courier.
Turnaround Time	4 working weeks - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	As and when required

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

P3P (PROCOLLAGEN III PEPTIDE)

P3PIndication	Type III procollagen peptide is a serum marker of collagen turnover and is used to assess hepatic fibrosis in patients on long term methotrexate.
Referral Laboratory	Division of Laboratory Medicine Biochemistry Manchester Royal Infirmary Oxford Road Manchester M13 9WL
Specimen Tube Required	Plain Tube 
Sample Type	Serum
Minimum Volume	0.5mL
Special Collection Requirements	None
Additional Information	Serum is stable at 4◦C for 10 days. Sample must be kept at -20◦C for long term storage.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transpost.
Turnaround Time	21 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	2-3 times a week.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

(PANCREATIC) ISLET CELL ANTIBODIES

Indication	Present in up to 86% of patients with Insulin dependent diabetes mellitus (IDDM) at presentation. Increased prevalence in relatives of patients with IDDM.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	None
Turnaround time	10 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **ICA**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx
Packaging	Pack samples in racks. Place packed samples in Transport bags

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PARACETAMOL / ACETAMINOPHEN

Indication

Used to assess likelihood of toxicity in overdose cases and whether treatment with N-acetylcysteine is warranted.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Must be collected a minimum of 4 hours post ingestion.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Enzymatic

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

N-acetyl cysteine interferes with the measurement of paracetamol causing falsely low values to be reported.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

See BNF for chart showing treatment line above which intravenous infusion of N-acetylcysteine is recommended.

Turn-around Time

Urgent Samples – 1 Hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PARATHYROID ANTIBODIES

Referral Laboratory

Protein Reference Unit
Immunology
PO Box 894
Sheffield
S5 7YT

Accreditation status - Accredited (checked September 2021)

Specimen Tube Required

Gel Tube

Specimen Type/Minimum volume

Serum – 5ml

Special Requirements

None

Method of Transportation to Referral Laboratory

Transport at ambient temperature

Turn-around Time

5 Days - from receipt of sample at referral laboratory.

It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.

Frequency of Testing

As required.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Autoimmune hypoparathyroidism. Autoimmune hypoparathyroidism can be seen in other autoimmune endocrinopathies such as autoimmune polyendocrinopathy type 1

Unique Identifier and Version Number

IP BS-37. Version 2.0

For further information see
https://www.immqas.org.uk/pru.asp?S=676721612&C=1252&AID=51

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Used in the assessment of hypercalcaemia and hypocalcaemia.

Tube/Minimum Volume

Blue KEDTA (Plasma) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

PTH Samples are stable up to 25 hours at room temperature when capped.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Two site sandwich immunoassay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

No significant interferences have been observed against Haemolytic, Icteric or Lipaemic interferents.

Reference Ranges

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

1.95-8.49pmol/L

Turn-around Time

Urgent Samples – 24 Hours

Routine Inpatients – 24 Hours

OP/GP – 24 Hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	PCR detection of Parechovirus. Virus can cause gastrointestinal and respiratory infection in infants. Also implicated in myocarditis and encephalitis Tested in conjunction with enterovirus. Assay does not detect Parecho 22 and 23.
Sample Type/Tubes and Minimum Volumes	Samples should be sent from the suspected site of infection. Viral Throat swab - Pharyngitis Non vesicular rash CSF - meningoencephalitis Pericardial fluid - Myocarditis Tissue - internal organ infection Faeces - Meningoencephalitis, Myocarditis, Rash,myalgic encephalomyelitis Eye Swab - conjunctivitis Mouth swab - mouth ulcer Skin or vesicle swab - rash EDTA sample - PUO <3 month old
Known Interfering Factors	Not stated
Reference Laboratory Address	Department of Microbiology, Old Medical School Thoresby Place Great George Street Leeds LS1 3EX
Reference Lab Website	Parechovirus PCR - Leeds Teaching Hospitals NHS Trust (leedsth.nhs.uk)
Contact Telephone Number	0113-392-23499

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	This qualitative PCR assay is used for the detection of Parvovirus B19, which can cause the childhood infection slapped cheek (or fifth disease), as well as more serious aplastic crisis, persistent anaemia, myocarditis, hepatitis and, rarely, encephalitis. Infection in pregnancy can result in hydrops fetalis. Parvovirus B19 DNA can persist for several months following infection, meaning results from this assay must be interpreted with caution. Serological testing can be of assistance in such cases.
Sample Type/Tubes and Minimum Volumes	EDTA 5mL
Known Interfering Factors	None stated.
Reference Laboratory Address	Department of Microbiology Old Medical School Thoresby Place Great George Street Leeds LS1 3EX
Reference Lab Website	https://www.leedsth.nhs.uk/a-z-of-services/pathology/test-and-tubes/virology/parvovirus-pcr
Contact Telephone Number	0113-392-23499
Expected Turn-around Time	5 days
Unique Identifier and Version Number	IP 320 158 Version 2.0

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Qualitative determination of specific IgG antibodies to parvovirus B19 in human serum or plasma samples to identify the parvovirus B19 antibody status in individuals who may be at risk of infection from, or who have been infected with parvovirus B19.
Tube / Minimum Volume	Serum gel – 5ml EDTA – 5ml
Sample Collection	As per CHFT venepuncture policy
Transport	Samples should be transported as soon as possible to the Microbiology laboratory in line with the transport policy
Clinical Details Required	
Method	The method for qualitative determination of specific IgG to parvovirus B19 is an indirect sandwich chemiluminescence immunoassay (CLIA).
Interpretation	Samples with parvovirus B19 IgG levels below an index value of 0.9 should be graded negative. A negative result for IgG antibodies to parvovirus B19 generally indicates that the patient has not been infected but does not exclude the possibility of acute parvovirus B19 infection, because the infection may be in its very early stage and the patient may be still unable to synthesize parvovirus B19 specific antibodies, or the antibodies may be present in undetectable levels. It should be underlined that the test scores negative during the first weeks after infection. If clinical exposure to parvovirus B19 is suspected despite a negative or equivocal finding, a second sample should be collected and tested for IgM and IgG during the course of infection.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	Samples with parvovirus B19 IgG levels ranging between an index value of 0.9 and 1.1 should be graded equivocal. Equivocal samples must be retested in order to confirm the initial result. Samples which are positive at the second test should be considered positive. Samples which are negative at the second test should be considered negative. A second sample should be collected and tested no less than one week later when the result is repeatedly equivocal. Samples with parvovirus B19 IgG levels equal to or above an index value of 1.1 should be graded positive. A positive result for IgG antibodies to parvovirus B19 generally indicates a previous infection thereby inferring immunity.
Known Interfering Factors	Bacterial contamination or heat inactivation of the specimens may affect the test results. Specimens from patients receiving preparations of mouse monoclonal antibodies for therapy or diagnosis may contain human anti-mouse antibodies (HAMA). Such specimens may interfere in a monoclonal antibody-based immunoassay and their results should be evaluated with care.
Ref. Range (Male)	N/A
Ref. Range (Female)	N/A
Ref. Range (Paed)	N/A
Turn-around Time	5 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

BORDETELLA PERTUSSIS SEROLOGY

Indication

Diagnosis of suspected whooping cough (Bordetella pertussis infection). Serology only useful if patient has had cough for >2 weeks.

Sample type/tubes and minimum volumes

Serum gel

node://28903

Clinical Details Required

Date of onset of symptoms

Timing of Sample Collection

Serology should only be sent if cough has been present for >2 weeks.

Interpretation

The test measures antibodies to pertussis toxin (PT IgG). A level of PT IgG >70 IU/ml is considered evidence of recent infection (in the absence of vaccination within the past year).

Known Interfering Factors

Recent vaccination within the past year - results in this setting should be interpreted with caution.

Reference Laboratory Address

Bacterial Reference Department
Public Health England
61 Colindale Avenue,
London
NW9 5EQ

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Reference Lab Website

https://www.gov.uk/government/collections/bacteriology-reference-department-brd

Contact Telephone Number

tel:020 8327 7887

Expected Turn-around Time

14 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	PCR testing on CSF or whole blood (EDTA ONLY) for patients with suspected bacterial meningitis and/or septicaemia.
Sample Type/Tubes and Minimum Volumes	Whole blood (EDTA) 4.8mL CSF
Transport	Transport to laboratory as soon as possible
Known Interfering Factors	DNA from pneumococcal carriage can be detected in the blood samples of children under the age of 2 years. Consequently, clinical interpretation of the molecular results is recommended for all positive pneumococcal reports among children less than 2 years of age. A comment is made therefore on all MRU pneumococcal PCR positive reports for children. It is recommended that samples for PCR are collected less than 48 hours following disease onset, admission to hospital or administration of antibiotics. The likelihood of a positive PCR result decreases with time following antimicrobial administration. Blood samples for PCR taken more than 48 hours after commencement of antibiotic therapy are unlikely to remain positive, however, CSF may remain positive for longer periods.
Reference Laboratory Address	Meningococcal Reference Unit UK Health Security Agency Manchester Medical Microbiology Partnership PO Box 209 Clinical Sciences Building 2 Manchester Royal Infirmary Oxford Road Manchester
Reference Lab Website	https://mft.nhs.uk/the-trust/other-departments/laboratory-medicine/manchester-medical-microbiology-partnership/opening-hours-clinical-advice-and-results-line/phe-meningococcal-reference-unit/
Contact telephone number	(0161) 276 8788
Expected Turn-around Time	3 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PNEUMOCOCCAL URINARY ANTIGEN

Indication

Severe Community Acquired Pneumonia (CURB ≥ 3)

Tube / Minimum Volume

WHITE top or RED top (boric acid) sterile container can be used- 5-10ml

node://28963

Sample Collection

Collect urine in clean/sterile container and transfer to sterile container

Transport

Transport to laboratory as soon as possible

Clinical Details Required

CURB score

Method

The Alere™ BinaxNOW™ Streptococcus pneumoniae Antigen Card (Alere BinaxNOW Streptococcus pneumoniae) is an in vitro rapid immunochromatographic (ICT) assay for the detection of Streptococcus pneumoniae (S. pneumoniae) antigen in the urine of patients with pneumonia and in the cerebral spinal fluid (CSF) of patients with meningitis. It is intended, in conjunction with culture and other methods, to aid in the diagnosis of both pneumococcal pneumonia and pneumococcal meningitis.

Interpretation

NEGATIVE – pneumococcal urinary antigen not detected. Does not exclude pneumococcal infection.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

POSITIVE – pneumococcal urinary antigen detected. Suggestive of pneumococcal infection. Consideration should be given to narrowing the spectrum of antimicrobial therapy (discuss with microbiology if required).

Known Interfering Factors

A negative Alere BinaxNOW Streptococcus pneumoniae result does not exclude infection with S. pneumoniae. Therefore, the results of this test as well as culture results, serology or other antigen detection methods should be used in conjunction with clinical findings to make an accurate diagnosis.

Alere BinaxNOW Streptococcus pneumoniae has not been evaluated on patients taking antibiotics for greater than 24 hours or on patients who have recently completed an antibiotic regimen. The effects of over-the-counter drugs have not been determined on persons with pneumococcal meningitis.

Streptococcus pneumoniae vaccine may cause false positive results in urine with Alere BinaxNOW Streptococcus pneumoniae in the 48 hours following vaccination. The effect of vaccination has not been determined on persons with pneumococcal meningitis. Hence, it is recommended that Alere BinaxNOW Streptococcus pneumoniae not be administered within 5 days of receiving the S. pneumoniae vaccine.

The accuracy of Alere BinaxNOW Streptococcus pneumoniae in urine has not been proven in young children.

Turn-around Time

1 day

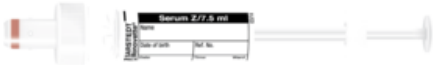
Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PHENOBARBITONE (PHENOBARBITAL)

Indication	Therapeutic drug monitoring.
Referral Laboratory	Blood Sciences Department Old Medical School Leeds General Infirmary Leeds LS1 3EX
Specimen Tube Required	Plain Tube 
Sample Type	Serum
Minimum Volume	1mL
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	24 hours - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekdays

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

PHENYLALANINE

Indication	Monitoring test for Phenylketonuria (PKU)
Referral Laboratory	Specialist Laboratory Medicine Biochemical Genetics Block 46 St James hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Gutherie Blood Spot Card 
Sample Type	Blood Spot
Minimum Volume	Ideally 2 full blood spots to be present on card.
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Store at room temperature prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport.
Turnaround Time	7 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	As and when required

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

PHENYTOIN / EPANUTIN

Indication

Used in the therapeutic monitoring of patients taking phenytoin and in possible overdose situations.

Tube/Minimum Volume

White Plain (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Collect trough sample, immediately before the next dose. Avoid Gel tubes.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Enzyme multiplied Immunoassay Technique EMIT

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

Reference Ranges

10 – 20 mg/L

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

Unique Identifier and Version Number

LI 820 132 Phenytoin 8.1

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PHOSPHATE / INORGANIC PHOSPHATE

Indication

Phosphate is elevated in acute renal failure associated with secondary hyperparathyroidism and it may also be measured when abnormalities in Vitamin D or PTH levels are suspected.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Daly and Ertinghausen phosphomolybdate endpoint

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

Age	Reference Range
Newborn– 4 weeks	1.3-2.6 mmol/L
4 Weeks – 1 Year	1.3-2.4 mmol/L
1 Year-16 Years	0.9-1.8 mmol/L
Adult	0.8-1.5 mmol/L

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PHYTANIC ACID

Indication	Monitoring of diagnosed Refsum's disease.
Referral Laboratory	Department of Clinical Chemistry Sheffield Children's Hospital Western Bank Sheffield S10 2TH
Specimen Tube Required	Lithium Heparin Tube 
Sample Type	Plasma
Minimum Volume	0.5ml
Special Collection Requirements	None
Additional Information	Part of the Very Long Chain Fatty Acids profile
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	3-6 weeks - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PLACENTAL ALKALINE PHOSPHATASE (PLAP)

Indication	Diagnosis and monitoring of germ cell tumours (seminomas & dysgerminomas, not teratomas) and pineal tumours.
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	2ml
Special Collection Requirements	This test must be approved by Duty Biochemist prior to referral.
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	5 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

PLASMA AMINO ACIDS

Indication	Plasma amino acids are analysed predominantly for diagnosis and monitoring of inborn errors of amino acid metabolism.
Referral Laboratory	Specialist Laboratory Medicine Biochemical Genetics Block 46 St James hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Lithium Heparin Tube 
Sample Type	Plasma
Minimum Volume	0.2mL
Special Collection Requirements	Sample must be separated immediately on receipt.
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	10 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PLASMA METADRENALINE (METANEPHRINES) PROFILE (PMETS)

Indication	To help diagnose or rule out a phaeochromocytoma.
Referral Laboratory	Department of Blood Sciences Freeman Hospital Freeman Road High Heaton Newcastle upon Tyne NE7 7DN
Specimen Tube Required	EDTA 
Sample Type	Plasma
Minimum Volume	1 mL
Special Collection Requirements	Sample must be sent to laboratory on ICE within 1 hour of collection. Samples received after 1 hour from collection are not suitable for analysis.
Additional Information	Sample requires freezing within an hour of collection.
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport on dry ice via courier.
Turnaround Time	2 weeks - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	As and when required

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PLASMA PORPHYRINS

Indication	Porphyria is suspected as a cause of photosensitivity.
Referral Laboratory	Department of Medical Biochemistry and Immunology University Hospital of Wales Heath Park Cardiff CF14 4XW
Specimen Tube Required	EDTA 
Sample Type	Whole blood
Minimum Volume	5-10 mL
Special Collection Requirements	Samples must be protected from light and received in the lab within 6 hours of collection.
Additional Information	Samples exposed to light for greater than 6 hours should not be assayed.
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature 1st Class Post.
Turnaround Time	10 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	As and when required

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PLATELET FUNCTION TESTS

Indication

History of mucosal bleeding, menorrhagia or epistaxes.
Prolonged bleeding after minor surgery, tonsillectomy or tooth extraction.

Tube/Minimum Volume

Blood
3 ml Sodium citrate (green top).
8 to 10 sample tubes required

Sample Collection

The laboratory MUST be contacted BEFORE samples are collected. Testing is performed at the Leeds Teaching Hospitals and must be completed within four hours of collection.

A clean venepuncture is required, with the minimum of venous stasis. Tubes must be filled to the line.

Transport

Transport to Haematology lab early morning so Trust transport/taxi can get the samples to Leeds before lunchtime. Sent to St James's University Hospital, Beckett Street, Leeds, West Yorkshire LS9 7TF.

Method

Performed at St. James's Hospital, Leeds.

Interpretation

Results are reported as Normal, Inconclusive or Suggestive of a Platelet Function Disorder.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

Several drugs can affect results e.g. aspirin and aspirin containing compounds (salicylates), NSAIDS, Tricyclic antidepressants, antihistamines and some antibiotics. Also (at high concentrations) alcohol, caffeine and certain herbs.

Reference Ranges

Ranges provided on report.

Critical phone limits

N/A

Turn-around Time

Same day testing.

Frequency of Testing

By appointment with Haematology.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	PCR testing on CSF or whole blood (EDTA ONLY) for patients with suspected bacterial meningitis and/or septicaemia.
Sample Type/Tubes and Minimum Volumes	Whole blood (EDTA) CSF
Known Interfering Factors	DNA from pneumococcal carriage can be detected in the blood samples of children under the age of 2 years. Consequently, clinical interpretation of the molecular results is recommended for all positive pneumococcal reports among children less than 2 years of age. A comment is made therefore on all MRU pneumococcal PCR positive reports for children. It is recommended that samples for PCR are collected less than 48 hours following disease onset, admission to hospital or administration of antibiotics. The likelihood of a positive PCR result decreases with time following antimicrobial administration. Blood samples for PCR taken more than 48 hours after commencement of antibiotic therapy are unlikely to remain positive, however, CSF may remain positive for longer periods.
Reference Laboratory Address	Meningococcal Reference Unit UK Health Security Agency Manchester Medical Microbiology Partnership PO Box 209 Clinical Sciences Building 2 Manchester Royal Infirmary Oxford Road Manchester
Reference Lab Website	https://mft.nhs.uk/the-trust/other-departments/laboratory-medicine/manchester-medical-microbiology-partnership/opening-hours-clinical-advice-and-results-line/phe-meningococcal-reference-unit/
Contact Telephone Number	(0161) 276 8788
Expected Turn-around Time	

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Detection of Pneumocystis jirovecii DNA by PCR. Indicative of active infection or colonisation (latter more likely when level is low). Indicated in immunocompromised patients who are colonised are at risk of developing PcP pneumonia.
Sample Type/Tubes and Minimum Volumes	Broncho alveolar lavage (BAL) collected during bronchoscopy, sputum, and aspirates collected in white universal.
Known Interfering Factors	
Reference Laboratory Address	Department of Microbiology Old Medical School Thoresby Place Great George Street Leeds LS1 3EX
Reference Lab Website	https://www.leedsth.nhs.uk/a-z-of-services/pathology/test-and-tubes/virology/pneumocystis-jirovecii-pcp-pcr
Contact Telephone Number	0113-392-3499
Expected Turn-around Time	5 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

PNEUMOCYSTIS PCR

Indication	Detection of Pneumocystis jirovecii DNA by PCR. Indicative of active infection or colonisation (latter more likely when level is low). Indicated in immunocompromised patients who are colonised are at risk of developing PcP pneumonia.
Sample Type/Tubes and Minimum Volumes	Broncho alveolar lavage (BAL) collected during bronchoscopy, sputum, and aspirates collected in white universal.
Known Interfering Factors	Not stated
Reference Laboratory Address	Department of Microbiology Old Medical School Thoresby Place Great George Street Leeds LS1 3EX
Reference Lab Website	https://www.leedsth.nhs.uk/a-z-of-services/pathology/test-and-tubes/virology/pneumocystis-jirovecii-pcp-pcr
Contact Telephone Number	0113-392-23499
Expected Turn-around Time	5 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

POSACONAZOLE

Indication	Quantitation of the concentration of posaconazole in serum. Indicated on patient on posaconazole for at least 5-7 days.
Sample type/tubes and minimum volumes	Serum 7.5ml tube
Known interfering factors	Not stated.
Reference Laboratory address	Mycology Reference Laboratory The General Infirmary Leeds LS1 3EX
Reference lab website	https://www.leedsth.nhs.uk/a-z-of-services/pathology/test-and-tubes/mycology/posaconazole
Contact telephone number	tel:0113 392 6787
Expected turn-around time	5 days.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Procalcitonin is a precursor to the hormone calcitonin, a relatively specific marker for severe bacterial infection in patients with suspected sepsis. Relatively low concentrations are seen with viral infections or inflammatory diseases. Procalcitonin is more sensitive than CRP in discriminating between bacterial and viral infections. Low procalcitonin predicts the absence of bacteraemia/sepsis. An increase in procalcitonin in response to infection occurs before a rise in CRP.
Tube / Minimum Volume	Serum gel 7.5mL
Sample Collection	AS per CHFT venepuncture policy
Transport	Transport to the lab as soon as possible
Clinical Details Required	Relevant clinical details required
Method	The LIAISON BRAHMS PCT is a sandwich chemiluminescent immunoassay for the determination of procalcitonin in human serum and plasma.
Interpretation	Dependant on the clinical background a PCT concentration above 0.1ng/mL can indicate clinically relevant bacterial infection, requiring antibiotic treatment. At a PCT level of <0.5ng/mL, a patient should be considered at low risk of developing severe sepsis or septic shock. A PCT concentration of >2ng/mL represents a high risk of severe sepsis and/or septic shock.
Known Interfering Factors	Bacterial contamination or heat inactivation of the specimens may affect the test results. Test results are reported quantitatively for

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	the presence of PCT® analyte. However, assay results should be interpreted taking into consideration the patient's history and other diagnostic evidence. Diagnosis of a disease should be established based on the patient's medical history, in conjunction with clinical findings and in association with medical judgement. Any therapeutical decision must also be taken on a case-by-case basis.
Ref. Range (Male)	N/A
Ref. Range (Female)	N/A
Ref. Range (Paed)	N/A
Turn-around Time	24 hours
Frequency of Testing	Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PROCOLLAGEN TYPE 1 N PROPEPTIDE (P1NP)

Indication	P1NP is useful in monitoring response to bisphosphonates therapy and assessment of metabolic bone disease.
Referral Laboratory	Department of Clinical Chemistry Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	2ml
Special Collection Requirements	None
Additional Information	Not routinely available. Authorisation from the budget holder will be required before referring sample.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	3 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PROGESTERONE

Indication

Used to assess whether a patient is ovulating.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Samples volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

To check if ovulating collect on Day 21 or equivalent

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Competitive Immunoassay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

Reference Ranges

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PROLACTIN

Indication

Used to assess the possibility of Hyperprolactinaemia and prolactinoma. Patients on certain antipsychotic (risperidone; zotepine; olanzapine; amisulpride etc.) drugs are at risk of increased prolactin levels and it is recommended that they be periodically checked.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Stress should be avoided

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Direct two site sandwich immunoassay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

n/a

Reference Ranges

Normal values Female 60 – 620 mIU/L

Normal Values Male 45-375mIU/L

Values up to 1000 mIU/L may be seen in patients under stress.

Values up to approximately 6000 mIU/L occur in pregnancy

All new prolactin results >1000 are analysed for Macroprolactin. Samples which have previously been assayed for macroprolactin where the total prolactin level has changed significantly will also be tested.

Turn-around Time

Location/Request	Prolactin	Macroprolactin
Urgent Samples	24 hours	7 Days
Routine Inpatients	24 hours	7 Days
OP/GP	24 hours	7 Days

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PROSTATE SPECIFIC ANTIGEN / PSA

Indication

Used as an aid in the detection of prostate cancer and also to monitor prostate cancer in patients on treatment.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Two site sandwich immunoassay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

Reference Ranges

0-4 ug/L

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Used to detect and monitor monoclonal gammopathies. May also be used in the assessment of suspected immune deficiencies.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Agarose Gel Zone electrophoresis

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

An interpretive comment will be applied to all reports. Any monoclonal paraprotein bands seen will be typed by immunofixation where they represent a new case; also any monoclonal paraprotein bands will be quantitated by scanning densitometry and results reported in g/L.

Turn-around Time

Urgent Samples – 10 Days

Routine Inpatients – 10 Days

OP/GP – 10 Days

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

PSEUDOMONAS ANTIBODIES

Indication	Detects IgG antibodies to Pseudomonas Aeruginosa. Certain patient populations e.g. cystic fibrosis patients are prone to Ps. Aeruginosa infection which may be virulent and difficult to eradicate. Low in general population but rises rapidly during infection.
Referral Laboratory	Clinical Immunology Old Medical School Leeds General Infirmary Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	1mL
Special Collection Requirements	None
Additional Information	Results are unaffected by antibiotics.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transpost.
Turnaround Time	14 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Fortnightly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	The assay is an indirect test intended as an aid in the diagnosis of M. tuberculosis infection.
Tube / Minimum Volume	Heparin (orange cap) tubes containing at least 7.5mls of whole blood.
Sample Collection	As per CHFT venepuncture policy
Transport	Samples should be sent urgently to the laboratory. Samples must arrive in the laboratory to be processed less than 16 hours from collection.
Clinical Details Required	Relevant clinical details should be provided.
Method	The test uses chemiluminescent immunoassay (CLIA) technology to detect interferon- IFN-γ in human lithium heparin plasma specimens. The immunoassay can identify in vitro responses to a peptide antigens cocktail associated with Mycobacterium tuberculosis (M. tuberculosis) infection.
Interpretation	Positive = *M. tuberculosis* infection likely Negative = *M. tuberculosis* infection NOT likely Indeterminate = Likelihood of *M. tuberculosis* infection cannot be determined Samples with indeterminate results may need repeating depending on Clinical details.
Known interfering factors	A negative result does not preclude the possibility of M. tuberculosis infection or tuberculosis disease: false-negative results can be due to the stage of infection (e.g., specimen obtained prior to the

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

	development of cellular immune response), co-morbid conditions that affect immune functions, incorrect handling of the blood collection tubes following venepuncture, incorrect performance of the assay, or other immunological variables. A positive result should not be the sole or definitive basis for determining infection with M. tuberculosis. Incorrect performance of the assay may cause false-positive responses. Unreliable or indeterminate results may occur due to: Excessive levels of circulating IFN-γ or presence of heterophile antibodies. While ESAT-6 and CFP-10 are absent from all BCG strains and from most known nontuberculous Mycobacteria, it is possible that a positive result may be due to infection by M. kansasii, M. szulgai, or M. marinum. If such infections are suspected, alternative tests should be investigated.
Ref. Range (Male)	N/A
Ref. Range (Female)	N/A
Ref. Range (Paed)	N/A
Turn-around Time	14 days
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication	Unexplained Hypertension
Referral Laboratory	Specialist Laboratory Medicine Endocrine Section Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Lithium Heparin Tube 
Sample Type	Serum or Plasma
Minimum Volume	1mL
Special Collection Requirements	Must be spun, separated and frozen (posting freezer) within 30 minutes of collection.
Additional Information	None
Storage in Laboratory	Freeze prior to sending.
Transportation to Referral Laboratory	Transport in dry ice via CHFT Hospital Transport
Turnaround Time	21 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

RESPIRATORY CULTURE

Indication

Lower respiratory tract infection (sputum or BAL).

Tube / Minimum Volume

Sterile universal container.

node://28963

Sample Collection

Early-morning sputum samples should be obtained because they contain pooled overnight secretions in which pathogenic bacteria are more likely to be concentrated.

A segment of lung is 'washed' with sterile saline after insertion of a flexible bronchoscope, thereby allowing recovery of both cellular and non-cellular components of the epithelial surface of the lower respiratory tract. It is a reliable method for making a definitive aetiological diagnosis of pneumonia and other pulmonary infections.

Transport

Send to the laboratory as soon as possible.

Clinical Details Required

Antibiotics history. Travel history. If patient is immunocompromised.

Method

Culture onto agar plates according to the provided clinical details.

Interpretation

A positive culture does not confirm the diagnosis of lower respiratory tract infection - the result must be correlated clinically. Do not treat a positive result, treat the patient in the clinical context being mindful of the positive result.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

Transport delays, antibiotic therapy.

Turn-around Time

3-4 days.

Frequency of Testing

Monday – Saturday.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

RESPIRATORY PCR TEST

Indication

Diagnosis of a suspected respiratory infection with a viral or bacterial pathogen.

This test is only used for ICU patients or by arrangement following consultation with a Consultant Medical Microbiologist.

Tube/Minimum Volume

Nose and/or throat swab or alternatively a nasopharyngeal swab in viral transport medium (VTM).

Sample Collection

Refer to Infection Control Poster.

Transport

Ensure VTM container is sealed. Transport to laboratory in a sealed plastic microbiology sample bag.

Clinical Details Required

Clinical symptoms, date of onset.

Method

Real-time PCR using the QIAstat-Dx Analyser, detects nucleic acids from:

- Influenza A
- Influenza A, subtype H1N1/2009
- Influenza A subtype H1
- Influenza A subtype H3
- Influenza B
- Coronavirus 229E
- Coronavirus HKU1
- Coronavirus NL63
- Coronavirus OC43

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

- Parainfluenza Virus 1
- Parainfluenza Virus 2
- Parainfluenza Virus 3
- Parainfluenza Virus 4
- RSV A/B
- Human Metapneumovirus A/B
- Adenovirus
- Bocavirus
- Rhinovirus/Enterovirus
- Mycoplasma pneumoniae
- Legionella pneumophila
- Bordetella pertussis
- Chlamydophila pneumoniae
- COVID-19

Interpretation

POSITIVE: Suggestive of infection with one of the above bacteria/viruses. Review result in clinical context as result does not necessarily indicate the presence of viable organisms. It does however indicate the presence of target DNA/RNA.

NEGATIVE- does not exclude viral/bacterial presence as false negative results may occur due to loss of nucleic acid from inadequate collection, transport or storage of specimens.

Known Interfering Factors

None stated

Reference Ranges

N/A

Turn-around Time

24hrs

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

RETICULOCYTE SCREEN

Indication

Laboratory test for the investigation and monitoring of haematological disorders relating to anaemia.

Tube/Minimum Volume

Whole Blood
EDTA(red top bottle) 2.7ml
Paediatric sample bottle 1.3ml.

Sample Collection

Clean venepuncture or capillary collection. Mix gently after collection.

Transport

Routine transport to lab.

Clinical Details Required

Details relating to suspected anaemia.

Method

Automated haematology analyser

Interpretation

Increased retic counts indicate active bone marrow erythropoiesis. Low retic counts indicate reduced or suppressed erythropoiesis.

Known Interfering Factors

Blast cells, immature granulocytes, nucleated RBCs or atypical lymphs, giant or aggregated platelets, cold agglutinins, fibrin. Transfused red cells.

Reference Ranges

50-100 $x10^9$/L

Turn-around Time

Routine samples-same day
Urgent within one hour

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

RETINOL BINDING PROTEIN (RBP)

Indication	Serum RBP for Nutritional/Vitamin A status (limited use)
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	2ml
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	7 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

RHEUMATOID FACTOR / RF

Indication

Rheumatoid factor (usually IgM) is present in approximately 70% of patients with Rheumatoid Arthritis (RA).

RF also occurs in other autoimmune diseases (SLE, Scleroderma, Sjogren's), and chronic bacterial infection.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volume stated for guidance only. Electronic requesting system will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Latex-enhanced Immunoturbidimetric

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

Reference Ranges

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

0-14 IU/ml

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

RICKETTSIA SEROLOGY

Indication

Suspected rickettsiosis. E.g. Spotted Fevers, Epidemic Typhus.

Sample type/tubes and minimum volumes

Serum Gel

node://28903

Clinical details required

Travel history, date of onset of symptoms, antibiotic treatment

Timing of sample collection

Samples can be taken at any time of day.

Interpretation

Interpretative comments will be provided with the final report from the reference report.

Known interfering factors

Not stated.

Reference Laboratory Address

Rare and Imported Pathogens Laboratory (RIPL), Public Health England, Porton Down, Salisbury, Wiltshire SP4 0JG, UK

Reference Lab Website

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/419656/RIPL_user_manual.pdf

Contact Telephone Number

tel:01980 612348

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Expected Turn-around Time

2-5 days from receipt by the reference laboratory.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

ROTAVIRUS TESTING

Indication

Gastroenteritis in children (particularly those under 2).

Tube / Minimum Volume

Blue stool collection container.

node://28963

Transport

To the laboratory as soon as possible.

Clinical Details Required

Date of onset of symptoms

Method

Proflow™ Rotavirus test.

Interpretation

Positive - suggestive of rotavirus infection if compatible clinical features.

Negative - not suggestive of, but does not exclude, rotavirus infection.

Known Interfering Factors

Not stated

Turn-around Time

1 day

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

RUBELLA IGG

Indication

Determine immune status of individual to rubella – IVF work up routinely screened. Antenatal samples no longer routinely screened.

Tube / Minimum Volume

Serum Gel

node://28903

Sample Collection

As per CHFT Venepuncture Policy

Transport

Transport to the laboratory within 24 hours.

Clinical Details Required

Purpose of test, e.g. IVF work-up. If acute rubella infection is suspected, discuss with microbiologist and notify to the local Health Protection Unit.

Method

Sandwich immunoassay on ADVIA Centaur XPT platform for quantitative detection of rubella specific IgG.

Interpretation

Rubella IgG detected: ≥5 IU/ml of IgG present in blood. This confers immunity against rubella and as such the patient should be considered immune

Rubella IgG <5 IU/ml: patient is susceptible to rubella and should be offered immunisation.

Known interfering factors

Not stated

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Turn-around Time

1-3 days

Frequency of Testing

Monday - Friday

Unique Identifier and Version number

IP 320-090

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Used to assess likelihood of toxicity in overdose cases and whether treatment with activated charcoal is warranted. Patient may have a combined metabolic acidosis and respiratory alkalosis. Patient may observe increase in anion gap if severe.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL.

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volumes and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Salicylate hydroxylase catalyzes the conversion of salicylate and NADH to catechol and nicotinamide adenine dinucleotide (NAD+) in the presence of oxygen. The resulting decrease in absorbance at 340/410 nm, due to the conversion of NADH to NAD+ is directly proportional to the concentration of salicylate in the sample.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

N/A

Reference Ranges

N/A

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

SALIVARY DUCT ANTIBODIES

Indication	Sjogren's Syndrome, rheumatoid arthritis, SLE, myasthenia gravis Salivary duct antibodies are seen in approximately 50% of individuals with Sjogrens syndrome. The test result should not be considered of diagnostic value itself, but used in conjunction with patient's clinical symptoms, clinical history and any other valuable data to produce an overall clinical diagnosis.
Referral Laboratory	Protein Reference Unit Immunology PO Box 894 Sheffield S5 7YT
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	None
Turnaround time	10 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Frequency of testing	As required (Weekdays)

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **ISALA**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	Sample to be sent with Pathology request form.
Packaging	Wrap each individual sample in absorbent paper and pack samples and request forms in red sample bags. Place packed samples in Transport boxes and seal ready for posting

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

SCHISTOSOMA SEROLOGY

Indication

The test should be requested on patients known to have been exposed to fresh water in endemic areas. It starts to become positive approximately six weeks after exposure.

Deposition of ova commences at about this time but their first appearance (e.g. in urine) may be delayed for several months. Confirmation of the diagnosis by finding ova should be sought where possible.

The ELISA is reported to detect about 96% of Schistosoma mansoni and 92% of Schistosoma haematobium infections. The test does not distinguish active from treated infections. The actual time taken to become seronegative post treatment varies, but in some patients the test may remain positive for over two years after treatment.

Sample Type / Tubes and Minimum Volume

Brown gel tube (5ml serum or 10 ml clotted blood)

node://28903

Clinical Details Required

Travel history (date and location)

Timing of Sample Collection

Take sample at least 6 weeks after exposure

Interpretation

Interpretative comments will be provided on the report

Known Interfering Factors

Not stated

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Reference Laboratory Address

Hospital for Tropical Medicine London,
Mortimer Market
Capper Street (off Tottenham Court Road)
London
WC1E 6JB

Reference Lab Website

https://www.hslpathology.com/az_testlist/s/

Contact Telephone Number

020 3447 5959

Expected Turn-around Time

7 working days

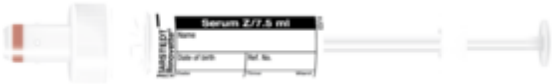
Unique Identifier and Version Number

IP 320-092 Version 2.0

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

SELENIUM

Indication	Deficiency or toxicity suspected.
Referral Laboratory	Specialist Laboratory Medicine Trace Metals Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Plain Tube 
Sample Type	Serum
Minimum Volume	1mL (0.5mL Paediatric)
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	7 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekdays

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

SENSITIVE OESTRADIOL (EXTRACTION)

Indication	Suspected precocious puberty in females. Confirmation of oestrogen >150 pmol/L in men and postmenopausal women.
Referral Laboratory	Specialist Laboratory Medicine Endocrine Section Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	1mL
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	21 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

SEROTONIN

Indication	Investigation of suspected carcinoid disease.
Referral Laboratory	Specialist Laboratory Medicine Block 46 St James hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	EDTA 
Sample Type	Whole blood
Minimum Volume	1mL
Special Collection Requirements	Sample must be frozen immediately on receipt, preferably within 3 hours of collection. A FBC must be collected and analysed at the same time.
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport on dry ice via CHFT Hospital Transport
Turnaround Time	20 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Fortnightly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

SERUM-FREE-LIGHT-CHAIN (SFLC)

Indication	sFLC should not be used as a screen for Multiple Myeloma. For use as an adjunct to serum and urine electrophoresis and immunofixation as a diagnostic marker for Multiple Myeloma and other plasma cell dyscrasias.
Referral Laboratory	Clinical Immunology Old Medical School Leeds General Infirmary Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	2mL
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transpost.
Turnaround Time	7 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

SEX HORMONE BINDING GLOBULIN / SHBG

Indication

Used in conjunction with testosterone to calculate the free androgen index (FAI).

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Sandwich Immunoassay.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

Male

Age	Reference Range
0-2Y	No Range
2-10Y	34.64-162.29 nmol/L
11Y	17.66-114.73 nmol/L
12Y	15.24-116.39 nmol/L
13Y	14.67-109.13 nmol/L
14Y	13.07-80.64 nmol/L
15Y	11.84-40.47 nmol/L
16-21Y	11.08-49.80 nmol/L
22-50Y	11.54-54.49 nmol/L
>50Y	17.33-71.50 nmol/L

Female

Age	Reference Range
0-2Y	No Ref Range
2-10Y	29.07-158.46 nmol/L
11-15Y	15.62-101.74 nmol/L
16-21Y	19.36-161.78 nmol/L
22-50Y	17.69-138.26 nmol/L
>50Y	23.65-110.61 nmol/L

Turn-around Time

Urgent Samples – 72 hours

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Routine Inpatients – 72 hours

OP/GP – 72 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

SIROLIMUS

Indication	Therapeutic drug monitoring
Referral Laboratory	Specialist Laboratory Medicine Transplant Immunology Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	EDTA 
Sample Type	Whole blood
Minimum Volume	1mL
Special Collection Requirements	Samples should be collected prior to morning dose (trough level).
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	2 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	As and when required.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

SLFT-1 / PIGF RATIO

Indication

Pre-eclampsia (PE) is a multisystem disorder that carries a significant risk of maternal and/or fetal morbidity and mortality. PE is defined as a new-onset hypertension + proteinuria OR in the absence of proteinuria, PE is defined as hypertension in association with the following: Abnormally low levels of platelets, renal insufficiency, impaired liver function, pulmonary oedema, cerebral or visual symptoms.

The sFlt-1/PlGf ratio test can be used for the diagnosis and short term prediction of pre-eclampsia.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volume stated for guidance only. Electronic requesting systems will calculate total sample volume and number of tubes required.

Sample Collection

Currently should only be requested by Maternity Assessment Clinic and Antenatal Clinic at CRH and ANDU at HRI.

Transport

Transport to lab as soon as possible. If podding the sample please telephone the lab to let them know it has been sent.

Clinical Details Required

Please give relevant details on the request form.

Method

Analysis of sample will be carried out at Dewsbury District Hospital.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

The method is a two-site sandwich immunoassay using direct chemiluminometric technology.

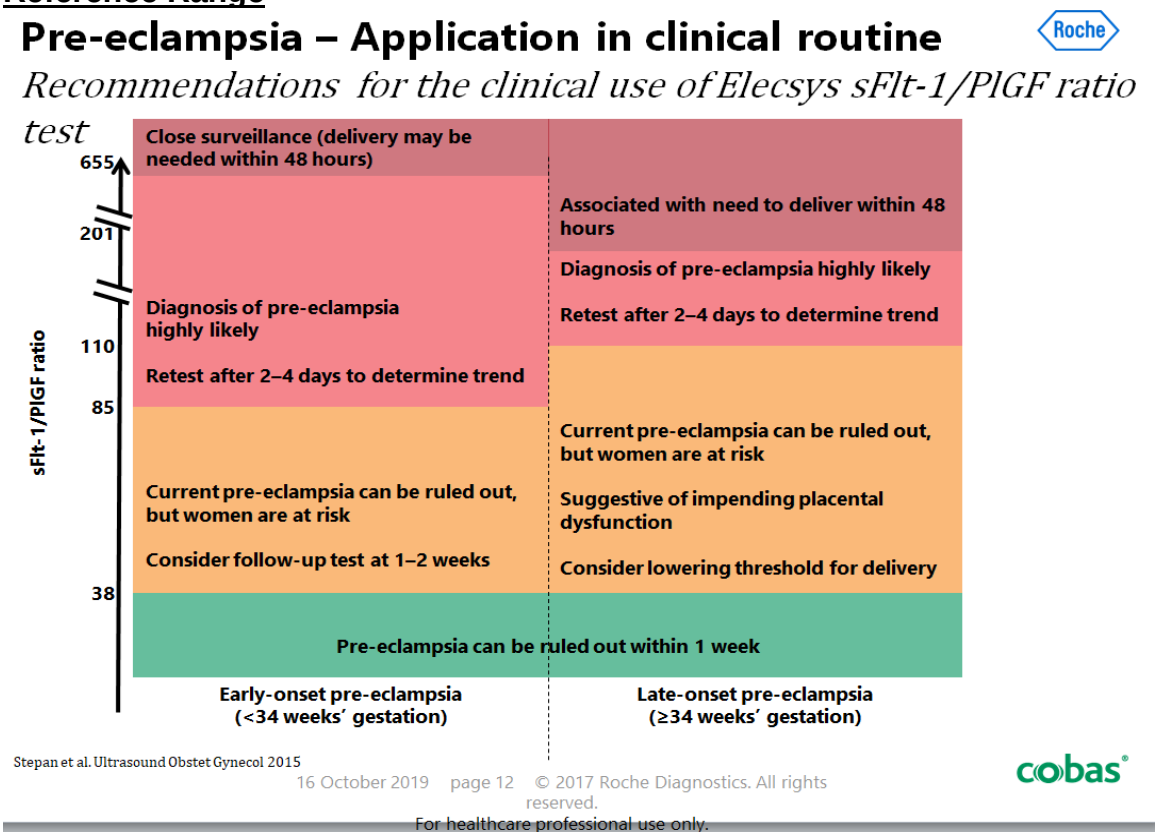
Interpretation

Results are reported on EPR/ICE. All results will be telephoned to the requesting Clinician.

Known Interfering Factors

- The assay is unaffected by icterus (bilirubin < 427 µmol/L or < 25 mg/dL), hemolysis (Hb < 0.311 mmol/L or < 0.5 g/dL), lipemia (Intralipid < 1400 mg/dL) and biotin (< 123 nmol/L or < 30 ng/mL).
- Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration.
- No interference was observed from rheumatoid factors up to a concentration of 600 IU/Ml
- In rare cases, interference due to extremely high titers of antibodies to analyte-specific antibodies, streptavidin or ruthenium can occur. These effects are minimized by suitable test design.

Reference Range



The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Turn-around Time

- Samples received in the lab between 08:00 – 19.30 – TATT 4 hours
- Samples received in the lab between 19.30 and 08:00 – Transport to Dewsbury District Hospital will be arranged at 07:00.

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

SKIN ANTIBODIES (PEMPHIGUS / PEMPHIGOID)

Indication	Pemphigus Vulgaris – Antibodies (ab) directed against desmogleins on the cell surface of epidermal keratinocytes. Ab levels may correlate with disease activity for Pemphigus only. Bullous Pemphigoid – Autoantibodies directed against hemidesmosomes in the basement membrane. Both are always tested.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	None
Turnaround time	10 working Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Frequency of testing	Daily (Weekdays)

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **PEM**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Packaging	Pack samples in racks. Place packed samples in Transport bags

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

SMOOTH MUSCLE ANTIBODIES (SMA)

Indication	Autoimmune Hepatitis type I, Primary Biliary Cirrhosis, Viral Hepatitis. Anti-liver/kidney/microsomal antibodies are part of the autoantibody screen which includes gastric parietal cell antibodies, mitochondrial antibodies, and smooth muscle antibodies.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	None
Turnaround time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **ALS**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx
Packaging	Pack samples in racks. Place packed samples in Transport bags

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Evaluation of suspected allergy (Type 1 IgE mediated hypersensitivity)
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml
Special Collection Requirements	None
Additional Information	Requests should be for specific allergens as indicated by the patient's clinical history.
Turnaround time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Daily (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: ***See LI 990-117 Allergy test names and APEX codes.***
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx
Packaging	Pack samples in racks designated for Allergy testing samples. Place packed samples in Transport bags

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

STONE ANALYSIS (CALC)

Indication	To establish the chemical makeup of a kidney stone. The help guide a treatment plan to prevent more stones forming.
Referral Laboratory	Sandwell & West Birmingham Hospitals NHS Trust Department Clinical Chemistry City Hospital Dudley Road Birmingham B18 7QH
Specimen Tube Required	Universal container 
Sample Type	Stone
Minimum Volume	Not stated
Special Collection Requirements	Samples must be washed and free from tissue to be suitable for analysis.
Additional Information	None
Storage in Laboratory	Store at room temperature prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Courier
Turnaround Time	5 working days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

STRIATED (SKELETAL) MUSCLE ANTIBODIES (ISTMA)

Indication	Myasthenia Gravis, Thymoma
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU 7YT
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml.
Special Collection Requirements	None
Additional Information	None
Turnaround time	5 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Weekly (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **ISTMA**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	Sample to be sent with Pathology request form
Packaging	Wrap each individual sample in absorbent paper and pack samples and request forms in red sample bags. Place packed samples in Transport boxes and seal ready for posting.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

STRONGYLOIDES SEROLOGY

Indication	Strongyloidiasis is a disease caused by a soil-transmitted nematode. Testing for Strongyloides is indicated for the investigation of eosinophilia or if there is a good clinical history to suggest strongyloidiasis.
Sample Type/Tubes and Minimum Volumes	7.5mL Serum
Known Interfering Factors	There is known to be cross reaction between filaria and strongyloides antibody in ELISA tests. Strongyloides serology may be negative in cases of strongyloides hyperinfestation. After treatment, we do not recommend follow up serology until at least a year after treatment.
Reference Laboratory Address	The Department of Clinical Parasitology, 3rd Floor Mortimer Market Centre, Mortimer Market, London WC1E 6JB
Reference Lab Website	Specimens | Health Services Laboratories (hslpathology.com)
Contact Telephone Number	020 7307 9400
Expected Turn-around Time	7-10 days
Unique Identifier and Version number	IP 320 095 Version 1

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

SWEAT TEST (SWEAT CHLORIDE)

Indication

The sweat test is widely regarded to be the most useful investigation in the diagnosis of Cystic Fibrosis.

Cystic fibrosis is the most common inherited genetic disorder in Caucasian populations. Sufferers are distinguished by the higher than normal concentration of salt (NaCl) in their sweat. The cystic fibrosis transmembrane conductance regulator (CFTR) functions as a chloride channel and mutations in the CFTR gene cause cystic fibrosis. The molecular defect results in an abnormally high chloride concentration in sweat.

Tube/Minimum Volume

Sweat Collection by iontophoresis 20µl

Sample Collection

Sweat test procedure and collection for paediatric patients are organised by paediatric outpatients.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Sweat Collection by iontophoresis, analysis by coulometric titration.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

No significant interferences.

Reference Ranges

Sweat chloride >60 mmol/l supports diagnosis of cystic fibrosis.

Sweat chloride of 40 to 60 (or 30 – 60 mmol/L if patient <6 months of age) suggestive but not diagnostic of CF. Requires further CF assessment such as a repeat test and/or further investigations

Sweat chloride of <40 (or <30 mmol/L) in patients <6 months of age) makes CF unlikely but requires genetic and clinical correlation

Turn-around Time

Urgent Samples – 7 Days

Routine Inpatients – 7 Days

OP/GP – 7 days

Frequency of Testing

Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

SYPHILIS SEROLOGY

Indication

Detect serological evidence of active / past syphilis infection

Tube / Minimum Volume

Serum Gel

node://28903

Sample Collection

As per CHFT venepuncture policy

Transport

To laboratory as soon as possivble

Clinical Details Required

Timing of contact if relevant

Method

Siemens ADVIA Centaur screening test - positive screens are referred for confirmation

Interpretation

Interpretative comments will be provided on the report.

Known Interfering factors

Screening test may interfere with anti-borellia antibodies (uncommon)

Turn-around Time

Screen 1-3 days

Confirmation: 3 days from receipt in the reference laboratory

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Frequency of Testing

Monday - Friday

Unique Identifier and Version number

IP 320-097 Version 1.0

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Therapeutic drug monitoring of Immunosuppressant.
Referral Laboratory	Specialist Laboratory Medicine Transplant Immunology Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	EDTA 
Sample Type	Whole blood
Minimum Volume	1mL
Special Collection Requirements	Samples should be collected prior to morning dose (trough level).
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	2 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekdays

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Whilst not in all patients, therapeutic drug monitoring may be of value in severe sepsis, MRSA infection, deep-seated staphylococcal infection, bone and joint infection, iv drug users, infective endocarditis, unexpected therapeutic failure, and elderly or renally impaired patients. Pre dose sample only required.
Sample Type/Tubes and Minimum Volumes	Serum 5ml tube
Known interfering factors	Teicoplanin binds to glass and plastics and therefore there may be a significant loss of drug if a small volume of serum is dispatched in a relatively large container. Please try and fill the containers to 2/3 – 3/4 of its capacity. If the sample is more than 24 hours a fresh sample should be taken to determine the trough level prior to testing, as dosing is normally every 12-24 hours.
Reference Laboratory address	Antimicrobial Reference Laboratory Level 2, Phase 1, Pathology Sciences Building Southmead Hospital Westbury-on-Trym Bristol BS10 5NB
Reference Lab Website	Teicoplanin | North Bristol NHS Trust (nbt.nhs.uk)
Contact Telephone Number	0117 4146269
Expected Turn-around Time	5 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Measurements of testosterone are used in the diagnosis and treatment of disorders involving the male sex hormones (androgens), including primary and secondary hypogonadism, delayed or precocious puberty, impotence in males and, in females, hirsutism (excessive hair) and virilization (masculinization) due to tumours, polycystic ovaries, and adrenogenital syndromes.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated are for guidance only, Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Competitive immunoassay using direct chemiluminescent technology

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

No significant interferences have been observed Lipaemic interferents. Results for Testosterone cannot be reported on haemolysed specimens that contain above 5.0g/L Hb, or on Icteric samples that contain 256 umol/L Bilirubin

Reference Ranges

Male	
Age	**Reference Range (nmol/L)**
0-2Y	No Ref Range
2-10Y	0.00-0.36
11Y	0.00-16.60
12Y	0.00-16.93
13Y	0.29-19.08
14Y	0.31-18.58
15Y	2.29-26.25
16-21Y	7.92-24.66
<50Y	6.85-23.23
>50Y	6.51 -23.74

Female	
Age	**Reference Range (nmol/L)**
0-2Y	No Ref Range
2-10Y	0.00-0.41
11-15Y	0.00-0.96
16-21Y	0.41-1.50
<50Y	0.29-1.21
>50Y	0.00-1.25

Turn-around Time

Urgent Samples – 24 hours

Routine Samples (Inpatient) – 24 hours

OP/GP Samples – 24 hours

Frequency of Testing

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

THIOPURINE METABOLITES (6TGN & 6MMPN)

Indication	The assay is particularly relevant to determine the correct treatment regimes in patients who have TPMT heterozygous status who exhibit a low TPMT enzyme activity. Thiopurine Metabolites includes the therapeutic levels of active metabolites of the thioguanine drugs azathioprine, 6-mercaptopurine and 6-thioguanine.
Referral Laboratory	Sandwell & West Birmingham Hospitals NHS Trust Department Clinical Chemistry City Hospital Dudley Road Birmingham B18 7QH
Specimen Tube Required	EDTA 
Sample Type	Whole blood
Minimum Volume	0.5ml
Special Collection Requirements	None
Additional Information	Sample should be analysed within 5 days of collection. Interpret with caution thereafter.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Courier
Turnaround Time	2 working days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

THIOPURINE S-METHYL TRANSFERASE (TPMT)

Indication	Non-invasive assessment of pancreatic exocrine insufficiency. Pancreatic elastase is also gaining an increasing role in the assessment of cystic fibrosis patients.
Referral Laboratory	Sandwell & West Birmingham Hospitals NHS Trust Department Clinical Chemistry City Hospital Dudley Road Birmingham B18 7QH
Specimen Tube Required	EDTA 
Sample Type	Whole blood
Minimum Volume	2ml
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Courier
Turnaround Time	1 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

THROAT SWAB (BACTERIAL)

Indication

Pharyngitis

Suspected diptheria

Vincents angina

Contraindicated in suspected acute epiglottitis.

Tube / Minimum Volume

Swab with Amies transport medium.

node://28963

Sample Collection

The swab should be taken from the tonsillar area and/or the posterior pharynx avoiding the tongue and uvula.

Samples should ideally be sent prior to initiation of antimicrobial therapy.

Transport

Specimens should be transported to the laboratory as soon as possible.

Clinical Details Required

Symptoms. Presence of membrane. Details of foreign travel. Whether part of STI screen. If recurrent infection.treatment failure. If patient is immunocompromised/diabetic or has oral candidiasis. If suspect quinsy. If looking for MSSA carriage.

Method

Culture onto agar plates according to clinical details and local policy.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

Significant organisms will be reported with interpretative comments where indicated. Further interpretation/clinical advice can be obtained through discussion with a microbiologist.

Known Interfering Factors

Inhibitors. Overgrowth of significant pathogens by normal flora.

Turn-around Time

48 hours. 5 days if persistent sore throat or quinsy.

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

THROMBOPHILIA SCREEN

Indication

Thrombophilia testing is used when a patient has a first VTE at less than 50 years old or in an unusual part of the body. It may be used when a patient has a personal or family history of recurrent VTE, a first VTE related to oral contraceptive use, pregnancy or hormone replacement therapy, or when they are experiencing unexplained miscarriages, especially those occurring in the second or third trimester of the pregnancy.

Tube/Minimum Volume

Blood Sodium citrate 3mL(green top), EDTA 2.7mL(red top) and gel tube 5mL(brown top).

NB four citrate tubes, one EDTA tube & one gel tube are required.

Sample Collection

Clean venepuncture. Mix gently after collection. Citrate tubes must be filled to the line.

Transport

Transport to the lab as soon as possible. Specimens may be delivered by the following routes:

Pneumatic tube system, phlebotomists, Trust personnel, Trust transport drivers, external medical personnel, White Knights and private hire personnel.

Clinical Details Required

Full clinical details to include history of VTE and any family history of VTE, unexplained miscarriages and current medication.

Method

Thrombophilia Screens (excluding the Coag Screen and the Lupus Anticoagulation Screen, which are tested at Huddersfield Royal Hospital) are sent to Oldham Royal Hospital.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

Results are reported as:
No deficiency of ATIII, Protein C or Protein S, or Indication of one or more component deficiencies (in which case repeat testing is required.

Known Interfering Factors

Anticoagulants. Grossly haemolysed samples, lipaemic samples and samples with clots will be rejected.

Reference Ranges

Male:	Protein S 63 – 129 % Protein C 69 -133 %
Female:	Protein S 58 – 120% Protein C 68 – 148%
For both sexes	ATlll 75 – 125% Cardiolipin Ab 0 – 10 GPL/mL

Critical phone limits

N/A

Turn-around Time

4 weeks

Frequency of Testing

The laboratory has a 24 hour service for receiving the samples, however the sample are tested in batches once per week.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Thyroglobulin is useful as a tumour marker for thyroid cancer. It does not have any diagnostic utility in other thyroid diseases.
Referral Laboratory	Blood Sciences Old Medical School Leeds General Infirmary Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	1mL
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transpost.
Turnaround Time	7 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Suspected infection of the tissue being biopsied to identify causitive organisms.

Tube / Minimum Volume

CE marked sterile leak proof container in sealed plastic bag.

Suspected Prosthetic Joint Infection - use Ballotini Beads FAB 5ml broth.

Sample Collection

Small specimens should be placed in sterile water to prevent desiccation.

Transport

Specimens should be transported and processed as soon as possible.

Clinical Details Required

Site of tissue, duration of symptoms, antimicrobial therapy.

Specifically state if patient is immunocompromised or if fungal infection is suspected.

Method

A representative portion of the specimen is Gram stained (either following homogenisation by the touch preparation method). Agar plates/enrichment broth is then inoculated and cultured according to local policy. Any cultured organisms will be identified and susceptibility testing performed in line with local policy.

Interpretation

The significance of any bacterial growth is dependent on the method of collection, the site sampled and the organism identified. Interpretative

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

comments may be provided from the laboratory. Discuss with microbiology when required.

Known Interfering Factors

Inhibitors. Temperature of incubation. Contamination of specimen.

Turn-around Time

5-7 days (to allow for full enrichment culture). Results may be reported sooner.

Frequency of Testing

Daily. Urgent Gram stains can be performed - discuss with the laboratory first. Further details of urgent processing can be found here: node://1845

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

TPO – THYROID PEROXIDASE ANTIBODY

Indication

The measurement of autoantibodies against thyroid peroxidase is useful in identifying patients with autoimmune thyroid disease. Levels of anti-TPO antibodies are increased in greater than 90% of patients with active autoimmune thyroiditis. Anti-TPO antibodies activate complement and are thought to be significantly involved in thyroid dysfunction and the pathogenesis of hypothyroidism.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated are for guidance only, Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Competitive immunoassay using chemiluminescent technology

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

No significant interferences have been observed Lipaemic or Icteric interferents. Results for TPO cannot be reported on haemolysed specimens that contain above 5.0g/L Hb.

Reference Ranges

0 - 60 u/ml

Turn-around Time

Urgent Samples – 24 hours

Routine Samples (Inpatient) – 24 hours

OP/GP Samples – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

THYROID RECEPTOR ANTIBODIES (TRAB)

Indication	Thyroid disorders / Graves' disease / risk of neonatal hypothyroidism.
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	2ml
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	5 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

THYROID STIMULATING HORMONE / TSH

Indication

Used to assess the thyroid status of a patient. TSH is used as a first line screen. If the TSH is found to be raised the lab will add an FT4 and a TPO test to the request (NB TPO will not be tested if it has been previously shown to be raised). If the TSH is low an FT4 and an FT3 test will also be done. Please give details of any thyroid related medication on the request.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Anti-FITC monoclonal antibody covalently bound to paramagnetic particles, an FITC-labelled anti-TSH capture monoclonal antibody, and a tracer consisting of a proprietary acridinium ester and an anti-TSH mAb antibody conjugated to bovine serum albumin (BSA) for chemiluminescent.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

n/a

Reference Ranges

0.2-4.0 IU/L

Turn-around Time

Urgent Samples – 4 hours

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

THYROXINE / FREE T4, FT4

Indication

Used in the assessment of thyroid function

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Competitive immunoassay using direct chemiluminescent technology.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

Reference Ranges

11 – 22.6 pmol/L, also see TSH reference ranges

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

TOBRAMYCIN

Indication	Therapeutic drug monitoring.
Referral Laboratory	Blood Sciences Old Medical School Leeds General Infirmary Leeds LS1 3EX
Specimen Tube Required	Plain Tube 
Sample Type	Serum
Minimum Volume	1mL
Special Collection Requirements	Serum (with or without gel) and plasma (EDTA/lithium heparin) samples acceptable
Additional Information	Test can only be added to samples within 8 hours of collection.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transpost.
Turnaround Time	Not stated *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

TOBRAMYCIN LEVEL

Test repertoire currently not available to view.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

TOTAL BILIRUBIN

Indication

Levels are raised in neonatal jaundice; acute hepatitis; primary biliary cirrhosis; cholestasis and haemolysis.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Vanadate Oxidation

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

0-21 umol/L

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

TOTAL CHOLESTEROL / HDL CHOLESTEROL RATIO

Indication

In primary prevention of CHD it is best measured in conjunction with HDL Cholesterol, so that risk can be assessed using the Total/HDL Cholesterol ratio.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Cholesterol levels should be assessed in conjunction with other cardiovascular risk factors such as, age, sex, blood pressure, smoking.

For cholesterol and HDL cholesterol requests ONLY the patient does not need to be fasted.

If a full lipid profile is required the patient should fast overnight.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Enzymatic

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

n/a

Reference Ranges

n/a

Turn-around Time

Urgent Samples – 3 hours

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Elevated in atopic eczema, allergic asthma, allergic bronchopulmonary aspergillosis, invasive heleminthiasis and some forms of immunodeficiency. Measurement of Total IgE is not essential in the diagnosis of allergy. The level of IgE does not correlate well with the severity of allergic symptoms.
Referral Laboratory	Leeds General Infirmary Clinical Immunology Old Medical School Great George Street Leeds LS1 3EX
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml
Special Collection Requirements	None
Additional Information	Normal ranges are age-related.
Turnaround time	7 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Frequency of testing	Daily (Weekdays)

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **IGE**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via CHFT Hospital Transport.
Method of sending patient/test info.	NPEx
Packaging	Pack samples in racks designated for Allergy testing samples. Place packed samples in Transport bags

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

TOTAL PROTEIN

Indication

Used in conjunction with albumin to assess globulin levels.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Biuret Endpoint Chemistry

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

Reference Ranges

60-80 g/L

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

TOXOPLASMA SEROLOGY

Indication

Suspected acute toxoplasma infection, suspected toxoplasma infection during pregnancy, assessment of neonate born to mother with suspected or confirmed toxoplasma infection during pregnancy.

Tube / Minimum Volume

Serum Gel

node://28903

Sample Collection

Venepuncture of per CHFT policy. Can be taken at any time.

Transport

Transport to lab within 24 hours of taking sample (unless urgent).

Clinical Details Required

Date of onset of illness, relevant clinical symptoms, gestation (if relevant), details of animal contact/pets, relevant travel history.

Interpretation

NEGATIVE – implies no prior exposure to toxoplasma. Patient therefore remains at risk of acquiring infection and advice should be given on reducing this risk, particularly in females of childbearing age or patients who are immunocompromised.

POSITIVE – sample will be referred for further testing in Toxoplasma reference Unit – interpretative comments will be provided.

Known Interfering Factors

Not stated.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Turn-around Time

Screening test: 1-3 days.

Reference lab report: 7-10 days from receipt of sample in reference laboratory.

Frequency of Testing

Screening serology Monday - Friday only.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

TRANSFERRIN (TRF)

Indication

Transferrin is the major iron transport protein in serum. The measurement of transferrin concentration correlates well with the measurement of total iron binding capacity and is useful in assessing overall iron status.
Measurements of transferrin are used in the diagnosis and treatment of malnutrition, chronic infection, acute hepatitis, polycythaemia, pernicious anaemia and iron deficiency anaemia.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

PEG Enhanced Immunoturbidimetric

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

No significant interferences have been observed against Haemolytic, Icteric or Lipaemic interferents.

Reference Ranges

Male: 2.15-3.65 g/L

Female: 2.5-3.8 g/L

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

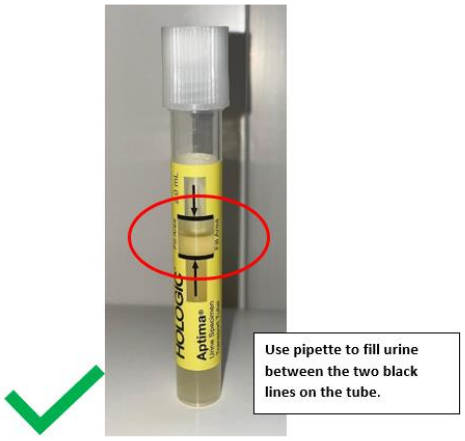
TRANSFERRIN GLYCOFORMS

Indication	Congenital disorders of Glycosylation (CDG).
Referral Laboratory	Neuroimmunology & CSF Laboratory Institute of Neurology Specimen Reception UCL Queen Square London WC1N 3BG
Specimen Tube Required	Gel tube 
Sample Type	Serum
Minimum Volume	100µl
Special Collection Requirements	Serum and Plasma acceptable, preferably not EDTA Plasma
Additional Information	Recent transfusions invalidate results. May be unreliable in neonates younger than 3 weeks due to maternal transferrin.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	9 Working Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Not stated

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

TRICHOMONAS VAGINALIS PCR

Indication	The Aptima Trichomonas vaginalis Assay is an *in vitro* qualitative nucleic acid amplification test (NAAT) for the detection of ribosomal RNA (rRNA) from *Trichomonas vaginalis* to aid in the diagnosis of trichomoniasis.
Tube / Minimum Volume	Aptima Unisex Swab Specimen Collection Kit for Endocervical and Male Urethral Swab Specimens Aptima Urine Collection Kit for Male and Female Urine Specimens If using Aptima urine collection kits the urine liquid level must fall between the two black lines on the tube (see images below) Aptima Multitest Swab Specimen Collection Kit  

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Sample Collection	Urine samples should be collected Aptima Urine collection tubes or appropriate preservative free containers. Swabs should be collected using the applicable collection system dependent on body site.
Transport	Sample should be transported to the laboratory without delay. Urine specimens which are not in Aptima Urine collection kit tubes must reach the laboratory within a maximum of 24 hours.
Clinical Details Required	Relevant clinical details should be included on the request form.
Method	The Aptima Trichomonas vaginalis Assay involves the technologies of target capture, transcription-mediated amplification (TMA), and hybridization protection assay (HPA) for the detection of ribosomal RNA (rRNA) from *Trichomonas vaginalis.*
Interpretation	TV positive – Positive for TV rRNA TV negative – presumed negative for TV rRNA TV Invalid – Invalid result, a new specimen should be collected. As true for all non-culture methods, a positive specimen obtained from a patient after therapeutic treatment cannot be interpreted as indicating presence of viable TV. A negative result does not preclude a possible infection because results are dependent on adequate specimen collection. Test results may be affected by improper specimen collection, technical error, specimen mix-up, or target levels below the assay limit of detection.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors	TV-positive mucoid samples may exhibit decreased RLU values. To ensure proper endocervical sampling, excess mucus should be removed. Therapeutic failure or success cannot be determined with the Aptima Trichomonas vaginalis Assay since nucleic acid may persist following appropriate antimicrobial therapy. Results from the Aptima Trichomonas vaginalis Assay should be interpreted in conjunction with other clinical data available to the clinician. The Aptima Trichomonas vaginalis Assay has not been validated for use with vaginal swab specimens collected by patients. Performance of the vaginal swab specimen has not been evaluated in pregnant women. Performance of the vaginal swab and specimen has not been evaluated in women less than 14 years of age.
Turn-around Time	7 days
Frequency of Testing	Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

TRIGLYCERIDES

Indication

Triglyceride levels should be assessed in conjunction with other cardiovascular risk factors, cholesterol, age, sex, blood pressure and smoking.

It is useful in the treatment of hyperlipidaemia secondary to conditions like diabetes, alcohol abuse and obesity.

It is also required for diagnosis of mixed hyperlipidaemia and as part of a full fasting lipid profile for the calculation of the LDL cholesterol.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volume stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Consists of cholesterol, triglycerides, HDL and if fasting LDL. Patient should be fasted for 8 hours.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Fossati three-step enzymatic reaction with a Trinder endpoint.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

Reference Ranges

0-1.7 mmol/L

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

TRI-IODOTHYRONINE / FREE T3 / T3

Indication

Used in the assessment of thyroid function

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated are for guidance only. Electronic requesting systems will calculate total sample volumes and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Competitive immunoassay using direct chemiluminescent technology.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

N/A

Reference Ranges

Age 0-12= 4.2-7.4pmol/L

Age 12+ = 3.5-6.5pmol/L

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Used as a cardiac marker in the assessment of patients with suspected MI

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

TNI samples stable up to 8 hours when capped at room temperature and stable up to 24 hours when stored at 2-8°C. Collection times should be in accordance with ED/AMU ACS Pathway.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Three site sandwich immunoassay.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

No significant interferences have been observed against Haemolytic, Icteric or Lipaemic interferents.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

Female 0-39.59 ng/L (Negative)

Male 0-58.05 ng/L (Negative)

Turn-around Time

Urgent Samples – 75 minutes

Routine Inpatients – 90 minutes

OP/GP – Contact Lab

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

TRIMETHYLAMINE (URINE)

Indication	For diagnosis of primary and secondary trimethylaminuria (fish odour syndrome)
Referral Laboratory	Department of Clinical Chemistry Sheffield Children's Hospital Western Bank Sheffield S10 2TH
Specimen Tube Required	Universal Urine Container 
Sample Type	Urine
Minimum Volume	20 ml
Special Collection Requirements	Urine must be fresh.
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	6-8 weeks - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

TRYPTASE

Indication	Anaphylaxis and mass cell syndromes, such as Mastocytosis.
Referral Laboratory	Sheffield Protein Reference Unit & Immunology Department Northern General Hospital Laboratory Medicine Building North Lane Northern General Hospital Herries Road Sheffield S5 7AU
Specimen Tube Required	Gel Tube 
Sample Type	Serum
Minimum Volume	2ml
Special Collection Requirements	3 Samples required for anaphylactic reaction, the first sample within 1 hour of reaction and subsequently at 3 and 24 hours post reaction.
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post
Turnaround Time	5 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

URATE / URIC ACID

Indication

Used as a test for gout and used to assess the prognosis of pre-eclampsia in pregnancy.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Uricase / Peroxidase

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

Male: 0.2 - 0.43 mmol/L

Female: 0.14 - 0.36 mmol/L

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication

Urea measurements are used in the diagnosis and treatment of kidney disease, urinary tract obstruction, and acute or chronic renal failure

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Urease with GLDH

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

No significant interferences have been observed against Haemolytic, Icteric or Lipaemic interferents.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

2.5 - 7.8mmol/l

Turn-around Time

Urgent Samples – 1 hour

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

URINE 5HIAA (5 HYDROXYINDOLEACETIC ACID)

Indication	Serotonin-secreting carcinoid tumour.
Referral Laboratory	Clinical Biochemistry John Radcliffe Hospital Hedley Way Oxford OX3 9DU
Specimen Tube Required	24 hour urine container 
Sample Type	Urine
Minimum Volume	20mL
Special Collection Requirements	Sample must be protected from light.
Additional Information	None
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport frozen on Dry Ice via Courier.
Turnaround Time	14 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

The measurement of amylase in urine is used as an indication of chronic hyperamylasemia, to exclude macroamylasemia and in the detection or exclusion of renal insufficiency and diabetic nephropathy. It is raised 7 – 10 days after an attack of pancreatitis.

Tube/Minimum Volume

White Top 25mL Universal (Spot Urine) – Minimum 10mL

8.5ml Urine monovette Tubes - Minimum 8.5ml

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Ethylidene Blocked- PNPG7

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

N/A

Reference Ranges

N/A

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

URINE PROTEIN ELECTROPHORESIS / BENCE JONES PROTEIN

Indication

Used in the diagnosis of monoclonal gammopathies.

Tube/Minimum Volume

White top 25mL Universal (Urine) – Minimum 10mL

8.5ml Urine monovette Tubes x 2 – Minimum 10mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Zone Electrophoresis

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

An interpretive comment will be applied to all reports. Any monoclonal paraprotein bands seen will be typed by immunofixation.

Turn-around Time

Urgent Samples – 10 Days

Routine Inpatients – 10 Days

OP/GP – 10 Days

Frequency of Testing

Daily for initial electrophoresis, clinical interpretation required and possible further confirmatory testing.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

URINE CORTISOL

Indication	Diagnosis and monitoring of endocrine disorders such as Addison's and Cushing's diseases.
Referral Laboratory	Specialist Laboratory Medicine Endocrine Section Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	24 hour urine container (Adult) 
Sample Type	Urine
Minimum Volume	0.5mL
Special Collection Requirements	Weight of sample must be logged.
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	14 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Used to evaluate kidney function; assess creatinine clearance (with serum creatinine); assess renal concentrating ability; with other analytes to calculate analyte:creatinine ratio; with plasma creatinine and other analyte to calculate fractional excretion of analyte.

Tube/Minimum Volume

2.5L Container(s) with no preservative (24hr Urine Collection)

White Top 25mL Universal (Spot Urine) – Minimum 10mL

8.5ml Urine monovette Tubes – minimum 8.5ml

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Jaffe, Alkaline picrate, Kinetic with blank rate correction

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

N/A

Reference Ranges

N/A

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

URINE DRUG SCREEN

Indication	Monitoring treatment for substance misuse. Suspicion of substance misuse.
Referral Laboratory	Specialist Laboratory Medicine Toxicology Block 46 St James hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Plain Universal 
Sample Type	Urine
Minimum Volume	200uL
Special Collection Requirements	None
Additional Information	Plain urine only, no preservative.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	6 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

URINE ELECTROLYTES

Indication

Used in the assessment of patients with abnormal electrolyte. Can also be used in the identification of renal or pre-renal uraemia.

Tube/Minimum Volume

White top 25mL Universal (Spot Urine) – Minimum 10mL

White top plain 2.5L containers for 24hr Urine collection.

8.5ml Urine monovette Tubes - minimum 8.5ml

Sample volumes for guidance only. Electronic requesting systems will calculate total sample volume and the number of the tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Ion selective electrodes – Indirect ISE's

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

N/A

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

No formal ranges quoted since concentrations are dependent upon fluid and electrolyte intake and the current electrolyte balance of the patient. Contact lab if interpretation is required.

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

URINE MAGNESIUM (UMG)

Indication

Used in the diagnosis and treatment of hypermagnesaemia and to monitor patients receiving prolonged magnesium-free intravenous therapy.

Tube/Minimum Volume

Random sample - white top 25ml urine container – minimum volume 10ml

2.5L Container(s) with no preservative (24hr Urine Collection)

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Xylidyl Blue chemistry assay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

No significant interferences

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

N/A

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

URINE METABOLIC SCREEN (INCLUDES ORGANIC ACIDS AND AMINO ACIDS)

Indication	For the investigation and follow up of a number of inherited metabolic diseases.
Referral Laboratory	Specialist Laboratory Medicine Biochemical Genetics Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Plain Universal 
Sample Type	Urine
Minimum Volume	2-6mL (dependent on creatinine)
Special Collection Requirements	Boric acid tubes are NOT acceptable.
Additional Information	None
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	18 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

URINE MICROSCOPY AND CULTURE

Indication

1. Suspected urinary tract infection
2. Screening for asymptomatic bacteriuria in pregnancy

N.B. Tests of cure are NOT recommended. Repeat samples should only be sent when the patient fails to respond to treatment.

Do NOT send CSU for culture based on the results of dipstick testing alone.

Tube/Minimum Volume

node://29006

Red Top – Contain Boric Acid which will inhibit bacterial overgrowth & can be left at room temperature.

The use of white top container can result in degradation of specimen in transit, which will have an impact on the quality of report and is a risk to the patient.

A minimum of 5ml urine is required for urine culture and processing on the analyser.

Sample Collection

MSSU: Peri-urethral washing is not essential prior to sending although it may reduce the risk of specimen contamination. First voided urine should not be sent as this is more likely to be contaminated with urethral flora – midstream specimens provide a much better quality of sample to aid in the diagnosis of UTI.

CSU: specimens should not be sent on the basis of positive urine dipsticks alone. 'In-out' catheter specimens are preferred to samples from long-term indwelling catheters.

Alternative sample types: catheter, urostomy, nephrostomy, cystoscopy, ileal conduit, urine pad, and prostate massage specimens can be processed.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Transport

Sample should be transported to laboratory on same day as collection. If this is not possible then refrigerate samples at 4°C (this is not necessary if sample is in boric acid (i.e. red) container.

Clinical Details Required

Symptoms

Any prescribed or recent antibiotic therapy

Method

Prior to culture, urine samples will have automated microscopy to detect:

1. Pyuria (presence of white blood cells in urine)
2. Haematuria (presence of red blood cells in urine)
3. Epithelial cells (if present, suggestive of contamination of the specimen at time of collection)
4. Presence of bacteria

If there is no evidence of infection after automated microscopy, urine culture will not be performed (although white and red cell counts will be reported).

If there is evidence of infection after automated microscopy, overnight culture will identify all common urinary pathogens including yeasts. Antibiotic susceptibility testing will be carried out where one or two different organisms are isolated, but not where there is a greater mix of organisms unless agreed with a Consultant Microbiologist.

Interpretation

Results must be interpreted in the clinical context. If the patient has no symptoms of UTI, the presence of bacteriuria alone is not diagnostic of UTI.

White blood cells:

White cell count (WCC) of ≥ 50 white cells/uL defines a pyuria and is suggestive of UTI. A WCC of ≤49 makes UTI unlikely.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Patients who are neutropenic will also have a low white cell count in the urine, even if they do have a UTI.

Epithelial cells:

If present are suggestive of contamination of the specimen at the time of collection
A specimen may be contaminated by both white cells and bacteria, giving false positive pyuria and culture results.

Culture

Single organism isolated with pyuria – suggestive of UTI if symptoms consistent with diagnosis.
Asymptomatic bacteriuria (i.e. positive urine culture in the absence of symptoms) is not an indication for antibiotic therapy.
Mixed growth is suggestive of contamination, particularly if epithelial cells are also present.
For queries regarding interpretation of the result, contact the duty microbiologist via switchboard.

Sterile Pyuria

Defined as high white cell count (>50 white cells/uL) but negative culture
Poor sample quality is the most common cause (e.g. contamination from vaginal secretions) and a repeat, correctly obtained midstream specimen of urine should be sent to the laboratory for confirmation

The differential diagnosis is wide and would require targeted evaluation dependent on the clinical context

Known Interfering Factors

Overgrowth if not in boric acid. Inhibitors. Presence of antibacterials in urine.

Turn-around Time

48 hours for culture and sensitivity

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

URINE ALBUMIN / MICROALBUMIN

Indication

Used as an assessment of the degree of nephropathy in diabetic patients.

Tube/Minimum Volume

25mL White Top Universal – Minimum 10mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volumes and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

PEG Enhanced Immunoturbidimetric chemistry

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

Reference Ranges

3-20 mg/L

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

The measurement of pH on Urine

Indication

Measured as part of a stone screen, or can be requested alone, it is used in the investigation of renal disease, renal stone formers, acid-base balance and in the response to treatments. Urine pH can indicate if urine is too acidic or alkaline for stone formation or for bacterial growth.

Tube/Minimum Volume

25mL White Top (Urine) – Minimum 10mL

24 hour Urine Collection

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Samples for urine must be analysed within 24 hours of collection. Samples older than 24 hours must be rejected.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

ISE Technology pH sensor

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs.

Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

Bacterial growth and increased formulation of urea in the sample can affect the pH of the urine.

Reference Ranges

Analyte concentrations should be interpreted within the clinical context as no reference ranges are established. Normal Urine pH is between 5 and 6.

Turn-around Time

Urgent Samples – 8 Hours

Routine Inpatients – 8 Hours

OP/GP – 8 Hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

URINE PHOSPHATE

Indication

Used to determine phosphate excretion, in combination with urine and serum creatinine, for the diagnosis of tubular syndromes (e.g. Fanconi's) and calcium and phosphate balance.

Tube/Minimum Volume

2.5L Container(s) with no preservative (24hr Urine Collection)

White Top 25mL Universal (Spot Urine) – Minimum 10mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Phosphomolybdate/UV

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

n/a

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Used in the assessment of patients with renal failure; nephrotic syndrome and in pre-eclampsia

Tube/Minimum Volume

2.5L Container(s) with no preservative (24hr Urine Collection), White Top 25mL Universal (Spot Urine) – Minimum 10mL

8.5ml Urine monovette Tubes x 1

Sample Volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

End point chemistry

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Reference Ranges

n/a

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

URINE STEROID PROFILE

Indication	Identification of inborn errors of steroid metabolism
Referral Laboratory	Steroid Laboratory Kings College Hospital Denmark Hill London SE5 9RS
Specimen Tube Required	Plain Universal 
Sample Type	Urine
Minimum Volume	20mL
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Freeze prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post.
Turnaround Time	3 weeks - from receipt of sample at referral laboratory. Urgent results can usually be given over the phone within 3 working days. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	As and when required.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

URINE STONE SCREEN (ADULTS)

Indication	Oxalate -Renal stone formers Cystine - Used in the investigation and monitoring of cystinuria, a cause of renal stones.
Referral Laboratory	Specialist Laboratory Medicine Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	24 hour urine container (Adult) 
Sample Type	Urine
Minimum Volume	Oxalate 20ml Cystine 5ml
Special Collection Requirements	None
Additional Information	Sample should be acidified with HCl acid to a PH<2
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	Oxalate - 20 Days - from receipt of sample at referral laboratory. Cystine – 14 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Oxalate – Fortnightly, Cystine - Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication

Uric Acid measurements are used in the diagnosis and treatment of renal failure, gout, and eclampsia.

Tube/Minimum Volume

2.5L Container(s) with no preservative (24hr Urine Collection)

White Top 25mL Universal (Spot Urine) – Minimum 10mL

8.5ml Urine monovette Tubes - Minimum 8.5ml

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

N/A

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Uricase peroxidase

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

No significant interferences.

Reference Ranges

n/a

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

URINE UREA

Indication

Used in the assessment of renal function. Urea is a product of protein metabolism and reflects protein intake and metabolism.

Tube/Minimum Volume

2.5L Container(s) with no preservative (24hr Urine Collection)

White Top 25mL Universal (Spot Urine) – Minimum 10ml

8.5ml Urine monovette tubes – minimum 8.5ml

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Urease with glutamate dehydrogenase GLDH

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

n/a

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

URINE VMA/URINE METANEPHRINES/URINE METADRENALINE/CATCHOLAMINES (ADULT)

Indication	Used to diagnose Phaeochromocytoma in sporadic and familial cases. Genetic conditions with predisposition include: MEN 2, von Hippel-Lindau syndrome and Neurofibromatosis type 1.
Referral Laboratory	Specialist Laboratory Medicine Biochemical Genetics Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	24 hour urine container 
Sample Type	Urine
Minimum Volume	5mL
Special Collection Requirements	Sample must be less than 8 days old. Record urine volume (in litres).
Additional Information	Random sample acceptable for paediatric patients.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	11 Days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly (weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

VALPROATE

Indication

Monitoring valproic acid concentrations in serum helps to individualize drug therapy for safe and effective control of absence seizures, other generalized seizures, and partial seizures.

Serum valproic acid monitoring is useful to assess patient compliance, or to explain changes in seizure control or drug toxicity.

Tube/Minimum Volume

White top Serum - Minimum 1mL

Sample volumes stated are for guidance only, Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

To obtain a serum valproic acid concentration that best represents the peak tissue level, draw the sample 1–3 hours after an oral dose is given. Collect a trough sample just before the next scheduled dose.

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Method

Enzyme Multiplied Immunoassay Technique (EMIT)

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

Reference Ranges

50-100 mg/L

Turn-around Time

	Serum
Urgent Samples	2 hours
Routine in-patients	2 hours
OP/GP	24 hours

Frequency of Testing

Daily

Unique Identifier and Version Number

LI 820 295 Valproate version 1.3

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

VANCOMYCIN

Indication

Used for therapeutic monitoring and assessing the risk of ototoxicity.

Electrolytes and creatinine should also be monitored regularly

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

Pre/Post/Unknown Dose must be specified, Samples should not be taken from the site of the venous catheter where vancomycin has been administered

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Competitive immunoassay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

No significant interferences have been observed against Haemolytic, Icteric or Lipaemic interferents.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

For further details see the following links
https://intranet.cht.nhs.uk/clinical-information/antibiotics/

Turn-around Time

Urgent Samples – 4 hours

Routine Inpatients – 4 hours

OP/GP – 24 hours

Frequency of Testing

Daily

Unique Identifier and Version Number

LI 820 166 Vancomycin version 8.2

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

VARICELLA ZOSTER SEROLOGY

Indication

IgG - detection of past infection, immunity to varicella zoster. This is necessary in pregnant or immunocompromised patients who cannot provide a robust history of previous chicken pox infection.

IgM - may confirm recent varicella zoster infection.

Tube / Minimum Volume

Serum Gel- 7.5ml.

Sample Collection

Venepuncture as per CHFT policy.

Sample can be taken at any time to establish immunity. There is no point taking a sample for IgM post exposure as antibodies will not be present. Testing in this circumstance (if required) should take place 2-3 weeks post exposure, although this is rarely required. Varicella zoster infection is usually easily diagnosed clinically.

Transport

To the laboratory as soon as possible.

Clinical Details Required

Timing of contact in relation to sample.

Method

Screening test locally.

Interpretation

IgG positive - indicative of past exposure/immunity to varicella zoster.

IgG negative - no evidence of immunity. Patient may be at risk if they have been exposed to varicella zoster. Discuss with microbiology if required.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

IgM in particular - timing in relation to the exposure is critical.

Turn-around Time

Same day for urgent requests - call the microbiology laboratory to arrange.

Frequency of Testing

Daily for urgent specimens. Monday - Friday for routine specimens.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

VERY LONG CHAIN FATTY ACIDS

Indication	Peroxisomal disorders e.g. Refsums, X-ALD, Zellwegers syndrome etc.
Referral Laboratory	Department of Clinical Chemistry Sheffield Children's Hospital Western Bank Sheffield S10 2TH
Specimen Tube Required	Lithium Heparin Tube 
Sample Type	Plasma
Minimum Volume	1ml
Special Collection Requirements	None
Additional Information	Lithium Heparin plasma preferred, serum or fluoride acceptable.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via Royal Mail 1st Class Post or on dry ice via courier if the sample has been frozen.
Turnaround Time	1 Week - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

VIRAL ENTERIC PCR TESTING (NOROVIRUS)

Indication

Suspected viral gastroenteritis.

Diarrhoea and vomiting and can include abdominal pain, nausea, pyrexia and headache and last for 2-3 days.

Tube / Minimum Volume

Blue top container with scoop.

Sample collected from faeces that has been passed into a clean, dry, disposable bedpan or similar using the scoop attached to the lid of the collection pot. 1-2g of stool is sufficient (1 full scoop full). If stool is liquid, 1-2ml is sufficient. Care must be taken to ensure the container lid is tightly sealed.

Transport

Transport to lab within 24 hrs of collection. If delay anticipated can be placed in refrigerator 2-8ºC for 5 days. Protect sample from excessive heat.

Clinical Details Required

Symptoms. Date of onset. Outbreak investigation

Method

PCR on BD-MAX analyser: detects nucleic acids from

- Norovirus GI & GII
- Rotavirus A
- Adenovirus F40/41
- Sapovirus (genogroups I, II, IV, V)
- Human Astrovirus (hAstro)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Interpretation

POSITIVE: Suggestive of infection with one of the above viruses. Review result in clinical context as result does not necessarily indicate the presence of viable organisms. It does however indicate the presence of target DNA/RNA.

NEGATIVE- does not exclude viral gastroenteritis as false negative results may occur due to loss of nucleic acid from inadequate collection, transport or storage of specimens.

Known Interfering Factors

Not stated

Turn-around Time

24-48hrs

Frequency of Testing

Monday-Friday: Twice daily (10:00hrs and 14:00hrs).

Weekends: 12:00hrs

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Patients at risk of malabsorption or significant liver disease. Ataxia screen.
Referral Laboratory	Specialist Laboratory Medicine Block 46 St James hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Plain Tube 
Sample Type	Serum
Minimum Volume	150µL
Special Collection Requirements	Collect after overnight fast where possible or 8 hours post treatment if on oral supplements or parenteral nutrition.
Additional Information	Protect samples from light as much as possible.
Storage in Laboratory	Separate and freeze serum on day of collection.
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	9 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

VITAMIN B12

Indication.

Low vitamin B12 intake, gastrectomy, diseases of the small intestine, malabsorption, and trans-cobalamin deficiency can cause vitamin B12 deficiency.

Clinical and laboratory findings for B12 deficiency include neurological abnormalities, decreased serum B12 levels, and increased excretion of methylmalonic acid. The impaired DNA synthesis associated with vitamin B12 deficiency causes macrocytic anaemias.

Pernicious anaemia is a macrocytic anaemia caused by vitamin B12 deficiency that is due to lack of intrinsic factor.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated are for guidance only, Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Competitive immunoassay using direct chemiluminescent technology.

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs. Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Known Interfering Factors

No significant interferences have been observed Lipaemic interferents. Results for Vitamin B12 cannot be reported on haemolysed specimens that contain above 1.5g/L Hb, or on Icteric samples that contain 342 umol/L Bilirubin

Reference Ranges

211-911 ng/L

Turn-around Time

Urgent Samples – 24 hours

Routine Samples (Inpatient) – 24 hours

OP/GP Samples – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

VITAMIN D

Indication

Used primarily to assess possible osteomalacia/rickets caused by vitamin D deficiency.

Tube/Minimum Volume

Brown Gel (Serum) - Minimum 1mL

Sample volumes stated for guidance only. Electronic requesting systems will calculate total sample volume and the number of tubes required.

Sample Collection

n/a

Transport

Transport to the lab as soon as possible.

Clinical Details Required

Please give relevant details on the request form.

Method

Competitive Immunoassay

Interpretation

Results are reported on EPR/ICE and as a paper/electronic report to outpatients/GPs
Results which meet the critical limit criteria (LI 820 242) will be phoned ASAP unless previously reported as abnormal.

Known Interfering Factors

n/a

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Reference Ranges

Deficiency	<25 nmol/L
Insufficient	25-50 nmol/L
Sufficient	>50 nmol/L

Based on the Royal Osteoporosis Society Guideline Apr 2020

Turn-around Time

Urgent Samples – 24 hours

Routine Inpatients – 24 hours

OP/GP – 24 hours

Frequency of Testing

Daily

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication	Patients at risk of malabsorption or significant liver disease. Ataxia screen.
Referral Laboratory	Specialist Laboratory Medicine Block 46 St James Hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Plain Tube 
Sample Type	Serum
Minimum Volume	150µL
Special Collection Requirements	Collect after overnight fast where possible or 8 hours post treatment if on oral supplements or parenteral nutrition.
Additional Information	Protect samples from light as much as possible.
Storage in Laboratory	Separate and freeze serum on day of collection.
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	9 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekly

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

VOLTAGE GATED CALCIUM CHANNEL ANTIBODIES (VGCC)

Indication	Lambert-Eaton Myasthenic Syndrome (LEMS). Cerebellar ataxia with small cell lung carcinoma.
Referral Laboratory	Immunology Laboratory Churchill Hospital Old Road Headington Oxford OX3 7LE
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml. Plasma is acceptable but CSF not required.
Special Collection Requirements	None
Additional Information	None
Turnaround time	21 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Not stated.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **VGCC**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	NPEx
Packaging	Wrap each individual sample in absorbent paper and pack samples and NPEx Manifest in red sample bags. Place packed samples in Transport boxes and seal ready for posting.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

VOLTAGE GATED POTASSIUM CHANNEL ANTIBODIES (VGKC)

Indication	Acquired neuromyotonia, Morvan's syndrome, limbic encephalitis (paraneoplastic and idiopathic) and patients with facio-brachial dystonic seizures (FBDS). LGI1/CASPR2 antibody testing is conducted as a first line test when investigating for VGKC antibodies.
Referral Laboratory	Immunology Laboratory Churchill Hospital Old Road Headington Oxford OX3 7LE
Specimen Tube Required	Gel Tube 
Sample Type/Minimum volume	Serum - 5ml. Plasma and CSF are acceptable.
Special Collection Requirements	None
Additional Information	None
Turnaround time	14 working days - from receipt of sample at referral laboratory. *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of testing	Not stated.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Laboratory Preparation *(for laboratory use only)*

Labelling and booking	Assign unique laboratory barcode number; affix a barcode to request form and primary sample. Book request into the laboratory system using test code: **VGKC**
Preparation	Centrifuge Primary sample.
Storage	Refrigerate prior to sending.
Additional Information	Samples should be prepared and stored for referral following document *LI 990-104 Instructions for processing Immunology samples in specimen reception.*
Urgent requests	This test is not considered urgent. Samples can be stored until the next working day.
Arrangement during public holidays	No special arrangements required. Samples can be stored until the next working day. Check opening times for referral laboratory.

Posting Instructions *(for laboratory use only)*

Method of transport	Transport at ambient temperature via Royal Mail 1st Class Post.
Method of sending patient/test info.	NPEx
Packaging	Wrap each individual sample in absorbent paper and pack samples and NPEx Manifest in red sample bags. Place packed samples in Transport boxes and seal ready for posting.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

VON WILLEBRAND SCREEN

Indication

Investigation into unexpected episode (or a history) of mucosal bleeding, menorrhagia. Excessive bleeding following tooth extraction and/or minor surgery, epistaxis. vWD may also explain the presence of a persistently raised APTT.

Tube/Minimum Volume

Whole Blood
Two Sodium citrate (green top) 3ml tubes
NB Each tube MUST be filled exactly to the line.

Sample Collection

Clean venepuncture with minimum venous stasis. Mix citrated tube gently after collection.

Transport

Routine transport to laboratory as soon as possible. Specimens may be delivered by the following routes:-
Pneumatic tube system, phlebotomists, Trust personnel, Trust transport drivers, external medical personnel, White Knights and private hire personnel

Clinical Details Required

Details regarding current bleeding episode and any historical information. Family history may also be helpful.

Method

Automated coagulation analyser.

Interpretation

The screen tests the functional activity of the various components of the factor VIII molecule ie:

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

F8A: Factor VIII assay (coagulant level)
vWFAg: von Willibrands FAg (antigen level)
vWFAct: equivalent to the Ristocetin co factor (activity level)

Levels of each component vary depending on the subtype of vW disease.
NB Two abnormal screens are required for a positive diagnosis.

Known Interfering Factors

Grossly haemolysed and lipaemic samples are considered unsuitable for analysis. Samples with clots will be rejected.
Inhibitors present such as lupus anticoagulants or factor eight inhibitors may also affect the factor VIII result.

Reference Ranges

Factor VIIIa	70 – 150 IU/dL
vW Factor Antigen	50 – 160 IU/dL
vW Factor	49.5 – 187.0 IU/dL

Critical Phone Limits

Low results phoned after discussing with Consultant Haematologist.

Turn-around Time

1-2 weeks.

Frequency of Testing

Weekly
Note: This test can be done urgently in exception circumstances. Please contact the haematology laboratory

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

VORICONAZOLE LEVEL

Indication

Monitoring of voriconazole levels - required for patients on voriconazole for > 7 days.

Sample Type/Tubes and Minimum Volumes

Serum

node://28903

Clinical Details Required

Indication

Timing of Sample Collection

Trough levels (pre-dose)

Interpretation

Trough Levels should be > 2.0mg/L and < 5.5mg/L.

Known Interfering Factors

Not stated

Reference Laboratory Address

Mycology Reference Laboratory
The General Infirmary
Leeds
LS1 3EX
0113 392 6787

Reference Lab Website

http://www.pathology.leedsth.nhs.uk/testandtubes/ShowTest.asp?ACT=ShowTest&TestID=879

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Contact Telephone Number

tel:0113 392 6787

Expected Turn-around Time

8 days

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Indication	Diagnosis and monitoring of cystinosis.
Referral Laboratory	Biochemical Genetics Block 46 St James hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Lithium Heparin Tube 
Sample Type	Whole blood
Minimum Volume	3mL
Special Collection Requirements	At venepuncture sample must be well mixed to prevent clots. Collection date and time must be recorded as samples should be tested within 24 hours of venepuncture and kept at room temperature.
Additional Information	Sample should be tested within 24 hours of collection. Processing time is 2.5 hours this should be taken in to consideration
Storage in Laboratory	Store primary tube at room temperature in a designated room.
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	28 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Monthly (Weekdays)

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Lysosomal storage disorders
Referral Laboratory	Willink Biochemical Genetics Laboratory Genomic Diagnostic Laboratories Lysosomal Section 6th Floor, Pod 1 St Mary's Hospital Oxford Road Manchester M13 9WL
Specimen Tube Required	EDTA 
Sample Type	Whole Blood
Minimum Volume	5 mL
Special Collection Requirements	Must reach the referral laboratory within 72 hours of venepuncture.
Additional Information	Sample must not be collected at CHFT on Fridays as sample must be analysed within 72 hours of collection.
Storage in Laboratory	Refrigerate prior to sending
Transportation to Referral Laboratory	Transport at ambient temperature via courier.
Turnaround Time	4 working weeks - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	As and when required

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

WOUND SWAB

Indication

Suspected wound infection.

Do not send if there is no clinical evidence of wound infection.

Tube / Minimum Volume

Swab in Amies transport media

Sample Collection

Samples of pus or exudate are preferred. If only a tiny amount, then swab should be placed in transport media. Swabbing dry crusted areas is unlikely to yield a pathogen. If swabbing an ulcer, the debris on the ulcer should be removed prior to swabbing.

Transport

Send to laboratory as soon as possible.

Clinical Details Required

Antibiotic therapy. If history of bite/burn/trauma. Travel history. If diabetic.

Method

Culture onto agar plates depending on clinical details provided. Sensitivity testing where pathogens identified.

Interpretation

Requires clinical correlation. The most common pathogen isolated is *Staphylococcus aureus* followed by beta-haemolytic streptococci. The swab must be interpreted in relation to the clinical appearance of the wound - if it is not clinically infected, then the culture results may represent colonising flora only which is not an indication for antibiotic therapy. Discuss with microbiology if unsure.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

Known interfering factors

Method of sampling. Transport time.

Turn-around Time

48 -72 hours

Frequency of Testing

Monday - Saturday

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Calderdale and Huddersfield NHS
NHS Foundation Trust

YERSINIA ANTIBODIES

Yersinia serodiagnosis was withdrawn by Public Health England on 28th July 2015 - no other laboratory is offering an accredited serological test.

The recommended method for the diagnosis of suspected Yersiniosis is the culture of Yersinia species from faecal specimens.

Samples received for serological diagnosis of *Yersinia* will be rejected by the laboratory.

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.

Indication	Deficiency or toxicity suspected.
Referral Laboratory	Specialist Laboratory Medicine Trace Metals Block 46 St James hospital Beckett Street Leeds LS9 7TF
Specimen Tube Required	Plain Tube 
Sample Type	Serum
Minimum Volume	1mL (0.5mL Paediatric)
Special Collection Requirements	None
Additional Information	None
Storage in Laboratory	Refrigerate prior to sending.
Transportation to Referral Laboratory	Transport at ambient temperature via CHFT Hospital Transport
Turnaround Time	7 days - from receipt of sample at referral laboratory *It is our aim to ensure all results are reported within 42 days. The Trust has little control of turnaround times for referred samples.*
Frequency of Testing	Weekdays

The revision/review history of this page is held in the Pathology Quality Management System (Q-Pulse). Please contact the Pathology Quality Manager for a copy if required. The information above can only be considered valid on the day of viewing. Any printed or electronic copies will be non-controlled documents that may not reflect the most current version.