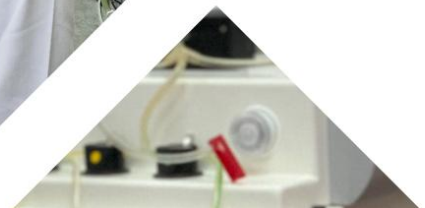


LABORATORY HANDBOOK

8TH EDITION



DOCUMENT NUMBER:	LAB-HB-001/Version 8
EFFECTIVE DATE:	07/10/2026
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REVISION HISTORY		
Version #	Date Revised	Description
1	01/03/2016	Handbook created
2	14/10/2019	Added Urgent Request, Amended Report and Outsourced Lab Tests policy. Added blood culture collection, Added list of urine preservatives, Added new statements in Transportation of Specimen, Updated Critical Value List, Updated STAT tests with TAT, Removed Andrology and Embryology section, Rearranged test catalogue in alphabetical sauce. <u>Added new tests:</u> Vit D, Albumin (Fluid/CSF), Alcohol (Blood/Urine), Amylase (Fluid/Urine), Blood Gas, ACR, CCR, Glucose (Urine/Fluid), Cortisol Urine, Phenytoin, Phenobarbital, UIBC, TIBC, PIVKA, Theophylline, Trop-I, Trop-I (Risk), Triglycerides Fluid, Phosphate (Urine), Acinetobacter screening, Respiratory Viral Panel (CR), Respiratory Virus screening, A-HBc IgM, A-HBe, HBeAg, Hep B confirmatory, Hep C confirmatory, HIV Ab Confirmatory <u>Removed tests:</u> IgA, IgG CSF, IgM, Bleeding Time, Semen C/S, Chlamydia trachomatis Antigen, DNP, Respiratory Adenovirus, RSV
3	05/07/2021	Updated Organisation Chart, Added Add-On Request policy, Added new statements under Specimen Collection for Laboratory Testing, Added new statements under Transportation of Specimen, Updated critical result list <u>Added new tests:</u> Cortisol (Urine), Cortisol (24hr urine), Cryoglobulin test, SARS-CoV-2 IgM, SARS-CoV-2 IgG, Fungal Microscopy and Culture, Salmonella typhi IgM/IgG/ <u>Removed tests:</u> PIVKA, Glucose (Urine), Infectious Mononucleosis/ <u>Revised test info:</u> Cortisol, Urine Drug Screening, HbA1c, Microalbumin, RSCS, Faecal Occult Blood, C.difficile toxin, Faecal Adenovirus Antigen, Faecal Rotavirus Antigen, ZN stain
4	24/08/2022	Added safe disposal under specimen collection, Updated 24 hour urine preservatives, Added nasal/nasopharyngeal specimen collection, Updated diagram for specimen labelling, Updated critical result list, Updated list of STAT

		tests, Added Test Catalogue (Send-out), Moved Test Catalogues and List of STAT tests as annex documents <u>Added new tests:</u> CT/NG, CSF Lactate, CSF LDH, Cyclosporine, Ethanol, Ethanol (Urine), Fluid Albumin, Fluid Amylase, Fluid Lactate, Fluid LDH, Fluid Sodium, Fluid Triglycerides, Gastrointestinal PCR, Meningitis/Encephalitis PCR, Tacrolimus <u>Removed tests:</u> Benzodiazepines, High Vaginal Swab C/S, TIBC, UIBC <u>Revised test info:</u> Widal/Weil Felix, ESR, Direct Coombs Test, Cryoglobulin, Blood Culture, Antibody Screening, Rubella IgG, Rejection Criteria, Method on majority of Biochemistry tests
5	27/01/2023	Updated specimen requirement for urine drug to 2 urine specimen (page 14). Updated urine collection procedure (using vacuum). Update blood culture collection procedure. <u>Removed tests:</u> COVID-19 IgM <u>Revised test info:</u> Triglycerides, HDL Cholesterol, Cholesterol, Lipid Profile, Urine Drug Screen
6	20/08/2023	Updated and included copies of laboratory request forms. Removed ESR tube from list of specimen. Removed uric acid from list of urine that requires preservative Added “Leukodepleted packed cells” under blood products page 24. <u>Added new tests:</u> NT-ProBNP, Respiratory Panel, C3, C4, Anti-CCP, Anti-Thyroglobulin, Anti-Thyroid Peroxidase, Thyroid Receptor Antibody, Thyroglobulin, Insulin, Parathyroid Hormone, Urine Glucose, Urine Ketone, HBV DNA Viral Load, Urea (Urine 24 hours) <u>Removed tests:</u> COVID-19 IgG, BNP <u>Added new outsourced tests:</u> NICE Basic, NICE Extended, Parathyroid Hormone <u>Revised test info:</u> Widal/Weil Felix, Typhoid antibody, Rickettsial serology, Uric Acid, Amylase, Cryoglobulin Test, outsourced tests
7	17/09/2024	Added Customer Feedback Process. Updated laboratory request form. Updated Sample Transportation. Updated Blood Product request codes. Updated Transfusion Reaction sample requirements. Remove requirement for Blood Bank Request Form for emergency release case. Updated list of STAT tests. Change Blue Top volume requirement to “Up to indicated line on tube”. <u>Added new tests:</u> Thyroid Autoantibodies, Fluid Chloride, Fluid Creatinine, Fluid Potassium, Fluid Urea, MTB/RIF <u>Removed tests:</u> Glucose Tolerance Tests (3 Specimen), Immunoglobulin G, Thyroid Function Test 2 (TFT2) <u>Revised test info:</u> Arterial/Venous Blood Gas, Diabetic Studies, Glomerular Filtration Rate. Preservative requirement for urine calcium and creatinine

8	07/10/2026	Updated Blood Transfusion Request Form. Updated Critical Result List. Added Patient Information Section. Updated List of STAT tests. Added another step under Specimen Collection and Laboratory Reporting. Minimum Draw Volume for Blood Culture. <u>Added new inhouse tests:</u> Pneumonia PCR Panel, Environmental Sampling, Glucose Tolerance Test, Bilirubin (Fluid) <u>Removed in-house tests:</u> Anti-Streptolysin O Titre, Rubella IgG, Gastrointestinal PCR, Rickettsial Serology, Typhoid Antibody, Widal/Weil Felix <u>Revised test info:</u> Blood Antibody Screening, Blood Gas, Blood Grouping, Calcium Ionised, Direct Coombs Test, Gastrointestinal PCR, Glucose Fasting/Random, Lactic Acid, Luteinising Hormone, Osmolality, Urine FEME, MTB/RIF, ANA, ANCA, dsDNA, Copper (24hr Urine), Factor 8, Factor 9, Myoglobin (Urine), Paraneoplastic Ab, Stone Analysis, Thiamine (Vitamin B1), Urine Catecholamines 24 Hors, Urine VMA 24 Hours, BCCP, GRCP, Added bicarbonate in GT1GJ, GT5GJ, GT7GJ
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INTRODUCTION

OVERVIEW OF JPMC LABORATORY

As part of the diagnostic services of Jerudong Park Medical Centre, the Department of Laboratory Services is dedicated to delivering high-quality, reliable, and timely laboratory services that support clinical decision-making and disease surveillance, thereby contributing to optimal patient care and outcomes.

In alignment with ISO15189 and JCI, the department places a strong emphasis on patient safety by ensuring accuracy, timeliness, and continual improvement in all aspects of laboratory testing.

Laboratory testing is performed 24 hours a day, seven days a week. Certain tests are referred to approved and accredited reference laboratories.

The Department of Laboratory Services operates the following divisions:

- I. Biochemistry and Immunology
- II. Blood Bank and Transfusion
- III. Haematology
- IV. Clinical Microbiology
- V. Virology and Serology
- VI. Central Specimen Receiving and Management
- VII. Phlebotomy
- VIII. Blood Donation

MISSION STATEMENT

Our department mission is to provide high-quality, timely, reliable and accurate services, using innovative technology, to meet the needs and requirement of our customers.

VISION STATEMENT

Our department vision is to be the premier provider of medical laboratory services in our community.

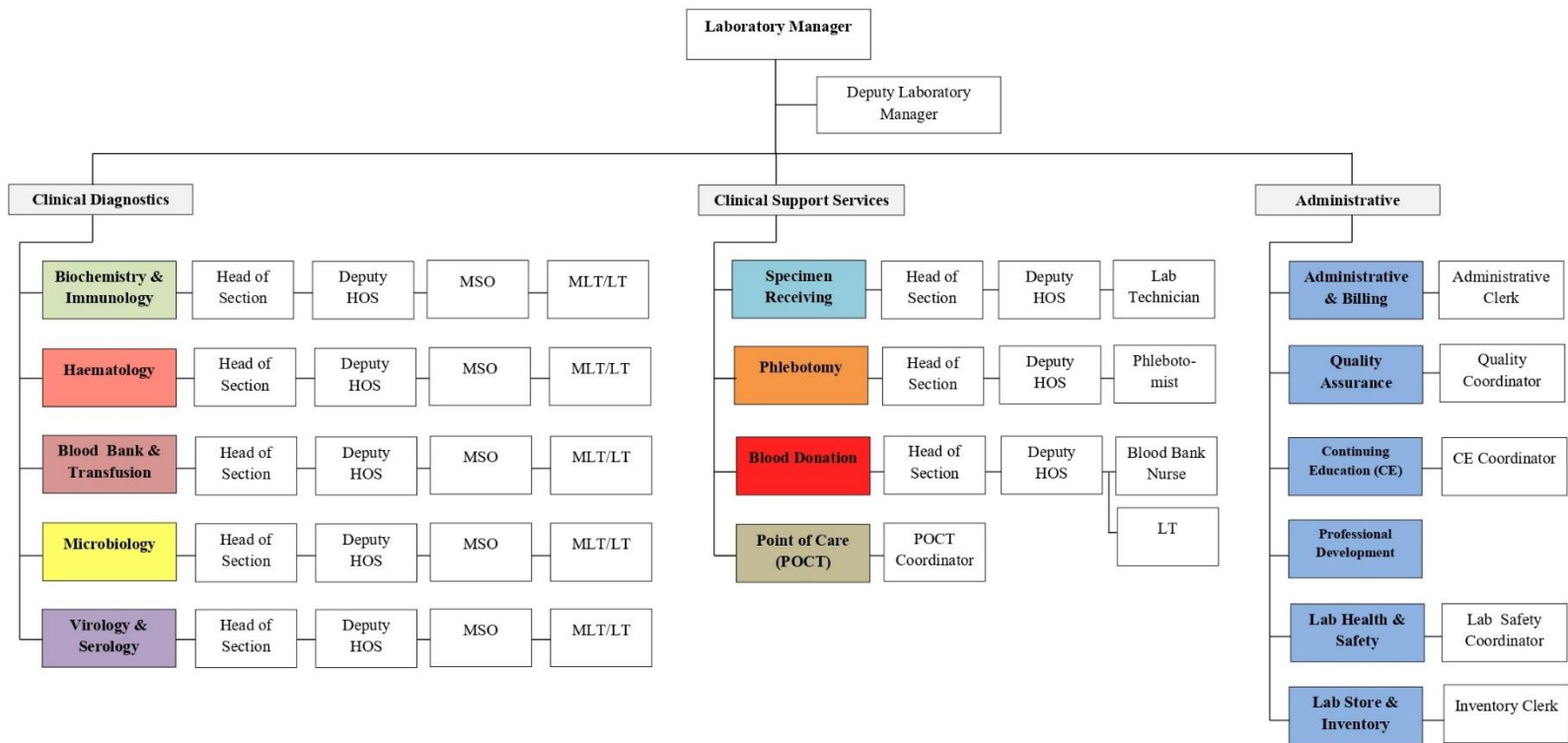
QUALITY ASSURANCE

Our quality management system adheres to our customer requirement, ISO 15189 and JCI accreditation standards to ensure the accuracy and quality of our test results. Our laboratory also participates in external quality assessment (EQA) programs, such as College of American Pathologists (CAP) and Royal College of Pathologist of Australasia (RCPA).

Laboratory only claims conformity to ISO15189 for tests listed in the scope of accreditation.

Refer to changes highlighted yellow

ORGANISATION CHART



HOS – Head of Section
 MSO – Medical Scientific Officer
 MLT – Medical Lab Technologist
 LT- Lab Technician

LABORATORY OPENING HOURS

*Laboratory will be in operation 24/7 for in-patient and urgent outpatient requests

MONDAY TO THURSDAY	08:00AM - 12:00PM 01:00PM - 04:00PM
FRIDAY	08:00AM - 12:00PM 02:00PM - 05:00PM
SATURDAY	08:00AM - 12:00PM
SUNDAY & PUBLIC HOLIDAY	CLOSED

PHLEBOTOMY SERVICE (JPMC)

MONDAY TO THURSDAY	07:30AM - 12:00PM 01:00PM - 03:30PM
FRIDAY	07:30AM - 12:00PM 02:00PM - 04:30PM
SATURDAY	08:00AM - 12:00PM
SUNDAY & PUBLIC HOLIDAY	CLOSED

PHLEBOTOMY SERVICE (JPMC SPECIALIST MEDICAL SERVICES)

MONDAY TO THURSDAY	07:30AM - 12:00PM 01:00PM - 04:00PM
FRIDAY	07:30AM - 12:00PM 02:00PM - 04:00PM
SATURDAY, SUNDAY & PUBLIC HOLIDAY	CLOSED

Refer to changes highlighted yellow

For enquiries, we can be reached at:

Location	Level 1, Jerudong Park Medical Centre
Telephone	+6732611433 (see extension below)
Email	lab.reception@jpmc.com.bn

Section	Extension
Laboratory Manager	2201 / 2382
Administration	2415
Quality Assurance	2416
Phlebotomy (JPMC)	2516
Phlebotomy (PJSC)	(8) 1575
Central Specimen Receiving and Management	2127
Biochemistry and Immunology	2407
Haematology	2408
Virology and Serology	2322
Microbiology	2436
Blood Bank and Transfusion	2320
Blood Donation	2414
Laboratory Store	2381
Point-of-Care (POCT)	2407

CUSTOMER FEEDBACK PROCESS

For any feedback about our laboratory services, please contact us using the information provided above.

1. **Contact Us:** Reach out to us via email, phone, customer feedback form, IR, or in person.
2. **Feedback Assessment:** Your feedback will be reviewed and assessed by our team.
3. **Investigation:** If your feedback requires further investigation, we will take appropriate steps to address your concerns.
4. **Feedback Response:** We will provide a timely response to your feedback, including the results of any investigation if necessary.

CONFIDENTIALITY OF PATIENT INFORMATION

- ✓ Patient personal and medical information is treated with strict confidentiality.
- ✓ Access to patient data is restricted to authorized personnel only.
- ✓ All patient records are maintained securely, and information is released only to individuals or entities authorized by the patient or by law.

REQUESTS FOR LABORATORY TESTING

LABORATORY REQUEST FORM / ONLINE REQUEST

- ✓ It is essential that under all circumstances the request (online and /or via hard copy) be filled out COMPLETELY.
- ✓ The laboratory shall not perform any examination on a specimen without a request form (online or hard copy). **Verbal request is not accepted as an alternative to a request form.**
- ✓ All request details must be filled in and the form MUST clearly show to whom the results are to be reported / communicated to.
- ✓ The ordering physician is responsible for ensuring the following information is entered LEGIBLY and CORRECTLY on the request form:
 - a. Patient's name
 - b. Patient's MRN/PRN
 - c. Patient's identity card no. (IC No)
 - d. Date and year of birth
 - e. Sex of patient
 - f. Ordering location
 - g. Date and time of specimen collection
 - h. Specimen type and/or source
 - i. Name and signature of ordering physician
 - j. Relevant clinical data and diagnosis
 - k. Test requests
- ✓ Manual order must be filled using the "LABORATORY REQUEST FORM" for general tests and "MICROBIOLOGY REQUEST FORM" for Microbiology tests.
- ✓ Blood product request form must be filled using the "BLOOD BANK REQUEST FORM".

URGENT REQUEST

- ✓ Urgent request is marked as appropriate in the request form and will be given priority over routine requests. Urgent request should only be used for results that are required as soon as possible for immediate patient management.
- ✓ Only Short Turn-Around-Time (STAT) tests are processed as Urgent. STAT tests are listed in **Annex B**.

ADD-ON REQUEST

- ✓ Ordering location must send a new requisition form indicating it is an add-on request. Laboratory accepts add-on request if specimen is acceptable for additional testing (i.e. stability, volume). If specimen is no longer suitable, request will be rejected and requesting location informed.

Refer to changes highlighted yellow

 Jerudong Park Medical Centre		Laboratory Numbers		PRN No.: _____ Name: _____ IC/Passport No.: _____ Sex: _____ DOB: _____ Nationality: _____ Tel: _____ Please fill in or stick patient's sticker here	
 Organization Accredited Joint Commission International					
LAB REQUEST FORM		☐ URGENT ☐ ROUTINE			
REQUESTOR DETAILS	Requesting Doctor's Name: _____ Clinic / Ward: _____ Tel Number: _____ ☐ Appointment Date: _____ (AM/PM)	SAMPLE DETAILS	Sampling Date & Time: _____ 24 hrs Urine Total Volume: _____ mL Sample Taken By: _____ ☐ Fasting ☐ Non-Fasting Patient Weight: _____ Kg Patient Height: _____ Cm (For creatinine clearance/Paediatric eGFR (<18 y.o.))	SAMPLE TYPE	
Drug Therapy: _____ (Please note anticoagulant therapy when ordering coagulation test) Last Dose: _____ Date & Time: _____					
TEST REQUESTS					
PACKAGES		SINGLE TESTS			
BNSRC PACKAGES ☐ NSRC1 ☐ NSRC2 ☐ NSRC3 GJ PACKAGES ☐ ANGIOG ☐ GT5GJ ☐ RFTGJ ☐ GJFRL ☐ GT7GJ ☐ GTIGJ ☐ OHS TBCC PACKAGES ☐ BRCP ☐ LICP ☐ NPC2 ☐ COCP ☐ LUCP ☐ PACP ☐ GCCP ☐ LY MCP ☐ PRCP ☐ GYCP ☐ NCCP ☐ TPTPI ☐ HB6 ☐ NPC1 ☐ TPTP2		BIOCHEMISTRY ☐ ALBUMIN ☐ PHENYTOIN ☐ ALP ☐ PHOSPHATE ☐ ALT ☐ POTASSIUM ☐ AMIKACIN - PEAK ☐ RHEUMATOID FACTOR ☐ AMIKACIN - TROUGH ☐ SODIUM ☐ AMMONIA ☐ THEOPHYLLINE ☐ AMYLASE ☐ TOTAL PROTEIN ☐ AST ☐ TRANSFERRIN ☐ BICARBONATE ☐ TRIGLYCERIDES ☐ BILIRUBIN DIRECT ☐ UREA ☐ BILIRUBIN TOTAL ☐ URIC ACID ☐ C3 ☐ VALPROIC ACID ☐ C4 ☐ VANCOMYCIN - PEAK ☐ CALCIUM ☐ VANCOMYCIN - TROUGH ☐ CARBAMAZEPINE ☐ CHLORIDE ☐ CHOLESTEROL ☐ CK ☐ CREATININE ☐ CRP ☐ DIGOXIN ☐ ETHANOL ☐ GENTAMICIN - PEAK ☐ GENTAMICIN - TROUGH ☐ GGT ☐ GLUCOSE - FASTING ☐ GLUCOSE - RANDOM ☐ GLYCATED HAEMOGLOBIN (HBA1C) ☐ IRON ☐ LACTATE ☐ LDH ☐ MAGNESIUM ☐ MICROALBUMIN ☐ OSMOLALITY - BLOOD ☐ OSMOLALITY - URINE ☐ PHENOBARBITAL			
PROFILES		IMMUNOLOGY ☐ AFP ☐ ANTI-CCP ☐ ANTI-THYROGLOBULIN ☐ ANTI-THYROID PEROXIDASE ☐ B12 ☐ BETA-HCG ☐ CA 125 ☐ CA 153 ☐ CA 19-9 ☐ CEA ☐ CKMB ☐ CORTISOL ☐ DHEAS ☐ E2 ☐ FERRITIN ☐ FOLATE ☐ FSH ☐ FT3 ☐ FT4 ☐ INSULIN ☐ LH ☐ METHOTREXATE			
☐ ELECTROLYTES (ELY) ☐ ELECTROLYTES, CREATININE AND UREA (ECU) ☐ CARDIAC ENZYMES (CAR) ☐ COAGULATION PROFILE (COP) ☐ LIVER FUNCTION TEST (LFT) ☐ RENAL FUNCTION TEST (RFT) ☐ THYROID FUNCTION TEST (TFT) ☐ GLOMERULAR FILTRATION RATE (GFR) ☐ LIPID STUDIES (LIP) ☐ IRON STUDIES (IS) ☐ URINE DRUG SCREENING (UDRUG) ☐ ARTERIAL BLOOD GAS (GAS) ☐ VENOUS BLOOD GAS (VBG) ☐ PROTEIN/CREATININE RATIO (PCRTR) ☐ ALBUMIN/CREATININE RATIO (ACR)		☐ NT-PROBNP ☐ PARATHYROID HORMONE ☐ PROCALCITONIN ☐ PROGESTERONE ☐ PROLACTIN ☐ TOTAL PSA ☐ TOTAL TESTOSTERONE ☐ THYROGLOBULIN ☐ TROPONIN I ☐ TSH ☐ TSH RECEPTOR ANTIBODY ☐ 25-OH VITAMIN D TOTAL HAEMATOLOGY ☐ ACTIVATED PARTIAL THROMBOPLASTIN TIME ☐ APTT 50% CORRECTION ☐ APTT RATIO (APTT INCLUDED) ☐ BLOOD FILM ☐ D-DIMER ☐ ESR ☐ FBC ☐ FIBRINOGEN ☐ HAEMOGLOBIN ☐ MALARIA SCREEN ☐ MICROFILARIA SCREEN			
VIROLOGY/SEROLOGY ☐ DENGUE SEROLOGY ☐ FLU/RSV ☐ HEP A AB ☐ HEP B CORE AB ☐ HEP B SURFACE AB ☐ HEP B SURFACE AG ☐ HEP C AB ☐ HIV SCREENING ☐ RPR ☐ SYPHILIS AB		BLOOD TRANSFUSION ☐ ANTIBODY SCREENING ☐ BLOOD GROUP ☐ BLOOD GROUP AND HOLD ☐ DIRECT COOMBS TEST			
ADDITIONAL TESTS REQUESTED					
FOR LAB USE					
BLOOD		PLAIN GREEN	EDTA BLUE	GREY	
URINE		Received By and Date:			
SWAB					
FLUID					
OTHERS					
Doctor's Signature: _____		Date: _____			
JPMC/LAB/LRF/VERO2/19.03.2024		CR No.: RC00004666		Page 1 of 1	

Refer to changes highlighted yellow



MICROBIOLOGY REQUEST FORM

PRN No.: _____
 Name: _____
 IC/Passport No.: _____
 Sex: _____ DOB: _____
 Nationality: _____ Tel: _____
Please fill in or stick patient's sticker here

Laboratory
Numbers

THIS SECTION MUST BE COMPLETED TO AVOID DELAYS IN SAMPLE PROCESSING

Priority: (Routine unless otherwise stated)

☐ **URGENT** All tests: ☐ Yes ☐ No

If no, specify tests: _____

☐ Scheduled appointment date:

 (Date) (Time)

SAMPLE COLLECTION

Date of collection: _____

Time of collection: _____

Taken by: _____

Checked by: _____

ORDERING PHYSICIAN

Name: _____

Ward/Clinic: _____

Signature of Physician: _____

Date Signed: _____

DIAGNOSIS

CURRENT MEDICATION/ DATE & TIME OF LAST DOSE

URINE

- ☐ Routine Urinalysis
☐ Urinalysis + Culture

For culture, list current
antibiotics:

STOOL

- ☐ Microscopy (ova, cyst,
parasites)
☐ Microscopy + Culture
☐ Faecal Occult Blood / Faecal
Immunoassay Test
☐ C.difficile Test

BLOOD CULTURE

- ☐ Aerobic / Anaerobic

Sites: _____

- ☐ Paediatric
☐ Myco / Lytic

CSF/FLUID

Source: _____

- ☐ Cell count with differential

- ☐ Gram Stain

- ☐ Culture

- ☐ Cryptococcus (India Ink)

☐ Others: _____

M/E (GRAM STAIN - IF APPLICABLE) & CULTURE

Specimen Type:

- ☐ Respiratory (Throat, Sputum, Bronchoalveolar lavage,
Endotracheal aspirate, Nasopharyngeal aspirate)

- ☐ Wound / Pus / Abscess

Sites: 1. _____

2. _____

- ☐ Eye ☐ Ear ☐ Nasal ☐ Semen ☐ Tip: _____

- ☐ Genital

- Direct smear (Trichomonas & yeasts) and/or Gram stain & Culture:

- ☐ High vaginal swab ☐ Urethral (Male/Female)

- ☐ Low vaginal swab ☐ Penile

- ☐ Group B Streptococcus (Antenatal)

- ☐ MRSA Screening

Sites: _____

- ☐ Acinetobacter Screening

Sites: _____

- ☐ Sterility Test

Sites: _____

MYCOLOGY

- ☐ KOH prep (Direct Smear)

- ☐ Culture

Specimen Type:

- ☐ Skin

- ☐ Nail

- ☐ Hair

- ☐ Other site: _____

OTHER TESTS

- ☐ AFB Smear & Culture

Sites: _____

- ☐ Fungal Culture

Sites: _____

- ☐ Widal

- ☐ Weil Felix

- ☐ Salmonella typhi IgG / IgM

- ☐ Meningitis / Encephalitis
Panel

- ☐ Gastrointestinal Panel

ADDITIONAL NOTES / TESTS:

LABORATORY USE ONLY

Blood		Others	
Urine		Sputum	
Stool		BC	
Swab		Fluid	

Received by/time/date: _____

Refer to changes highlighted yellow



Jerudong Park Medical Centre


☐ URGENT ☐ ROUTINE

LABORATORY DEPARTMENT

LAB NO:

BLOOD TRANSFUSION REQUEST FORM

Doctor's Name _____	MRN _____
Clinic / Ward _____	Name _____
Date _____	ID No. _____
Time _____	Sex _____
Signature _____	D.O.B _____

SPECIMEN: 1 EDTA Blood Tube

Col'd by: _____	Rec'd by: _____
Date: _____	Date: _____
Time: _____	Time: _____

Clinical History:

Hb (g/L): _____

PLT (X10³/μL): _____

BLOOD TRANSFUSION REQUEST

Please Check the ☐, and indicate No. of Units or amount (mL)
Further Information

☐ Packed Cells : _____	Blood Group (if known) : _____	Rh(D) : _____
☐ Leukodepleted Packed Cells : _____	For Surgery / Transfusion on : _____	
☐ Whole Blood : _____		
☐ Fresh Frozen Plasma (FFP) : _____		
☐ Cryoprecipitate (CRYO) : _____		
☐ Random Platelet Units : _____		
☐ Apheresis Units : _____		

BLOOD TRANSFUSION RECORD

	Unit No.	Group/Rh	Expiry	Vol. (mL)	Issued by	Taken by	Location	Date & Time	Comment
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

Technologist Signature _____
 Date _____
 Time _____

 Remarks: _____

NOTE:
 • Return blood to BloodBank within 30 minutes if not used. • Blood will be held only until 8 am on the 5th calendar day after surgery or reserve date, unless Blood Bank is notified. • Ensure blood boxes are returned to the lab immediately after procedure/transfusion as they are needed for other patients.

BLOOD TRANSFUSION LAB : Ext 2320

CR No.: RC00004666

JPMC/BB/BTRF/VER04/05.09.2024

SPECIMEN COLLECTION FOR LABORATORY TESTING

Perform hand hygiene and wear PPE before collecting specimen from patients

- ✓ Laboratory test results are dependent on the quality of the specimen submitted. If there is any doubt or question regarding the type of specimen that should be collected, please call Laboratory for clarification.
- ✓ The person collecting the sample is responsible in identifying the patient (using at least TWO IDENTIFIERS: Patient Full Name and Date of Birth) prior to collection.
- ✓ Ensure patient is prepared as per test requirement (e.g. fasting status, specimen collected at timed intervals, medication status). Refer to **Annex A**. Test Catalogue for individual test requirement.
- ✓ When there is deviation to the documented collection procedure (e.g. patient not fasting for fasting glucose test, or blood specimen taken from hematoma site), the deviation must be recorded in the request form or communicated to the laboratory personnel.
- ✓ Ensure specimen collection and transportation supplies are not expired.
- ✓ Patients must be monitored for any adverse reactions during or after sample collection procedures.
- ✓ After specimen collection, dispose all disposable PPE and consumables used into the yellow biohazard waste bag. Dispose sharp items (such as needles) into leak-proof and puncture resistant sharps waste container.

BLOOD COLLECTION

- ✓ Collect the blood specimen from a vein and avoid prolonged application of tourniquet (must be less than or within 1 minute) to prevent stasis and hemolysis.
- ✓ To Avoid Hemolysis:
 - Ensure alcohol has dried before venipuncture
 - Use the correct needle gauge when collecting blood sample for pediatric patients and for patient with difficult veins
 - Do not mix the blood tubes vigorously
 - Do not collect specimens from veins where administration of fluids will cause abnormal levels of electrolytes, glucose and drugs.
 - Avoid contamination from heparin locks for coagulation test
 - Collect the specimen into the proper tube or container using the correct sequence of draw

Refer to changes highlighted yellow

- ✓ The following order of draw is recommended when drawing multiple specimen during a single venipuncture:

PAEDIATRIC PATIENTS

ORDER OF DRAW					
CONTAINER	BLOOD CULTURE 	LIGHT BLUE TOP 	PURPLE MICROTAINER 	GREEN MICROTAINER 	YELLOW MICROTAINER 
ADDITIVE	Bacterial Growth Medium	Sodium citrate	K ₂ EDTA	Lithium Heparin	Clot Activator
GENTLE MIX BY INVERSION	8-10 times	6-8 times	10 times	10 times	5 times
MINIMUM DRAW VOLUME	1 mL	Up to line	500µL	600µL	600µL

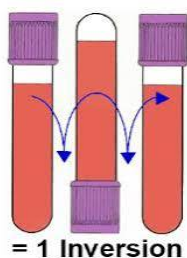
For GTP package, 1 x Lavender Top and 2 x Green Top preferred.

Refer to changes highlighted yellow

ADULT PATIENTS

O R D E R O F D R A W	CONTAINER	ADDITIVES	GENTLE MIX BY INVERSION*	MINIMUM DRAW VOL.
	 BLOOD CULTURE (AEROBIC & ANAEROBIC BOTTLES)	BACTERIAL GROWTH MEDIUM	8-10 times	8-10 mL
	 LIGHT BLUE TOP	SODIUM CITRATE	3-4 times	Up to line
	 SST PLAIN/YELLOW TOP	CLOT ACTIVATOR AND GEL FOR SERUM SEPARATOR	5 times	5 mL
	 GREEN TOP	LITHIUM HEPARIN	8-10 times	4 mL
	 LAVENDER/PURPLE TOP	K2 EDTA	8-10 times	4 mL
	 ROYAL BLUE TOP	K2 EDTA	8-10 times	6 mL
	 GREY TOP	FLOURIDE OXALATE	8-10 times	2 mL

IMPORTANT Invert tubes immediately after collection by gentle inversion (see figure for example of 1 inversion). Improper mixing may cause clot in anti-coagulated blood. Do not shake tube as this may cause haemolysis.



Refer to changes highlighted yellow



Step 1 Apply the tourniquet about 4-6 inches above the venipuncture site. Do not leave tourniquet on for > 1 minute.



Step 2 The vein should be visible while applying the tourniquet. Locating the vein will help in determining the correct size of needle.



Step 3 Clean venipuncture site by 70% Alcohol swab in circular motion starting from the centre moving outward.



Step 4 Wait for alcohol to dry. Avoid touching cleaned site.



Step 5 Insert the needle gently.



Step 6 Once the needle hit the vein, the tube should be insert forward into the holder to puncture the stopper to collect the blood.



Step 7 When the blood begins to flow into the tube tourniquet should be release without moving the needle.



Step 8 The tube should filled until the vacuum is exhausted.
Note: it is important that the evacuated tube be filled completely because some additive tube are provided based on their full collection.



Step 9 Withdraw needle gently.



Step 10 Apply pressure on pricked site using sterile gauze.

Refer to changes highlighted yellow

Rejection Criteria	Main Causes	Corrective Action
Haemolysis	Wrong size of needle (Needle too small)	Use correct size of needle
	Venipuncture performed before alcohol is allowed to dry	Allow alcohol to dry thoroughly
	Prolonged tourniquet time	Release the tourniquet as soon as blood flow is established in the first tube. Limit tourniquet time to 1 minute or less
	Drawing blood on haematoma site	Select a different site. If different site not available, collect distally to the haematoma
	Difficult venipuncture/vein trauma/probing	The needle should be parallel to the vein. Enter at a 30° angle or less. Avoid probing
	Needle occlusion	Needle bevel may be positioned against the vein wall. Pull back slightly on the needle. Avoid rotating or changing the angle of the needle
	Drawing plunger back too forcefully in the syringe (syringe method)	Draw plunger back gently
	Air leakage around the needle or loss of vacuum in the tube	Make sure the needle is fitted securely on the syringe to avoid frothing
	Removing the needle from the vein with the tube still engaged (esp vacutainer method)	Remove tube first before removing the needle from vein
	Pushing on a syringe plunger too hard when expelling blood into a collection device	If there is loss of vacuum in the tube, safely remove the needle and gently transfer the syringe's contents by drizzling the blood down the side of the tube
	Underfilling tube (causes excessive blood-to-additive ratio)	Fill tubes to the correct volume
	Vigorously mixing the tube and frothing of sample	Use gentle inversion only
	Prolonged contact serum/plasma with cells – delayed centrifugation	Send sample to lab for centrifugation within 2 hours after collection
	Exposure to high or low temperature before centrifugation	Do not place the tubes on a counter exposed to extreme temperature variation (e.g. next to autoclave, or directly touching ice pack – except for Ammonia sample). Never refrigerate the specimen before it is centrifuged

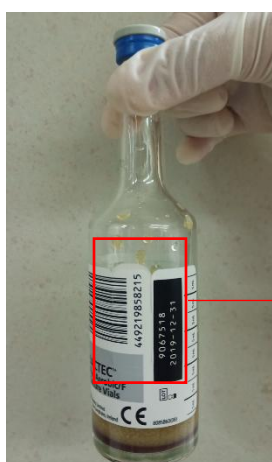
Refer to changes highlighted yellow

	Centrifuging specimen before 30 minutes of collection (before clot formation for SST yellow tubes)	Allow the specimen tube to remain vertical in a rack for a minimum of 30 minutes
Haemolysis/Diluted specimen	Drawing blood from vascular/peripheral IV line	Pause the infusion for at least 2 minutes, flush the line with an adequate volume of saline, and discard enough waste blood to fully clear the flush prior to collecting lab blood specimen
Clotted	Difficult venipuncture/vein trauma/probing	The needle should be parallel to the vein. Enter at a 30° angle or less. Avoid probing
	Specimens not mixed well (poor inversion of the tube)	Mix well and gently invert specimen as soon as possible after collection to avoid clot formation

BLOOD CULTURE COLLECTION

IMPORTANT Must disinfect venipuncture site AND rubber top of blood culture bottles

- If using winged blood collection set, or using needle and syringe, or volume collected is less than recommended volume, inoculate aerobic blood culture bottle first if 1 set (one aerobic and one anaerobic) blood culture is required.
 - If 2 or more sets of blood culture is required, take each set from different sites. Indicate the site on the blood culture bottles and on the request form.
 - Collect specimen for culture ideally before administration of antimicrobial therapy.
-
- ◇ Choose a venipuncture site on the opposite extremity of an infusion.
 - ◇ Clean the venipuncture site with either 70% alcohol antiseptic pad or 2-4% chlorhexidine for at least 30 seconds.
 - ◇ Allow antiseptic or chlorhexidine to air dry completely. Do NOT palpate the site again.
 - ◇ Draw 16-20 mL of blood from adult patients, or 1-3 mL from paediatric patients.
 - ◇ Remove the flap covering the blood culture bottle and disinfect the rubber top with 70% alcohol pad prior to dispensing blood into them. Allow it to air dry.
 - ◇ Divide the blood by injecting the appropriate amount into each culture bottle, i.e. 8-10 mL of blood first into the aerobic bottle and then 8-10 mL into anaerobic bottle for adult patients.
 - ◇ Mix the blood adequately with the medium by inverting the bottles 8 to 10 times gently.
 - ◇ Discard syringes and needles in sharp container.
 - ◇ Label the bottles with patient identification details, the date and time of specimen collection. Do NOT put sticker over the bar code and lot number printed on each bottle.



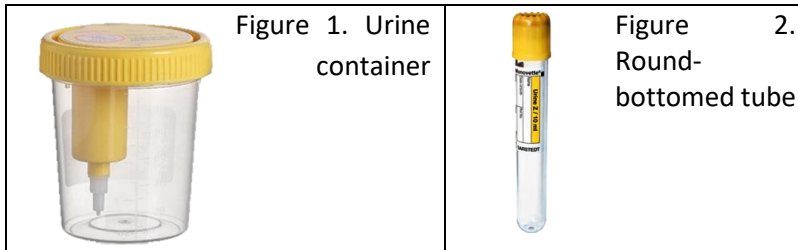
Do not put sticker or cover the bar code and lot number.

- ◇ Send specimen to the laboratory within 2 hours of collection. Specimen should be held at room temperature only. Do NOT refrigerate or freeze.

Refer to changes highlighted yellow

URINE COLLECTION

IMPORTANT Urine specimen for urinalysis and/or culture: 1) Date and time urine sample collected MUST be noted on the urine container, 2) Urine specimen stored at room temperature must be sent within 2-4 hours to the lab. Delayed delivery will result in sample rejection.



After urine specimen is collected in the urine container (Fig. 1), transfer urine to urine tubes (Fig. 2 – prepare separate tubes for Biochemistry test and Microbiology test) according to the test requested.

Transfer as per instructions below:



Gently shake the sample

Partially raise the protective label (Do NOT remove it completely)

Insert the sample tube and make sure the needle penetrates the stopper of the urine tube. Keep the tube connected until it is full (end of flow)

Once tubes filled, remove the sample tube and fully re-stick the protective label

Shake the sample tubes 8-10 times, label the tubes with patient stickers and send to the Lab

- ◇ Do not send the urine container (Fig 1) to the laboratory: 1) unless urine volume is not sufficient to flow through the needle, or 2) for **CT/NG test**

Refer to changes highlighted yellow

Preservatives for random & 24 hours urine collection:

TEST	RANDOM URINE	24 HOUR URINE
Albumin/Creatinine Ratio	No preservative needed	20 to 30 mL of 6M HCL
Calcium	No preservative needed	20 to 30 mL of 6M HCL
Calcium/Creatinine Ratio	No preservative needed	20 to 30 mL of 6M HCL
Magnesium	No preservative needed	20 to 30 mL of 6M HCL
Microalbumin	No preservative needed	20 to 30 mL of 6M HCL
Phosphorus	No preservative needed	20 to 30 mL of 6M HCL
5 HIAA	NA	10 mL of 6M HCL (Send Out)
Metanephrines	NA	10 mL of 6M HCL (Send Out)
Vanillyl Mandelic Acid Homovanillic Acid	NA	20 mL of 6M HCL (Send Out)

- A) **Routine or random Specimen:** The patient is given a collection container and instructed to collect a midstream specimen in the container.
- B) **First voided Specimen:** First morning specimen or 8-hour specimen. The patient should be instructed to collect the specimen immediately after a night's sleep. The bladder is preferably emptied before sleep.
- C) **2-Hours postprandial Specimen:** The patient should be instructed to void shortly before consuming concentrated solution of 50g or 75g glucose or routine meal, and to collect a specimen 2 hours after eating.

D) Clean-catch midstream Specimen:**Patient Instructions: Male**

- ◇ Wash hands thoroughly with soap and water and dry with a paper towel.
- ◇ Pass the initial portion of urine into the toilet bowl. Collect a portion of the remaining urine into a sterile collection container.

Patient Instructions: Female

- ◇ Wash hands thoroughly with soap and water and dry with a paper towel.
- ◇ Spread the labia and keep them apart.
- ◇ Cleanse the urethral meatus from front to back.
- ◇ Pass the initial portion of urine into the toilet bowl. Collect a portion of the remaining urine into a sterile collection container. Avoid contact of container with the legs, vulva, or clothing.

Transport the specimen to the laboratory immediately or refrigerate if transport is delayed.

E) 24-hour timed urine collection

- ◇ Depending on the test, bring 24-hour container to laboratory prior to urine collection for it to be filled with respective preservative.
- ◇ To complete a 24 hour period, start and end collection at approximately the same time in the morning.
- ◇ Do not void directly into container.
- ◇ Collect each specimen in a disposable clean plastic or paper cup and carefully pour into the 24-hour container to avoid splatter or spillage.
- ◇ Patient should be instructed to avoid fecal contamination of the specimen.
- ◇ Refrigerate specimen during and after collection.

Day 1: Discard the first morning specimen (make sure you completely empty the bladder). Record on label: START DATE AND TIME. Begin collecting **ALL** subsequent specimen for the next 24 hours.

Day 2: Collect the last urine specimen exactly 24 hours after the start time, and then **STOP** Collection. Record on label: STOP (FINISH) DATE AND TIME.

- ◇ Tighten lid securely. Keep upright. Transport in a refrigerated container with requisition form as soon as possible after completion.
- ◇ If the amount of specimen exceeds the 24-hour urine container, collect the remaining specimen in a sterile collection container and label as "24-HOUR URINE #2". Note on the request form that 2 containers submitted.

Refer to changes highlighted yellow

- ◇ Dietary restrictions are required before and during the collection period for some tests (For example: Vanillyl Mandelic Acid test). Normal fluid intake is allowed during the collection period.

For Malay version of patient instruction, please call extension 2127

URINE DRUG SPECIMEN COLLECTION

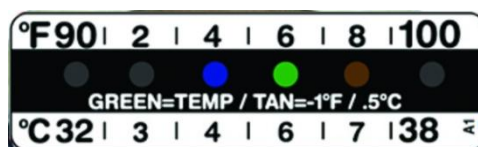


Picture 1 Unused urine container



Picture 2 Properly sealed urine container

- ◇ Make sure that the sterile seal is intact before collecting. (Picture 1)
- ◇ Break the seal right before giving the container to the patient for urine collection.
- ◇ Within 4 minutes after the void, check the temperature is within the acceptable range (32°C to 38°C). Any urine specimen found outside the range, please recollect again.



- ◇ Please collect **2 urine specimens** with at least 20 mL each.
Note: In case of presumptive positive, 1 specimen will be used to send for confirmatory testing upon request by in-charge clinician.
- ◇ After urine collection and temperature check, the collector will then seal the container in the manner as shown in Picture 2. Then both the collector and patient must date, time and initial the seal.
- ◇ Send the sealed container to the laboratory.
- ◇ The laboratory staff will inspect the seal if it is kept intact during transportation. Any signs of tampering will be rejected by the laboratory.

STOOL COLLECTION

- ◇ Urinate before collecting the stool to avoid any urine in the stool sample. Do not urinate while passing the stool.
- ◇ Put on gloves before handling stool.
- ◇ Pass stool (but no urine) into a dry container. A plastic basin may be given that is able to be placed under the toilet seat to catch the stool.
- ◇ Either solid or liquid stool can be collected.
- ◇ Do not collect the sample from the toilet bowl.
- ◇ Do not mix toilet paper, water, or soap with the sample.
- ◇ Fill each container at least 1/3 full. **Do not overfill.**
- ◇ Wash hands thoroughly after removing glove.

SPUTUM COLLECTION

The specimen should be evaluated and recollected if sample appears to be saliva.

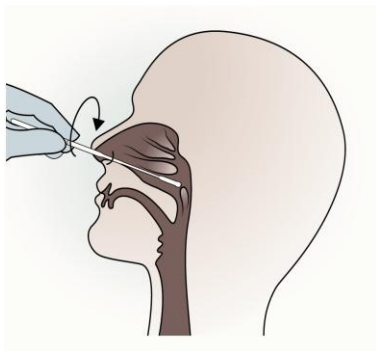
- ◇ Early morning specimens are preferred.
- ◇ Obtain the specimen when the cough is productive.
- ◇ Obtain sputum specimens before antibiotic therapy is initiated.
- ◇ Do not obtain a sputum specimen immediately after a patient has eaten, chewed gum, smoked, brushed teeth or uses mouthwash.
- ◇ Have patient rinse mouth with water to remove gross saliva before attempting cough. (Do not rinse with tap water if Legionella or AFB cultures are ordered)
- ◇ Send all specimens to the laboratory immediately in sterile screw-cap containers.

Mycobacterium tuberculosis (TB) Sputum Culture:

- ◇ Submit three first-morning expectorate sputum samples, collected on three different days. Label the sample accordingly, i.e. "1st Sample (Date: dd/mm/yy)", "2nd Sample (Date: dd/mm/yy)" and "3rd Sample (Date: dd/mm/yy)".
- ◇ At least 3 mL sputum is required for AFB cultures.
- ◇ Refrigerate the samples

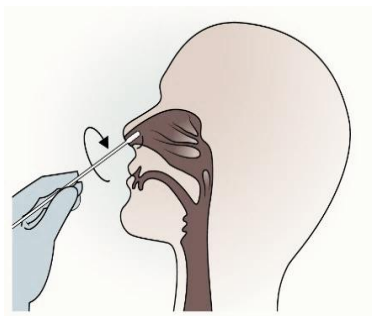
Refer to changes highlighted yellow

NASOPHARYNGEAL SWAB COLLECTION



- ◇ Slightly tilt patient's head.
- ◇ Insert flexible swab through nares parallel to palate until:
 - a. Resistance is met, OR
 - b. Distance is equivalent to half the distance from the patient's ear to their nostril
- ◇ Gently rub and roll the swab.
- ◇ Leave swab in place for several seconds to absorb secretions.
- ◇ Slowly remove the swab while rotating it and immediately place in sterile tube (see individual test for specimen container requirement).

NASAL SWAB COLLECTION



- ◇ Slightly tilt patient's head.
- ◇ Insert swab about 2cm into a nostril.
- ◇ Gently rotate swab against the nasal wall for 5-10 times. Repeat collection procedure with second nostril.
- ◇ Slowly remove the swab and immediately place in sterile tube (see individual test for specimen container requirement).

SPECIMEN COLLECTION FOR FUNGUS

- ◇ **Skin:**
Wipe area with 70% alcohol and allow to dry completely. Scrap skin area using a scalpel blade gently to collect infected scales into a sterile container.
- ◇ **Scalp and Hair:**
Wipe area with 70% alcohol and allow to dry completely. Scrap scalp area gently to collect infected material (if scalp) or pull hair from affected scalp lesion, and place into a sterile container.
- ◇ **Nails:**
Wipe top and underside of nail with 70% alcohol and allow to dry completely. Collect nail clippings and place into a sterile container.

Other specimens may be submitted in a sterile container, tube or envelope; do not add saline or any other fluid to the container.

Submit specimens within 24 hours. Store and transport specimens at room temperature only.

SURGICAL PATHOLOGY TISSUE COLLECTION

- ◇ Specimens should be immersed in 10% formalin as soon as possible but within 1 hour of the biopsy or resection procedure. Use at least 3-4 times formalin to tissue volume.
- ◇ The following information must be legibly recorded on the label sticker on the specimen container (not the lid):
 - Patient's full name
 - Medical Record Number or other unique identifier
 - Date when specimen was obtained
 - Name of physician
 - Specimen type (and anatomical origin of site)

NOTE: HISTOPATHOLOGY SPECIMEN ARE OUTSOURCED TO A REFERRAL LAB

SUREPATH PAP TEST COLLECTION**Broom-Like Device Protocol**

1. Obtain an adequate sampling from the cervix using the Rovers Cervex-Brush. Insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix. Push gently, and rotate the broom in a clockwise direction five times.
2. Put the broom as quickly as possible into the BD Sure Path[®] solution vial by dropping the detachable head of the device into the vial. Discard the collection device.
3. Tighten the cap so that the torque line on the cap passes the torque line on the vial.
4. Record the patient's name and ID number on the vial, and the patient information and medical history on the cytology requisition form. Send the SurePath vial to the lab for processing.

NOTE: SUREPATH SPECIMEN ARE OUTSOURCED TO A REFERRAL LAB

SPECIMEN LABELLING

◇ The person collecting the blood sample is responsible for transcribing the following info or at least two identifiers (patient's name, and date of birth or PRN or Doc No.) on all sample containers:

- Patient's name
- Patient's MRN/PRN
- Patient's document number (IC No. or passport)
- Date and year of birth
- Sex of patient
- Computer assigned lab # (if ordered through Vesalius)

Indicate source or site of sample if several samples are to be collected, e.g. swabs for culture, tissues

- ◇ Label tubes in the presence of the patient and right **after** the collection of the samples. Do not practice pre-labelling of the sample containers or tubes.
- ◇ Failure to properly label the tubes will require the specimens to be redrawn or recollection.
- ◇ The instructions below apply to all specimen tubes and containers (blood and non-blood):



Label the tube by placing the patient sticker straight vertically

Leave a window when labelling, to view the volume and quality of sample.



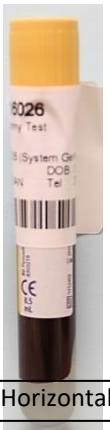
Cut sticker if the size covers the tube (must leave at least HIS-generated barcode, MRN, Full Name and Doc No.)

Stick patient sticker in the **same orientation** over the existing container label (e.g. from the top to bottom for blood tubes)

Do NOT label tube improperly as shown below



Twisted



Horizontal



Crinkled



Bottom-up (blood tube)



Lower part of barcode covered during testing, analyser unable to read

SPECIMEN HANDLING AND TRANSPORT

- ◇ All **IN HOUSE TEST** description and requirements related to type of blood collection devices, preservatives, sample volumes, etc. of different laboratory tests can be found in the test catalogue.
- ◇ For any special requests / send out test, or if in doubt for what container to use, please contact or phone the laboratory (office hours) to confirm type of blood container, blood volume, preservative and transport requirements. Microtainer systems are not ideal for send out test, it is available for pediatric and neonatal patient only.
- ◇ All specimens must be in properly sterile closed/capped container to avoid leakage. All specimen must be handled with care and treated as potentially infectious.

TRANSPORTATION OF SPECIMEN

- ◇ Send specimens to the laboratory promptly to maintain their integrity.
- ◇ Unspun or unprocessed (uncentrifuged) blood specimens must be delivered **within 2 hours of collection**. Failure to separate red cells from serum or plasma within 2 hours may result in inaccurate test results.
- ◇ Some tests require immediate transport or rapid centrifugation after collection—such as Ammonia, Blood Gas, and Lactate. Please refer to the test catalogue for individual test requirements.
- ◇ Do **not** refrigerate unspun blood specimens before transport, as this can lead to elevated potassium levels.
- ◇ For specimens requiring protection from light, tightly wrap aluminum foil or a paper towel around the tube (but not the stopper). Ensure the tube is shielded from light during storage and transport.
- ◇ All specimens **MUST** be placed in sealed biohazard bag(s). Separate different sample types in different biohazard bag.
- ◇ Place specimen in the Ziploc portion of the specimen bag. Completed request form is to be placed in the outside pocket.
- ◇ Special requirement for transport can be found in the test catalogue for individual test (e.g. specimen requires chilling for Ammonia test).
- ◇ If specimen does not have a specific storage requirements, please store at **room temperature** before courier pick-up.
- ◇ All specimen transported to the laboratory **by hand** or courier must be transported in sealed

biohazard, leak-proof, puncture resistant container tightly closed before transportation.

- ◇ All specimen transported to the laboratory by pneumatic tube must be cushioned with bubble wrap or any suitable padding inside the carrier capsule. Do **NOT** send blood gas, surgical tissue, body fluids, bone marrow specimens and amniotic fluid for cytogenetic examination via Pneumatic Tube Systems.

REJECTION OF SPECIMEN

- ◇ JPMC laboratory will reject unacceptable specimen and inform the respective wards or clinics to request for a recollection for the following:
 - Mislabeled and Unlabeled specimens
 - Insufficient amount for the test requested
 - Haemolysed specimens
 - Inappropriate specimen container or transport media
 - Anticoagulated specimens containing blood clot
 - Improper storage or transport requirement
 - Discrepancies between requisition form and labeled tube
 - Specimen collected at the wrong time (e.g. drug level)
 - Specimen contamination or evidence of leakage

PRECIOUS SPECIMEN

- ◇ Special consideration will be made for precious specimens, where re-collection is not possible, such as normally Sterile Body Fluids (i.e.: pericardial, peritoneal, CSF), Bone Marrow, Fine Needle Aspirates (FNA), Tissue Biopsies/Surgical Specimens, and special timed specimen

The laboratory will proceed with testing only when the ordering physician agrees to accept responsibility for the specimen's identity, signs the Laboratory Precious Specimen Form and returns the form to the laboratory. This information will be recorded and included in the laboratory report.

LABORATORY REPORTING

- ◇ Laboratory results are treated with strict confidentiality. Access to laboratory results is restricted by password use and can only be viewed by the requesting location.
- ◇ Patient test results are available on-line after validation by the laboratory. In case of IT downtime, patient test results will be reported on paper and dispatched to the ordering location.
- ◇ JPMC Laboratory is authorized to release results to ordering physicians or other health care providers responsible for the individual patient's care. Patient or a patient's personal representative requesting results is directed to and processed by the Medical Records Department as per the hospital's Release of Information Policy.

AMENDED REPORT

- ◇ Report that has been revised after release of results will be immediately informed to the requesting doctor or on-call doctor or primary nurse-in-charge.
- ◇ Revised result will be indicated on the report with a remark.
- ◇ The clinic or ward is responsible in ensuring that the original report is discarded, and the latest revised report is attached into the patient's medical record.

OUTSOURCED LABORATORY TESTS

- ◇ For tests that are not available in-house, specimen will be outsourced to an accredited referral laboratory.
- ◇ Laboratory report from referral laboratory will be available on-line through the Laboratory Information System and original hardcopy report will be dispatched to the ordering location.
- ◇ For outsourced tests turn around time, please contact Central Specimen Receiving and Management section at extension 2127.

CRITICAL RESULTS

- ◇ Critical result will be communicated immediately by phone to the requesting doctor. If requesting doctor is not available, on-call doctor or primary nurse-in-charge will be notified according to hospital policy.

Refer to changes highlighted yellow

CRITICAL RESULT LIST

Test	Low	High	Unit
CLINICAL CHEMISTRY			
Amikacin	-	> 10.0 (Trough) > 35.0 (Random or Peak)	mg/L
Bilirubin, total (>1 month to < 1 year)	-	≥ 257.0	umol/L
Calcium	< 1.75	> 3.25	mmol/L
Carbamezepine	-	> 15.0	mg/L
Creatine kinase	-	≥ 10000	U/L
Cyclosporine	< 100	> 800	ng/mL
Digoxin	-	> 2.0	ng/mL
Gentamicin	-	> 2.0 (Trough) > 12.0 (Random or Peak)	mg/L
Glucose (< 1 month)	< 2.6	> 8.3	mmol/L
Glucose (> 1 month to 18 years)	< 3.0	> 25.0	mmol/L
Glucose (≥ 19 years)	< 2.5	> 25.0	mmol/L
Lactate	-	> 5.0	mmol/L
Magnesium	< 0.4	-	mmol/L
Osmolality (Serum)	≤ 190	≥ 390	mOsm/kg
Phenobarbital	-	> 40.0	mg/L
Phenytoin	-	> 20.0	mg/L
Potassium	< 2.5	> 6.0	mmol/L
Sodium	< 120	> 160	mmol/L
Tacrolimus	< 4	> 12	ng/mL
Theophylline	-	> 20.0	mg/L
Troponin-I	-	> 15.6 (Female) > 34.2 (Male)	ng/L
Valproic acid	-	> 100.0	mg/L
Vancomycin	-	> 30.0 (Random or Trough) > 80.0 (Peak)	mg/L
HAEMATOLOGY			
APTT	-	> 100	sec
Fibrinogen	< 80	-	mg/dL
PT-INR	-	> 5.0	-
WBC Count	< 2.0	> 50.0	x 10 ⁹ /L
Absolute Neutrophil Count	< 0.5	-	x 10 ⁹ /L
HB (0-7 weeks)	≤ 60	> 240	g/L
HB (> 7 weeks)	≤ 60	≥ 200	g/L
Platelet Count	< 50	> 800	x 10 ⁹ /L
Malaria Parasites	Positive		
Blast	Present (1st presentation or at relapse)		
MICROBIOLOGY			
CSF Microscopic Examination	Positive for gram stain; Positive India Ink; WBC > 5/uL		

BLOOD TRANSFUSION POLICY

CROSSMATCH REQUEST

Specimen:	Plasma (EDTA, Minimum volume: 1 mL)
Collection:	Freshly drawn sample is required Person collecting the blood must sign/initial on the patient sticker on both blood sample and request form
Specimen Stability:	3 days at 1-6°C. If plasma is separated, then 7 days at 1-6°C.
Rejection Criteria:	Grossly haemolysed
Method:	Column Agglutination using Ortho Vision System or Semi-Automated Method
Useful for:	Performed prior to blood transfusion to determine compatibility between donor's blood and blood of the recipient
Performed:	Daily
TAT:	1 hour, STAT – 40 mins, Emergency Release – 10 mins
Section:	Blood Transfusion (ext 2320)

Type in Blood Product Code, followed by number of products required.	
Blood product	Blood product Code
Whole blood	WB
Packed cells	PC
Leukodepleted Packed cells	LDPC
Fresh Frozen Plasma	FFP
Cryoprecipitate	CRYO
Platelets	PLTC
Plateletpheresis	APH

- ◇ To order crossmatch in the electronic system, please insert blood product code and no. of units required. For example:
 - To request for 4 units of packed cells, the code is PC4.
 - To request for 1 unit of Plateletpheresis, the code is APH1.
- ◇ All blood product requisitions must be ordered and signed by physicians using the BLOOD TRANSFUSION REQUEST FORM.
- ◇ If ward/clinic is using the Vesalius system to request test, they will still need to fill in the BLOOD TRANSFUSION REQUEST FORM in addition to the electronic request and ensure that the Vesalius patient sticker with the lab number is pasted on the blood bank request form.

The requesting physician's name registered into the HIS must be the same name written on the Blood Transfusion Request Form.



GUIDELINES ON BLOOD TRANSFUSION FORM(VESALIUS ORDERS)

1 Appropriately state whether it is an **URGENT** or Routine Crossmatch. Urgent means blood is required within 40 minutes as a patient's life would depend on it. It should not be used for transfusions scheduled for a later date/time.

2 Ensure ALL details are filled by the requesting doctor. Only hand written signature is accepted, stamp signature is not allowed. To ensure that both of the Crossmatch Request Form and Vesalius Form are identically filled in with the same Requesting Doctor and Ordering Location/Ward. If an On-call Doctor has to fill in for the Requesting Doctor due to availability concerns, kindly fill in both of the Doctor's names. In this case, signatures on the form can be done as on behalf.

3 Ensure the patient's sticker is pasted here. For Vesalius patients, use the Vesalius sticker with the correct laboratory number. In the event of HIS downtime, handwrite the patient details, filling every field completely. Ensure that the primary nurse's signature is present on the sticker, which is to confirm that they have double checked the correct details belonging to the correct patient. To ensure the patient details on the Crossmatch Request Form are exactly the same as ordered under the Vesalius Form.

4 The nurse who collected the patient's blood sample **MUST** sign here together with the date and time of the sample collection.

- If no sample is collected, write 'NIL'
- For add-on request, write 'Add-on.'
- For request to use BGH sample, write down the BGH Lab Number.

5 Ensure clinical history is filled out. If Hb is known, please note that down. If requesting for platelets or plateletpheresis, please note down the platelet count.

6 Please tick the correct blood product required and state the amount needed.

7 If known, state blood group of patient.

8 Ensure date of transfusion or surgery date is **ALWAYS** filled.

The form is titled "BLOOD TRANSFUSION REQUEST FORM" and is part of the "LABORATORY DEPARTMENT" at "Jerudong Park Medical Centre". It includes fields for "URGENT" or "ROUTINE" status, "LAB NO.", "Doctor's Name", "Clinic / Ward", "Date", "Time", "Signature", "Specimen: 1 EDTA Blood Tube", "Rec'd by", "Date", "Time", "Clinical History", "Hb (g/L)", "PLT (10⁹/L)", "Blood Group (if known)", "Rh(D)", "For Surgery / Transfusion on", "Packed Cells", "Leukodepleted Packed Cells", "Whole Blood", "Fresh Frozen Plasma (FFP)", "Cryoprecipitate (CRYO)", "Random Platelet Units", "Apheresis Units", "BLOOD TRANSFUSION RECORD" table, "Remarks", "Technologist Signature", "Date", "Time", and "NOTE".

Sample:

- 1x Plasma (EDTA, Minimum volume: 1mL, and **NOT** to use microtainer)
- Nurse who collected patient's sample to provide **signature** on the patient sticker to verify that the nurse has collected from the correct patient.
- Make sure to **NOT** cover the tube fully with the patient sticker and leave a gap so that the blood sample is visible.

The patient sticker is titled "JPMC" and "Lab Sample/Routine". It includes fields for "10000000", "PRN:", "Name:", "Doc No:", "DOB:", and a signature.



GUIDELINES ON BLOOD TRANSFUSION FORM (NON-VESALIUS ORDERS)

1 Appropriately state whether it is an **URGENT** or Routine Crossmatch. Urgent means blood is required within 40 minutes as a patient's life would depend on it. It should not be used for transfusions scheduled for a later date/time.

2 Ensure **ALL** details are filled by the requesting doctor. Only hand written signature is accepted, stamp signature is not allowed.

3 Ensure the patient's sticker is pasted here. For Vesalius patients, use the Vesalius sticker with the correct laboratory number. In the event of HIS downtime, handwrite the patient details, filling every field completely. Ensure that the primary nurse's signature is present on the sticker, which is to confirm that they have double checked the correct details belonging to the correct patient.

4 The nurse who collected the patient's blood sample **MUST** sign here together with the date and time of the sample collection.

- If no sample is collected, write 'NIL.'
- For add-on request, write 'Add-on.'
- For request to use BGH sample, write down the BGH Lab Number.

5 Ensure clinical history is filled out. If Hb is known, please note that down. If requesting for platelets or plateletpheresis, please note down the platelet count.

6 Please tick the correct blood product required and state the amount needed.

7 If known, state blood group of patient.

8 Ensure date of transfusion or surgery date is **ALWAYS** filled.

The form is titled "BLOOD TRANSFUSION REQUEST FORM" and is from Jerudong Park Medical Centre. It includes fields for URGENT/Routine, Doctor's Name, Clinic/Ward, Date, Time, Signature, PRN: 00000000, Name, Doc No, Sex, Nationality, DOB, Tel, and a barcode. There are sections for SPECIMEN: EDTA Blood Type (Cult by, Date, Rec'd by, Date, Time) and Clinical History (Hb (g/L), PLT (10⁹/L)). The BLOOD TRANSFUSION REQUEST section has checkboxes for Packed Cells, Leukodepleted Packed Cells, Whole Blood, Fresh Frozen Plasma (FFP), Cryoprecipitate (CRYO), Random Platelet Units, and Apheresis Units. It also has fields for Blood Group (if known), Rh(D), and For Surgery / Transfusion on. The BLOOD TRANSFUSION RECORD section is a table with columns: Unit No., Group/Rh, Expiry, Vol (mL), Issued by, Taken by, Location, Date & Time, and Comment. It includes a signature line for the Technologist, a date/time field, and a note. At the bottom, it says BLOOD TRANSFUSION LAB: EA 2320, CR No.: RCO0004666, and JPMC/BB/BTRF/VER04-05.09.2024.

Sample:

- 1x Plasma (EDTA, Minimum volume: 1mL, and **NOT** to use microtainer)
- Nurse who collected patient's sample to provide **signature** on the patient sticker to verify that the nurse has collected from the correct patient.
- Make sure to **NOT** cover the tube fully with the patient sticker and leave a gap so that the blood sample is visible.

The patient sticker is a purple rectangular label with fields for PRN: 00000000, Name, Doc No, Sex, DOB, Nationality, and Tel. It also features a barcode and a handwritten signature.

INVESTIGATION OF ADVERSE TRANSFUSION REACTION

Specimen:	<u>Post-transfusion:</u> - Plasma (EDTA, Minimum volume: 1 mL) - Next voided Urine - Donor's blood bag returned in a biohazard bag - Transfusion Reaction Notification Form - Plain/SST Tube (IF requested by the physician for Bilirubin test) - Blood Culture bottles (Only IF doctor suspects bacterial contamination of blood product).
Rejection Criteria:	Haemolysed specimen (a recollection of post-transfusion blood specimen is required to ensure haemolysis is not due to collection procedure)
Method:	Perform initial, primary and/or secondary investigation with pre- and post-transfusion patient's sample
Performed:	Daily
Analytical Time:	STAT

- ◇ The attending physician or nurse in-charge must immediately inform the Blood Transfusion Section if any transfusion reaction occurs, and transfusion of the blood product must be discontinued if major symptoms are observed. Reconfirm the identification of patient and the blood product infused with the Blood Bank.
- ◇ Transfusion reactions include:
 - Fever without chills (associated with Haemolytic Transfusion Reaction)
 - Skin symptoms like hives (urticaria) or itching
 - Pain (chest, abdomen and/or flank)
 - Acute hypotension or acute hypertension
 - Respiratory diseases (dyspnea, tachypnea, wheezing or hypoxemia)
 - Nausea and/or vomiting
 - Darkened urine or jaundice
 - Flushing
 - Bleeding
 - Anaphylaxis
- ◇ Obtain post-transfusion samples from the patient immediately (or as soon as possible in the case of urine samples) for workup. Complete a Transfusion Reaction Notification Form with required information. A copy of the form must accompany the samples to the Blood Bank.

Note: Be careful to minimize mechanical haemolysis when taking blood samples. Tubes must also be properly labelled.

Refer to changes highlighted yellow

- ◇ Send blood samples, Crossmatch / Component Transfusion form, Transfusion Reaction Notification Form and blood bag with infusion set and tag attached to the Blood Bank.
- ◇ Do not transfuse any more products until the reaction investigation is completed.

Delayed Transfusion Reaction

- ◇ Haemolytic transfusion reactions may not be apparent for several days following transfusion. Most common signs are fever, unexpected fall or less than expected rise in haemoglobin, and jaundice.
- ◇ If any delayed haemolytic transfusion reactions are observed by the nurses, notify the attending physician immediately for any medical treatment necessary for the patient.
- ◇ A Transfusion Reaction Notification Form must be submitted again to the Blood Bank together with the patient's post-transfusion specimens (1 x EDTA, 50 mL urine).

EMERGENCY RELEASE OF BLOOD UNITS

Specimen:	Plasma (EDTA, Minimum volume: 1 mL)
Rejection Criteria:	Grossly haemolysed
Method:	Tube method and Ortho Vision system AFTER blood products have been issued
Useful for:	For the immediate release of un-crossmatched group specific red blood cell products or group O red blood cell products, either Rh-positive or Rh-negative

- ◇ The attending physician must issue a written order using Emergency Release of Blood Form specifying blood group (if known) and number of units required. The form must be completely prescribed and signed by the attending physician.
- ◇ At the same time, the attending staff nurse **must** inform the laboratory of the urgency of blood product/s needed to avoid unnecessary delays.
- ◇ One EDTA tube of blood must be drawn from the patient and sent down to the laboratory together with all the required forms. **The nurse or hospital aide sending down the samples to the laboratory must wait for the laboratory staff to issue the required units as soon as possible.**
- ◇ Laboratory staff will inform the nurse in-charge of available units and issue blood products as requested and will continue with the crossmatch procedure simultaneously.

◇ Should there be any incompatibilities tested with the crossmatch procedure, laboratory staff will immediately notify the nurse in-charge. If transfusion of the incompatible unit has started, the process must be stopped immediately. The blood unit must then be returned to the laboratory as soon as possible. If the patient starts exhibiting symptoms of a transfusion reaction, follow the Transfusion Reaction Investigation procedure.

Note:

- There is no emergency release for FFP or Cryoprecipitate products as thawing will take up to 20 minutes from the receipt of the request.
- Platelet concentrate stock depends on availability of platelet donors. Pure platelets are harvested via Apheresis process, which may take more than a day to obtain.

ANNEX A. LIST OF STAT TESTS

- ◇ STAT (Short-Turn-Around-Time), or Urgent, tests are highest priority tests ordered to manage medical emergencies. The following tests can be performed as STAT (Short Turn Around Time):

BIOCHEMISTRY	Amikacin (AMIK/AMIKP/AMIKT)	1 hour	Neonatal Bilirubin (NBI)	1 hour
	Blood Gas (GAS/VBG)	30 mins	Osmolality (OSS)	2 hours
	Calcium (CA)	1 hour	Phenobarbital (PHNO3)	1 hour
	Carbamazepine (CARB)	1 hour	Phenytoin (PHNY2)	1 hour
	Chloride (CL)	45 mins	Potassium (POT)	45 mins
	Creatinine (CRT)	45 mins	Protein (Urine Random) (UTP)	1 hour
	Creatine Kinase (CK)	1 hour	Sodium (NA)	45 mins
	Digoxin (DIG)	1 hour	Theophylline (THE)	1 hour
	Gentamicin (GEN/GENP/GENT)	1 hour	Urea (UR)	45 mins
	Glucose Fasting (GLF)	1 hour	Uric Acid (SUA)	45 mins
	Lactic Acid (LAC)	1 hour	Valproic Acid (VAL)	1 hour
	Magnesium (MG)	1 hour	Vancomycin (VAN/VANP/VANT)	1 hour
IMMUNOLOGY	N-Terminal Pro B-Type Natriuretic Peptide (NTPROBNP)	2 hours	Luteinizing Hormone (LH)	2 hours
	Beta HCG Total (QUA)	2 hours	Methotrexate (MTX)	2 hours
	Cortisol (RCO)	2 hours	Procalcitonin (PCT)	2 hours
	Creatine Kinase-Mb (CMB)	2 hours	Progesterone (PRG)	2 hours
	Cyclosporine (CYCLO)	3 hours	Tacrolimus (TACRO)	3 hours
	Estradiol (E2)	2 hours	Troponin I High Sensitive Stat (TRO)	45 mins
HAEMATOLOGY	Activated Partial Thromboplastin Time (APTT)	1 hour	International Normalised Ratio (INR)	1 hour
	D-Dimer (FDP)	2 hours	Malarial Parasites (MS)	1 hour
	Fibrinogen (FIB)	2 hours	Prothrombin Time (PT)	1 hour
	Full Blood Count (FBC)	45 mins	Reticulocyte Count (RET)	45 mins
MICROBIOLOGY	Urine Microscopy (MU)	1 hour	Fluid FEME (FLF)	2 hours
	Faecal Microscopy (FM)	1 hour	CSF FEME (CSFF)	2 hours
VIROLOGY	RSV (< 5 years old)	40 mins	Influenza Antigen	40 mins

ANNEX B. TEST CATALOGUE (IN-HOUSE)**25-OH VITAMIN D TOTAL, Code: OHD**

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	12 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Diagnosis of Vitamin D deficiency and Hypervitaminosis D
Reference range:	See laboratory report
Performed:	Every Tuesday and Friday
TAT:	3 days
Section:	Immunology (ext 2407)

ACINETOBACTER SCREENING, Code: Refer to note below

OTHER TEST NAME: STERILITY TESTING

Specimen:	Any (Gel swab) / Sterile container (for urine and sputum)
Collection:	Indicate source of specimen
Specimen Stability:	Room temperature, 24 hours
Rejection Criteria:	Dry swab, Source of specimen not indicated if more than one swab
Method:	Conventional culture
Useful for:	Detection of <i>Acinetobacter baumannii</i>
Reference range:	-
Performed:	Daily
TAT:	48-72 hours
Section:	Microbiology (ext 2436)

NOTE: Code for sterility test is STER (no. of specimen)
(i.e. For one specimen, code is STER1. For two specimens, code is STER2. And so on and so forth).

ACTIVATED PARTIAL THROMBOPLASTIN TIME, Code: APTT

Specimen:	Plasma (Sodium Citrate, blue top)
Collection:	Up to line indicated on the tube
Specimen Stability:	2 hours from the time of collection
Rejection Criteria:	Under filled, over filled, haemolysed and/or clotted, lipaemic, icteric
Method:	Coagulometric Measurement
Useful for:	Monitoring heparin therapy and screening test for clotting factors
Reference range:	See Laboratory Report
Performed:	Daily
TAT:	1 day, STAT
Section:	Haematology (ext 2408)

ACTIVATED PARTIAL THROMBOPLASTIN TIME (APTT) RATIO, Code: APTTRATIO

Specimen:	Plasma (Sodium Citrate, blue top)
Collection:	Up to line indicated on the tube
Specimen Stability:	2 hours from the time of collection
Rejection Criteria:	Under filled, over filled, haemolysed and/or clotted, lipaemic, icteric
Method:	Coagulometric Measurement
Useful for:	NA
Reference range:	See Laboratory Report
Performed:	Daily
TAT:	1 day, STAT
Section:	Haematology (ext 2408)

ACTIVATED PARTIAL THROMBOPLASTIN TIME (APTT) 50% CORRECTION, Code: APT50

Specimen:	Plasma (Sodium Citrate, blue top)
Collection:	Up to line indicated on the tube
Specimen Stability:	2 hours from the time of collection
Rejection Criteria:	Under filled, over filled, haemolysed and/or clotted, lipaemic, icteric
Method:	Coagulometric Measurement
Useful for:	Follow up test to investigation cause of unexplained prolong APTT. Differentiates between possibility of factor deficiency or acquired coagulation inhibitors.
Reference range:	See Laboratory Report
Performed:	Daily
TAT:	1 day
Section:	Haematology (ext 2408)

ADENOVIRUS ANTIGEN, STOOL, Code: FVSA

Specimen:	Stool (Sterile container with attached spatula)
Collection:	NA
Specimen Stability:	72 hours at 2-8°C
Rejection Criteria:	Specimens other than stool
Method:	Rapid strip test
Useful for:	Detection of Adenovirus in stool
Reference range:	Negative
Performed:	Daily
TAT:	1 day
Section:	Microbiology (ext 2436)

ALANINE AMINOTRANSFERASE (SGPT), Code: ALT

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	IFCC, NADH without pyridoxal phosphate
Useful for:	Aid in diagnosis and treatment of certain liver diseases (e.g viral hepatitis and cirrhosis)
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

ALBUMIN, Code: ALB

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at room temperature and at 2-8°C
Rejection Criteria:	NA
Method:	Colorimetric with Bromcresol Green
Useful for:	Aid in the diagnosis and treatment of numerous diseases involving primarily in liver or kidneys.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

ALBUMIN, CSF, Code: CSFALB

Specimen:	Cerebrospinal Fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Turbidimetric/Immunoturbidimetric
Useful for:	Assessment of CNS disease and infection
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

ALBUMIN, FLUID, Code: ALBFLU

Specimen: Body fluid (Sterile container)
 Collection: Fresh sample and send to lab immediately
 Specimen Stability: Assay immediately
 Rejection Criteria: NA
 Method: Colorimetric with Bromcresol Green
 Useful for: Identification of fluid effusions
 Reference range: See laboratory report
 Performed: Daily
 TAT: 1 day
 Section: Biochemistry (ext 2407)

ALBUMIN & CREATININE RATIO, Code: ACR

Specimen: Urine (Sterile container or 24hr urine container)
 Collection: No preservative needed for random urine.
 Preserve urine using 20 to 30 mL of 6M HCL for 24 hours urine and store refrigerated during collection period
 Specimen Stability: Assay immediately
 Rejection Criteria: NA
 Method: Refer to individual test method
 Useful for: Renal function test
 Reference range: See laboratory report
 Performed: Daily
 TAT: 1 day
 Section: Biochemistry (ext 2407)

ALKALINE PHOSPHATASE, Code: ALP

Specimen: Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
 Collection: NA
 Specimen Stability: 7 days at 2-8°C
 Rejection Criteria: NA
 Method: IFCC, Para-nitrophenyl Phosphate
 Useful for: Aid in the diagnosis and treatment of liver, bone, parathyroid and intestinal diseases.
 Reference range: See laboratory report
 Performed: Daily
 TAT: 1 day
 Section: Biochemistry (ext 2407)

ALPHA-FETOPROTEIN, Code: AFP

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	A tumour marker for hepatocellular carcinoma and testicular cancer. Aid in detection of fetal open neural tube defects (NTD).
Reference range:	See laboratory report
Performed:	Office hours only
TAT:	2 days
Section:	Immunology (ext 2407)

AMIKACIN LEVEL, Code: AMIK

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Useful for:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

AMIKACIN LEVEL (PEAK) , Code: AMIKP

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Collect 30 min after end of IV infusion or 1 hour after IM injection
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Useful for:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

AMIKACIN LEVEL (TROUGH) , Code: AMIKT

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Collect specimen immediately before next dose
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Useful for:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

AMMONIA, Code: AMON

Specimen:	Plasma (EDTA purple top, 4 mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Place on ice, send to the lab immediately within 15 minutes for rapid centrifugation *(please inform lab at least 1 hour prior to collection)
Specimen Stability:	Assay immediately
Rejection Criteria:	Specimen is not placed on ice
Method:	Enzymatic with Glutamate Dehydrogenase
Useful for:	Liver function assessment. Screening test for amino acid disorders, organic acid disorders and urea cycle disorders.
Reference range:	See laboratory report
Performed:	Daily
TAT:	2 hours
Section:	Biochemistry (ext 2407)

AMYLASE, Code: AMY

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	24 hours at room temperature & 2-8°C
Rejection Criteria:	NA
Method:	IFCC, Enzymatic with CNPG3 Substrate
Useful for:	Diagnosis and treatment of pancreatitis
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted yellow

AMYLASE, FLUID, Code: FLUAMY

Specimen: Body fluid (Sterile container)
 Collection: Fresh sample and send to lab immediately
 Specimen Stability: Assay immediately
 Rejection Criteria: NA
 Method: Enzymatic/Colorimetric with EPS
 Useful for: Identification of fluid effusions
 Reference range: See laboratory report
 Performed: Daily
 TAT: 1 day
 Section: Biochemistry (ext 2407)

AMYLASE, URINE RANDOM, Code: UAM

Specimen: Urine (Sterile container)
 Collection: No preservative needed
 Specimen Stability: 24 hours at room temperature, 3 days at 2-8°C
 Rejection Criteria: Urine collected with acidic preservatives.
 Method: Enzymatic/Colorimetric with EPS
 Useful for: Diagnosis and treatment of pancreatitis
 Reference range: See laboratory report
 Performed: Daily
 TAT: 1 day
 Section: Biochemistry (ext 2407)

AMYLASE, 24 HOURS URINE, Code: UAM24

Specimen: Urine (24hr urine container)
 Collection: Timed or 24 hours specimens with no preservatives
 Specimen Stability: 24 hours at room temperature, 3 days at 2-8°C
 Rejection Criteria: Urine collected with acidic preservatives.
 Method: Enzymatic/Colorimetric with EPS
 Useful for: Diagnosis and treatment of pancreatitis
 Reference range: See laboratory report
 Performed: Daily
 TAT: 1 day
 Section: Biochemistry (ext 2407)

Refer to changes highlighted yellow

ANTIBODY SCREENING, Code: BAB

OTHER TEST NAME: INDIRECT ANTIGLOBULIN TEST

Specimen: Plasma from Whole Blood (EDTA, Minimum volume: 1 mL)
 Collection: NA
 Specimen Stability: 3 days at 1-6°C
 Rejection Criteria: Grossly Haemolysed
 Method: Column Agglutination using Ortho Vision System
 Useful for: To detect as many clinically significant antibodies as possible
 Performed: Daily
 TAT: 1 day
 Section: Blood Transfusion (ext 2320)

ANTI-CCP (Cyclic Citrullinated Peptide) , Code: CCP

Specimen: Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
 Collection: NA
 Specimen Stability: 7 days at 2-8°C
 Rejection Criteria: NA
 Method: Chemiluminescent Microparticle Immunoassay (CMIA)
 Useful for: Aids in diagnosis of Rheumatoid Arthritis
 Reference range: See laboratory report
 Performed: Monday, Wednesday & Friday
 TAT: 2 days
 Section: Immunology (ext 2407)

ANTI-THYROGLOBULIN , Code: ATHY

Specimen: Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
 Collection: NA
 Specimen Stability: 3 days at 2-8°C
 Rejection Criteria: NA
 Method: Chemiluminescent Microparticle Immunoassay (CMIA)
 Useful for: Aids in diagnosis of autoimmune thyroid diseases, Hashimoto's Thyroiditis, Primary Myxedema and Graves' disease. Useful in follow-up of patients with thyroid carcinomas.
 Reference range: See laboratory report
 Performed: Wednesday & Saturday
 TAT: 2-3 days
 Section: Immunology (ext 2407)

ANTI-THYROID PEROXIDASE , Code: TPO

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Aids in diagnosis of autoimmune thyroid diseases, Hashimoto's Thyroiditis, Primary Myxedema and Graves' disease.
Reference range:	See laboratory report
Performed:	Wednesday & Saturday
TAT:	2-3 days
Section:	Immunology (ext 2407)

ANTI-THYROID RECEPTOR ANTIBODY , Code: TRAB

Specimen:	Serum (SST, yellow top, 5mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Aids in differential diagnosis of Graves' disease. Useful in monitoring anti-thyroid therapy and predicting remission.
Reference range:	See laboratory report
Performed:	Wednesday & Saturday
TAT:	2-3 days
Section:	Immunology (ext 2407)

APT-DOWNEY TEST, Code: APT

Specimen:	Stool (Sterile container with attached spatula) or vomit (Sterile container)
Collection:	Fresh with minimal debris
Specimen Stability:	Test immediately
Rejection Criteria:	NA
Method:	APT-Downey test
Useful for:	To distinguish between maternal (adult type) and infant's (fetal type) hemoglobin in a grossly bloody stool.
Reference range:	N/A
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

ARTERIAL/VENOUS BLOOD GAS, Code: GAS (for arterial), VBG (for venous)**(pH, PCO₂, PO₂, BE, HCO₃, TCO₂, sO₂, Na, K, iCa, Glu, Hct, Hb)**

Specimen:	Whole blood (Heparinized syringe)
Collection:	Fill the syringe to at least half of its stated capacity. Do not expose specimen to air and mix well to prevent clotting. Do not send through pneumatic tube.
Specimen Stability:	Keep specimen anaerobic, at room temperature and send to the laboratory immediately as sample must be analysed within 30 minutes. If a delay of more than 30 minutes is anticipated, the sample should be stored on ice immediately after collection and transported on ice.
Rejection Criteria:	Sample was not kept on ice and was received more than 30 minutes after collection, presence of clots, air bubbles, sample not sealed or transported via a pneumatic tube.
Method:	Abbott i-STAT
Useful for:	Aid in diagnosis, monitoring and treatment of respiratory and metabolic acid-base disturbances.
Reference range:	See laboratory report
Performed:	Daily
TAT:	STAT
Section:	Biochemistry (ext 2407)

ASPARTATE AMINOTRANSFERASE (SGOT), Code: AST

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	IFCC, Enzymatic without pyridoxal phosphate
Useful for:	Liver profile assessment. Diagnosis of Acute Myocardial Infarct.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

BENCE JONES PROTEIN, Code: BJP

Specimen:	Urine (Sterile container)
Collection:	Fresh morning urine
Specimen Stability:	Test immediately
Rejection Criteria:	NA
Method:	Heat test
Useful for:	Screening test for multiple myeloma and amyloidosis
Reference range:	Not detected in normal individuals. Plasma cells leukemia will need to do immunoelectrophoresis technique because it is negative for Bence Jones protein
Performed:	Office hours only
TAT:	1 day
Section:	Biochemistry (ext 2407)

BICARBONATE, Code: HCO3

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Not recommended as add-on as a consequent decrease in the CO ₂ value of up to 6 mmol/L can occur in an hour once the specimen has been exposed to ambient air.
Specimen Stability:	2 hours at room temperature (Tightly capped)
Rejection Criteria:	NA
Method:	Enzymatic with PEP Carboxylase
Useful for:	Evaluate acid-base imbalances
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

BILIRUBIN (DIRECT), Code: BILD

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Diazo reaction
Useful for:	Differential diagnosis of jaundice
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

BILIRUBIN (TOTAL), Code: BILT

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Diazonium salt
Useful for:	Assessment of liver function and measurement of unconjugated bilirubin.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

BILIRUBIN (DIRECT), FLUID Code: BILDFLU

Specimen:	Body fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Diazo reaction
Useful for:	Assessment of peritoneal or abdominal drain fluid as a screening tool for detecting bile leakage. May assist in differentiating between transudative and exudative pleural effusions.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

BILIRUBIN (TOTAL), FLUID Code: BILTFLU

Specimen:	Body fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Diazonium salt
Useful for:	Assessment of peritoneal or abdominal drain fluid as a screening tool for detecting bile leakage. May assist in differentiating between transudative and exudative pleural effusions.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

BILIRUBIN, NEONATAL Code: NBI*Tests include Bilirubin Total & Bilirubin Direct (Conjugated)*

Specimen:	Serum (Microtainer SST, 500uL) or plasma (Microtainer Li-Heparin, 500uL)
Collection:	Send to the Lab immediately
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Diazonium salt
Useful for:	Diagnosing neonatal jaundice and assessing the effectiveness of phototherapy in neonates.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

BLOOD CULTURE (Aerobic or Anaerobic), Code: BC

Specimen:	Whole blood (Bactec blood culture bottles)
Collection:	8 -10 mL of blood. Recommended to draw two blood culture sets per septic episode from different sites at an interval of 45 mins – 1 hour between each set
Specimen Stability:	Room temperature for 4 hours
Rejection Criteria:	Keep at room temperature for more than 4 hours
Method:	Automated Bactec (fluorescence) & Conventional culture
Useful for:	Diagnosis of septicaemia
Reference range:	No growth after 5 days incubation
Performed:	Daily
TAT:	5 days
Section:	Microbiology (ext 2436)

BLOOD CULTURE, PAEDIATRIC (Aerobic) Code: BCP

Specimen:	Whole blood (1-3 mL, Bactec blood culture bottle)
Collection:	NA
Specimen Stability:	Room temperature for 4 hours
Rejection Criteria:	Keep at room temperature for more than 4 hours
Method:	Automated Bactec (fluorescence) & Conventional culture
Useful for:	Diagnosis of septicaemia
Reference range:	No growth after 5 days incubation
Performed:	Daily
TAT:	5 days
Section:	Microbiology (ext 2436)

BLOOD CULTURE, FUNGAL, Code: BCY

Specimen:	Whole blood (Bactec Myco/F Lytic blood culture bottle)
Collection:	1 – 5 mL of blood
Specimen Stability:	Room temperature for 4 hours
Rejection Criteria:	Keep at room temperature for more than 4 hours
Method:	Automated Bactec (fluorescence) & Conventional culture
Useful for:	Diagnosis of yeast infection in the blood
Reference range:	No growth after 30 days incubation
Performed:	Daily
TAT:	30 days
Section:	Microbiology (ext 2436)

BLOOD FILM, Code: BF

Specimen:	Whole blood (EDTA purple top)
Collection:	4ml for EDTA tube and 500ul for microtainer
Specimen Stability:	12 hours from the time of collection
Rejection Criteria:	Haemolysed and/or clotted
Method:	Microscopy
Useful for:	To provide information of the morphology of blood cells
Reference range:	See Laboratory Report
Performed:	Office hours only
TAT:	2-3 days
Section:	Haematology (ext 2408)

BLOOD GROUPING, Code: BG

Specimen:	Whole Blood (EDTA purple top, Minimum volume: 1 mL)
Collection:	NA
Specimen Stability:	3 days at 1-6°C
Rejection Criteria:	Haemolysed and/or Clotted
Method:	Column Agglutination using Ortho Vision System or Manual Tube Method
Useful for:	Blood group determination
Performed:	Daily
TAT:	1 day
Section:	Blood Transfusion (ext 2320)

CA 125, Code: CA1

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Tumour marker for ovarian cancer
Reference range:	See laboratory report
Performed:	Office hours only
TAT:	2 days
Section:	Immunology (ext 2407)

CA 15-3, Code: CA5

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Tumour marker for Stage II and III breast cancer
Reference range:	See laboratory report
Performed:	Office hours only
TAT:	2 days
Section:	Immunology (ext 2407)

CA 19-9, Code: CA9

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Tumour marker for pancreatic and hepatobiliary cancer
Reference range:	See laboratory report
Performed:	Office hours only
TAT:	2 days
Section:	Immunology (ext 2407)

Refer to changes highlighted yellow

CALCIUM, TOTAL, Code: CA

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	3 weeks at 2-8°C
Rejection Criteria:	NA
Method:	Colorimetric method with Arsenazo III
Useful for:	Evaluation of calcium metabolism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

CALCIUM IONISED, Code: CAI

(Do not order with Blood Gas panel, as iCa is already included in the panel)

Specimen Container:	Serum (SST yellow top, 5 mL)
Collection:	Fill tube completely and keep specimen anaerobic. Additional tube is required when multiple tests are ordered. Not acceptable for add-on as previous exposure of sample to air will result in decrease of ionised calcium concentration.
Specimen Stability:	4 hours stored anaerobically at room temperature (single test only)
Rejection Criteria:	No additional tube received if multiple tests ordered, requested as add on, tubes less than 50% full, sample not properly capped
Method:	Ion-selective electrode potentiometric
Clinical usage:	Evaluation of calcium metabolism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

CALCIUM, URINE RANDOM, Code: UCA

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	4 days at 2-8°C
Rejection Criteria:	NA
Method:	Colorimetric method with Arsenazo III
Useful for:	Evaluation of calcium metabolism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

CALCIUM, 24-HOURS URINE, Code: UCA24

Specimen:	Urine (24hr urine container)
Collection:	Preserve urine using 20 to 30 mL of 6M HCL and store refrigerated during collection period
Specimen Stability:	4 days at 2-8°C
Rejection Criteria:	NA
Method:	Colorimetric method with Arsenazo III
Useful for:	Evaluation of calcium metabolism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

CALCIUM & CREATININE RATIO, URINE RANDOM, Code: RCCR

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	4 days at 2-8°C
Rejection Criteria:	NA
Method:	Refer to individual test method
Useful for:	Screening tool for hypercalciuria
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

CALCIUM & CREATININE RATIO, 24-HOURS URINE, Code: CCR

Specimen:	Urine (24hr urine container)
Collection:	Preserve urine using 20 to 30 mL of 6M HCL and store refrigerated during collection period
Specimen Stability:	4 days at 2-8°C
Rejection Criteria:	NA
Method:	Refer to individual test method
Useful for:	Screening tool for hypercalciuria
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

CARBAMAZEPINE, Code: CARB

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Useful for:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

CARCINOEMBRYONIC ANTIGEN (CEA), Code: CEA

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Tumour marker in colon and pancreatic cancer
Reference range:	See laboratory report
Performed:	Office hours only
TAT:	2 days
Section:	Immunology (ext 2407)

CARDIAC ENZYMES, Code: CAR

Tests include Creatine Kinase, Lactate Dehydrogenase and Aspartate Aminotransferase

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	NA
Method:	Refer to individual test method
Useful for:	Assessment of cardiac disorders
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

CHLAMYDIA TRACHOMATIS/NEISSERIA GONORRHOEAE DNA, CODE: CTNG

Specimen:	Endocervical Swab or First Void Urine (7 mL) (Special swab collection kit from the Laboratory)
Collection:	NA
Specimen Stability:	4 days at 2-8°C (Urine)
Rejection Criteria:	Swab not in Xpert transport media
Method:	NAAT
Useful for:	To aid in the diagnosis of chlamydial and gonorrheal disease
Reference range:	Not Detected
Performed:	Office hours only
TAT:	1-3 days
Section:	Virology and Serology (ext 2322)

CHLORIDE, Code: CL

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Indirect Ion-selective electrode potentiometry
Useful for:	Assessment of electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

CHLORIDE, FLUID, Code: CLFLU

Specimen:	Body fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Indirect Ion-selective electrode potentiometry
Useful for:	Identification of fluid effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

CHLORIDE, URINE RANDOM, Code: UCL

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Indirect Ion-selective electrode potentiometry
Useful for:	Evaluation / assessment of electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

CHLORIDE, 24-HOURS URINE, Code: UCL24

Specimen:	Urine (24hr urine container)
Collection:	No preservative needed. Store refrigerated during collection period
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Indirect Ion-selective electrode potentiometry
Useful for:	Evaluation / assessment of electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

CHOLESTEROL TOTAL, Code: CHO

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	N/A
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Enzymatic
Useful for:	Diagnosis of hyperlipidemia and cardiovascular risk assessment
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

CLOSTRIDIUM DIFFICILE TOXIN, Code: CDST

Specimen:	Stool (Sterile container)
Collection:	NA
Specimen Stability:	Within 24 hours (Room Temperature), 72 hours at 2-8°C
Rejection Criteria:	Specimen exceeds stability, specimen kept in formalin/fixative
Method:	Rapid immunochromatographic assay
Useful for:	Detects C.difficile antigen and toxin
Reference range:	Negative
Performed:	Daily
TAT:	1 day
Section:	Microbiology (ext 2436)

COMPLEMENT C3 , Code: C3

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	NA
Method:	Immunoturbidimetric
Useful for:	Aids in determination of inherited or acquired deficiencies, and diagnosis of inflammatory and necrotic disorders.
Reference range:	See laboratory report
Performed:	Monday, Wednesday & Friday
TAT:	2 days
Section:	Biochemistry (ext 2407)

COMPLEMENT C4 , Code: C4

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4mL)
Collection:	NA
Specimen Stability:	2 days at 2-8°C
Rejection Criteria:	NA
Method:	Immunoturbidimetric
Useful for:	Aids in determination of inherited or acquired deficiencies, and diagnosis of inflammatory and necrotic disorders.
Reference range:	See laboratory report
Performed:	Monday, Wednesday & Friday
TAT:	2 days
Section:	Biochemistry (ext 2407)

CORTISOL, Code: RCO

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	14 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Aids in diagnosis and treatment of adrenal disorders e.g Cushing's syndrome and Addison's disease
Reference range:	See laboratory report
Performed:	Every Monday and Thursday
TAT:	3 days, STAT
Section:	Immunology (ext 2407)

CORTISOL, URINE RANDOM, Code: UCO

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	14 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Screening test for Cushing's syndrome and Addison's disease
Reference range:	See laboratory report
Performed:	Every Monday and Thursday
TAT:	3 days, STAT
Section:	Immunology (ext 2407)

CORTISOL, 24-HOURS URINE, Code: UCO24

Specimen:	Urine (24hr urine container)
Collection:	No preservative needed. Store refrigerated during collection period
Specimen Stability:	14 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Screening test for Cushing's syndrome and Addison's disease
Reference range:	See laboratory report
Performed:	Every Monday and Thursday
TAT:	3 days, STAT
Section:	Immunology (ext 2407)

C-REACTIVE PROTEIN, Code: CRP

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	2 months at 2-8°C
Rejection Criteria:	NA
Method:	Turbidimetric/Immunoturbidimetric
Useful for:	A diagnostic indicator of infections and inflammation and monitoring response to therapy.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

CREATINE KINASE, Code: CK

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	IFCC with N-acetyl-L-cysteine
Useful for:	Assessment of skeletal & cardiac muscle disorders
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

CREATINE KINASE-MB, Code: CMB

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Assist in diagnosis of myocardial infarction
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Immunology (ext 2407)

CREATININE, Code: CRT

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Kinetic Alkaline Picrate
Useful for:	Aid in diagnosis and treatment of renal diseases and in monitoring renal dialysis
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

CREATININE, FLUID, Code: CRTFLU

Specimen:	Body fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Kinetic Alkaline Picrate
Useful for:	Identification of fluid effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

CREATININE, URINE RANDOM, Code: UCRT

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	NA
Method:	Kinetic Alkaline Picrate
Useful for:	Used to calculate creatinine clearance and as a calculation basis for measuring other urine analytes.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

CREATININE, 24-HOURS URINE, Code: UCRT24

Specimen:	Urine (24hr urine container)
Collection:	No preservative needed
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	NA
Method:	Kinetic Alkaline Picrate
Useful for:	Used to calculate creatinine clearance and as a calculation basis for measuring other urine analytes.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

CREATININE CLEARANCE, 24-HOURS URINE, Code: CC

Specimen:	1) Urine (24hr urine container) 2) Serum (SST yellow top, 5 mL) or plasma (Li-Heparin green top, 4 mL) Note: Patient's weight (in kg) and height (in cm) are required for creatinine clearance calculation
Collection:	No preservative needed
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	Only one specimen type received
Method:	Calculated
Useful for:	Creatinine clearance evaluation
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

CRYPTOCOCCAL STAIN, Code: CPT

Specimen:	CSF (Sterile container)
Collection:	-
Specimen Stability:	Send to laboratory as soon as possible
Rejection Criteria:	-
Method:	Conventional
Useful for:	Diagnosis of meningitis
Reference range:	Negative
Performed:	Office hours only
TAT:	1 day
Section:	Microbiology (ext 2436)

CRYOGLOBULIN TEST, Code: CGB

Specimen:	Serum (CAT, Red Top, 5mL)
Collection:	Must inform the laboratory a day before testing required. Incubated tubes and equipment must be used.
Specimen Stability:	7 days at 1-6°C
Rejection Criteria:	Icteric/Lipaemic
Method:	Incubation at 4°C for 72 hours and observed for precipitation
Useful for:	To help detect the presence of cryoglobulins in the blood to help determine or rule out potential causes of cryoglobulinemia
Reference range:	Negative
Performed:	Office hours only
TAT:	3 days from time of collection
Section:	Blood Transfusion (ext 2320)

CSF BIOCHEMISTRY – GLUCOSE & PROTEIN, Code: CSFB

Specimen:	Cerebrospinal Fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Hexokinase/G-6-PDH & Turbidimetric with Benzethonium Chloride
Useful for:	Assessment of CNS disease and infection
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

CSF FEME (GRAMSTAIN, MICROSCOPY, CELL COUNT), Code: CSFF

Specimen:	CSF (Sterile container)
Collection:	NA
Specimen Stability:	Send to laboratory as soon as possible
Rejection Criteria:	Heavily blood-stained specimen
Method:	Light microscopy
Useful for:	Diagnosis of bacterial meningitis
Reference range:	Leukocytes 0-5 µl
Performed:	Daily
TAT:	1 day
Section:	Microbiology (ext 2436)

CSF FEME, CULTURE AND SENSITIVITY, Code: CSFFC

Specimen: CSF (Sterile container)
 Collection: NA
 Specimen Stability: Send to laboratory as soon as possible
 Rejection Criteria: Heavily blood-stained specimen (for FEME)
 Method: Conventional culture
 Useful for: Diagnosis of bacterial meningitis
 Reference range: Culture sterile, leukocytes 0-5µl
 Performed: Daily
 TAT: 4 days
 Section: Microbiology (ext 2436)

CULTURE AND SENSITIVITY, ABSCESS SWAB, Code: ABS

Specimen: Abscess (Gel Swab/Sterile container/Syringe with needle removed)
 Collection: Indicate source of specimen
 Specimen Stability: Room temperature, 24 hours
 Rejection Criteria: Dry swab, samples with formalin
 Method: Conventional culture
 Useful for: Diagnosis of bacterial infection
 Reference range: -
 Performed: Daily
 TAT: Up to 6 days
 Section: Microbiology (ext 2436)

CULTURE AND SENSITIVITY, CSF, Code: CSFC

Specimen: CSF (Sterile container)
 Collection: NA
 Specimen Stability: Send to laboratory as soon as possible
 Rejection Criteria: NA
 Method: Light microscopy and conventional culture
 Useful for: Diagnosis of bacterial meningitis
 Reference range: Culture sterile
 Performed: Daily
 TAT: 4 days
 Section: Microbiology (ext 2436)

CULTURE AND SENSITIVITY, EAR SWAB, Code: RSCEAR

Specimen: Ear Swab (Gel swab)
 Collection: NA
 Specimen Stability: Room temperature, 24 hours
 Rejection Criteria: Dry swab
 Method: Conventional culture
 Useful for: Diagnosis of bacterial infection
 Reference range: NA
 Performed: Daily
 TAT: 48-72 hours
 Section: Microbiology (ext 2436)

CULTURE AND SENSITIVITY, EYE SWAB, Code: RSCEYE

Specimen: Eye Swab (Gel swab)
 Collection: NA
 Specimen Stability: Room temperature, 24 hours
 Rejection Criteria: Dry swab
 Method: Conventional culture
 Useful for: Diagnosis of bacterial infection
 Reference range: NA
 Performed: Daily
 TAT: 48-72 hours
 Section: Microbiology (ext 2436)

CULTURE AND SENSITIVITY, FLUID, Code: FLC

Specimen: Body Fluid (Sterile screw-capped container, 1 ml)
 Collection: NA
 Specimen Stability: Send to laboratory as soon as possible
 Rejection Criteria: NA
 Method: Conventional culture
 Useful for: Diagnosis of bacterial infection
 Reference range: NA
 Performed: Daily
 TAT: 4 days
 Section: Microbiology (ext 2436)

CULTURE AND SENSITIVITY, FUNGAL (With Microscopy), Code: Refer to note below

Specimen: Any (Sterile container/Gel swab)
 Collection: NA
 Specimen Stability: NA
 Rejection Criteria: NA
 Method: Light microscopy & Conventional Culture
 Useful for: Detection of fungal infection
 Reference range: Negative
 Performed: Daily
 TAT: 4 weeks
 Section: Microbiology (ext 2436)

NOTE: Code for Fungal microscopy and culture test is FUN(no. of specimen)
(i.e. For one specimen, code is FUN1. For two specimens, FUN2. And so on and so forth).

CULTURE AND SENSITIVITY, GENITAL SWAB, Code: GSC

Specimen: Genital Swab (Gel swab)
 Collection: NA
 Specimen Stability: Room temperature, 24 hours
 Rejection Criteria: Dry swab
 Method: Conventional culture and Gram Stain
 Useful for: Detection of yeast and bacterial infection
 Reference range: NA
 Performed: Daily
 TAT: 48-72 hours
 Section: Microbiology (ext 2436)

CULTURE AND SENSITIVITY, MISCELLANEOUS, Code: RSCM

Specimen: Miscellaneous Swab (Gel swab), Tissue (Sterile Container)
 Collection: NA
 Specimen Stability: Room temperature, 24 hours
 Rejection Criteria: Dry swab, Tissue in formalin, Non-sterile container
 Method: Conventional culture and Gram Stain
 Useful for: To detect bacterial infection
 Reference range: NA
 Performed: Daily
 TAT: Up to 6 days
 Section: Microbiology (ext 2436)

CULTURE AND SENSITIVITY, MRSA SWAB Code: *Refer note below*OTHER TEST NAME: Methicillin-Resistant *Staphylococcus aureus*

Specimen: Any (Gel swab), indicate source of specimen
 Collection: NA
 Specimen Stability: Room temperature, 24 hours
 Rejection Criteria: Dry swab, Source of specimen not indicated if more than one swab
 Method: Conventional culture
 Useful for: To detect Methicillin-resistant *Staphylococcus aureus*
 Reference range: NA
 Performed: Daily
 TAT: 48-72 hours
 Section: Microbiology (ext 2436)

NOTE: Code for MRSA Swab culture & sensitivity is MSA(no. of swabs)
(i.e. For one MRSA swab, code is MSA1. For two MRSA swabs, code is MSA2. And so on and so forth)

CULTURE AND SENSITIVITY, NASAL SWAB, Code: RSCN

Specimen: Nose Swab (Gel swab)
 Collection: NA
 Specimen Stability: Room temperature, 24 hours
 Rejection Criteria: Dry swab
 Method: Conventional culture and Gram Stain
 Useful for: Diagnosis of bacterial infection
 Reference range: NA
 Performed: Daily
 TAT: 48-72 hours
 Section: Microbiology (ext 2436)

CULTURE AND SENSITIVITY, PUS SWAB, Code: PUS

Specimen: Pus (Gel Swab/Sterile container/Syringe with needle removed)
 Collection: Indicate source of specimen
 Specimen Stability: Room temperature, 24 hours
 Rejection Criteria: Dry swab, samples with formalin
 Method: Conventional culture and Gram Stain
 Useful for: Diagnosis of bacterial infection
 Reference range: NA
 Performed: Daily
 TAT: Up to 6 days
 Section: Microbiology (ext 2436)

CULTURE AND SENSITIVITY, RESPIRATORY, Code: RSCS

Specimen:	Sputum, Bronchoalveolar Lavage (BAL), Endotracheal Aspirate (ETA), Nasopharyngeal Aspirate (NPA)
Collection:	NA
Specimen Stability:	Room temperature, 24 hours
Rejection Criteria:	None (Presence of epithelial cells in Gram stain results indicates specimen quality)
Method:	Conventional culture and Gram Stain
Useful for:	Diagnosis of bacterial infection
Reference range:	NA
Performed:	Daily
TAT:	48-72 hours
Section:	Microbiology (ext 2436)

CULTURE AND SENSITIVITY, SEMEN, Code: SEMEN

Specimen:	Fresh Semen (Sterile container)
Collection:	NA
Specimen Stability:	Send to lab as soon as possible
Rejection Criteria:	NA
Method:	Conventional culture and Gram Stain
Useful for:	Diagnosis of bacterial infection
Reference range:	NA
Performed:	Daily
TAT:	48-72 hours
Section:	Microbiology (ext 2436)

CULTURE AND SENSITIVITY, STOOL, Code: FMC

Specimen:	Stool (Sterile container with attached spatula)
Collection:	NA
Specimen Stability:	Send to laboratory as soon as possible
Rejection Criteria:	Specimens other than stool
Method:	Conventional culture and light microscopy
Useful for:	Diagnosis of parasitic infection, <i>Salmonella</i> , <i>Shigella</i> , <i>Vibrio Cholerae</i> and <i>Campylobacter</i> .
Reference range:	Negative
Performed:	Daily
TAT:	48-72 hours
Section:	Microbiology (ext 2436)

CULTURE AND SENSITIVITY, THROAT SWAB, Code: RSCT

Specimen: Throat Swab (Gel swab)
 Collection: NA
 Specimen Stability: Room temperature, 24 hours
 Rejection Criteria: Dry Swab
 Method: Conventional culture
 Useful for: Diagnosis of bacterial infection
 Reference range: NA
 Performed: Daily
 TAT: 48-72 hours
 Section: Microbiology (ext 2436)

CULTURE AND SENSITIVITY, TIP, Code: RSCTIP

Specimen: IUCD, Catheter Tip, ETC, PICC, CVC, any tips (Sterile container)
 Collection: Indicate source of specimen
 Specimen Stability: 24 hours at room temperature
 Rejection Criteria: NA
 Method: Conventional culture
 Useful for: Diagnosis of bacterial infection
 Reference range: NA
 Performed: Daily
 TAT: 48-72 hours
 Section: Microbiology (ext 2436)

CULTURE AND SENSITIVITY, URINE (with FEME), Code: UCS

Specimen: Midstream Urine (Sterile container)
 Collection: NA
 Specimen Stability: Up to 4 hours at room temperature; up to 24 hours at 2-8°C
 Rejection Criteria: Specimen exceeds stability, container with preservative, non-sterile container
 Method: Conventional culture & Reflectance photometry
 Useful for: Detection of urinary tract infection
 Reference range: NA
 Performed: Daily
 TAT: 48-72 hours
 Section: Microbiology (ext 2436)

CULTURE AND SENSITIVITY, WOUND SWAB, Code: WSC

Specimen:	Wound (Gel Swab/Sterile container/Syringe with needle removed)
Collection:	Indicate source of specimen
Specimen Stability:	24 hours at room temperature
Rejection Criteria:	Dry swab, samples with formalin
Method:	Conventional culture and Gram Stain
Useful for:	Diagnosis of bacterial infection
Reference range:	NA
Performed:	Daily
TAT:	Up to 6 days
Section:	Microbiology (ext 2436)

CYCLOSPORINE, Code: CYCLO

Specimen:	Whole blood (EDTA, purple top, 3mL).
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Therapeutic Drug Monitoring for Organ Transplant
Reference range:	See laboratory report
Performed:	Daily, STAT
TAT:	1 day
Section:	Immunology (ext 2407)

D-DIMER, Code: FDP

Specimen:	Plasma (Sodium Citrate, blue top)
Collection:	Up to line indicated on tube
Specimen Stability:	2 hours from the time of collection
Rejection Criteria:	Under filled, over filled, haemolysed and/or clotted, lipaemic, icteric
Method:	Immunological Measurement
Useful for:	Aid in the diagnosis of disseminated intravascular coagulation (DIC)
Reference range:	Refer Laboratory Report
Performed:	Daily, STAT
TAT:	1 day
Section:	Haematology (ext 2408)

DEHYDROEPIANDROSTERONE SULPHATE, Code: DHE

Specimen:	Serum (SST yellow top, 5mL)
Collection:	NA
Specimen Stability:	8 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Evaluation of androgen status
Reference range:	See laboratory report
Performed:	Every Monday and Thursday
TAT:	3 days
Section:	Immunology (ext 2407)

DENGUE SEROLOGY (NS1 Antigen/IgM/IgG), Code: DEA

Specimen:	Serum (SST yellow top, 5 ml)
Collection:	NA
Specimen Stability:	2 weeks at 2-8°C
Rejection Criteria:	NA
Method:	Rapid immunoassay
Useful for:	Diagnosis of acute/past dengue infection
Reference range:	Negative
Performed:	Office hours only
TAT:	1 day
Section:	Virology and Serology (ext 2322)

DIABETIC SCREEN, Code: DIA

Tests include fasting glucose and glycated haemoglobin (HbA1c)

Specimen:	1) Plasma (Sodium fluoride, grey top, 3mL) for Fasting Glucose 2) Whole blood (EDTA, purple top, 3mL) for HbA1c
Collection:	Fasting for at least 8 hours
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Clotted purple top
Method:	Refer to individual test method
Useful for:	Diagnosis and monitoring of diabetes mellitus
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

DIABETIC STUDIES, Code: DST

Tests include electrolytes, urea, creatinine, fasting glucose, glycated haemoglobin (HbA1c) and urine microalbumin

Specimen:	1) Serum (SST, yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL) for Electrolytes, Creatinine and Urea 2) Plasma (Sodium fluoride, grey top, 3mL) for Fasting Glucose 3) Whole blood (EDTA, purple top, 3mL) for HbA1c 4) Urine (Sterile container) for Urine Microalbumin
Collection:	Fasting for at least 8 hours
Specimen Stability:	5 days at 2-8°C
Rejection Criteria:	Clotted purple top
Method:	Refer to individual test method
Useful for:	Diagnosis and monitoring of diabetes mellitus
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

DIGOXIN, Code: DIG

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Draw blood 12 hours after oral administration or 6 hours after IV administration
Specimen Stability:	2 days at 2-8°C
Rejection Criteria:	NA
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Useful for:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

DIRECT COOMB'S TEST, Code: DCT

OTHER TEST NAME: DIRECT ANTIGLOBULIN TEST

Specimen:	Whole Blood (EDTA purple top, Minimum volume: 1 mL)
Collection:	NA
Specimen Stability:	3 days at 1-6°C
Rejection Criteria:	Grossly Haemolysed
Method:	Tube agglutination
Useful for:	Transfusion Reaction Investigation Diagnosis of haemolytic disease of the new born Diagnosis of autoimmune and drug induced haemolytic anemia Detection of passively acquired alloantibodies
Reference Range:	NA
Performed:	Daily
TAT:	1 day
Section:	Blood Transfusion (ext 2320)

ELECTROLYTES, Code: ELY*Tests include Sodium, Potassium, Chloride*

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Indirect Ion-selective electrode potentiometry
Useful for:	Assessment of electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

ELECTROLYTES, CREATININE & UREA, Code: ECU*Tests include Sodium, Potassium, Chloride, Creatinine, Urea*

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Refer to individual test method
Useful for:	Assessment of renal function
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

Refer to changes highlighted yellow

ELECTROLYTES, URINE RANDOM, Code: ELY2

Tests include Urine sodium, Urine potassium, Urine chloride, Urine urea

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Indirect Ion-selective electrode potentiometry
Useful for:	Assessment of electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

ENVIRONMENTAL SAMPLING, Code: Refer to note below

Specimen:	Any (Agar plate/ Gel swab/Sterile container)
Collection:	NA
Specimen Stability:	NA
Rejection Criteria:	NA
Method:	Settle plate technique/conventional culture
Useful for:	Detection of pathogens
Reference range:	NA
Performed:	Daily
TAT:	48-72 hours
Section:	Microbiology (ext 2436)

NOTE: Code for **environmental sampling** is **ENV** (no. of specimen)
*(i.e. For one specimen, code is **ENV1**. For two specimen, code is ENV2. And so on and so forth)*

ERYTHROCYTE SEDIMENTATION RATE, Code: ESR

Specimen:	Whole blood (EDTA purple tube, 4 ml)
Collection:	NA
Specimen Stability:	4 hours at room temperature
Rejection Criteria:	Haemolysed and/or clotted
Method:	Photometric Rheology
Useful for:	An indicator of the presence and extent of inflammation and its response to treatment
Reference range:	Refer Laboratory Report
Performed:	Daily
TAT:	1 day
Section:	Haematology (ext 2408)

ESTRADIOL, Code: E2

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Female: Evaluation of hypothalamic-pituitary-ovarian axis Male: Investigation of unexplained gynecomastia. Investigation of Infertility. Monitoring during IVF procedures to assess development of ovarian follicles
Reference range:	See laboratory report
Performed:	Every Monday and Thursday
TAT:	3 days, STAT
Section:	Immunology (ext 2407)

ETHANOL, BLOOD, Code: ETH

OTHER TEST NAME: ALCOHOL (BLOOD)

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	6 months at 2-8°C
Rejection Criteria:	NA
Method:	Alcohol Dehydrogenase
Useful for:	To detect presence and levels of alcohol
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

ETHANOL, URINE, Code: UETH

OTHER TEST NAME: ALCOHOL (URINE)

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	30 days at 2-8°C
Rejection Criteria:	NA
Method:	Alcohol Dehydrogenase
Useful for:	To detect presence and levels of alcohol
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

FAECAL OCCULT BLOOD, Code: OCI

Specimen:	Stool (Sterile container with attached spatula)
Collection:	NA
Specimen Stability:	72 hours at 2-8°C
Rejection Criteria:	Specimens other than stool
Method:	Immunochromatographic Test
Useful for:	Detection of blood in stool
Reference range:	Negative
Performed:	Daily
TAT:	1 day
Section:	Microbiology (ext 2436)

FERRITIN, Code: FER

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Screening test for iron status
Reference range:	See laboratory report
Performed:	Every Tuesday and Friday
TAT:	3 days
Section:	Immunology (ext 2407)

FIBRINOGEN LEVEL, Code: FIB

Specimen:	Plasma (Sodium Citrate, blue top)
Collection:	Up to line indicated on tube
Specimen Stability:	2 hours from the time of collection
Rejection Criteria:	Under filled, over filled, Haemolysed and/or clotted, lipaemic, icteric
Method:	Coagulometric Measurement
Useful for:	Aid in the diagnosis of fibrinogenaemia, disseminated, Intravascular coagulation and fibrinolysis
Reference range:	Refer Laboratory Report
Performed:	Daily, STAT
TAT:	1 day
Section:	Haematology (ext 2408)

FOLATE, Code: FOL

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Preferably fasting specimen
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Investigation of megaloblastic anaemia and assessment of folate deficiency
Reference range:	See laboratory report
Performed:	Every Tuesday and Friday
TAT:	3 days
Section:	Immunology (ext 2407)

FOLLICLE STIMULATING HORMONE, Code: FSH

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Evaluating the hypothalamic-pituitary-gonadal axis in diagnosing conditions such as amenorrhea, androgen deficiency, and gonadal dysfunction.
Reference range:	See laboratory report
Performed:	Every Monday and Thursday
TAT:	3 days
Section:	Immunology (ext 2407)

FREE THYROXINE (FREE T4), Code: FT4

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	6 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Diagnosis of hyperthyroidism and hypothyroidism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Immunology (ext 2407)

FREE TRIIODOTHYRONINE (FREE T3), Code: FT3

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	6 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Diagnosis of hyperthyroidism and hypothyroidism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Immunology (ext 2407)

FULL BLOOD COUNT, Code: FBC

Specimen:	Whole blood, (EDTA purple top)
Collection:	4ml for EDTA tube and 500ul for microtainer
Specimen Stability:	4 hours at room temperature
Rejection Criteria:	Haemolysed and/or clotted
Method:	Test includes machine operated differential count by light scattering flow cytometry
Useful for:	Provides information of cells in the blood
Reference range:	See Laboratory Report
Performed:	Daily
TAT:	1 day, STAT
Section:	Haematology (ext 2408)

FUNGAL MICROSCOPY, Code: KOH

Specimen:	Any (Sterile container)
Collection:	NA
Specimen Stability:	NA
Rejection Criteria:	NA
Method:	Light microscopy
Useful for:	Detection of fungal infection
Reference range:	Negative
Performed:	Office hours only
TAT:	24-48 hours
Section:	Microbiology (ext 2436)

GAMMA-GLUTAMYL TRANSFERASE, Code: GGT

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Enzymatic colorimetric (IFCC)
Useful for:	Aids in diagnosis and treatment of liver diseases such as cirrhosis, primary and secondary liver tumours.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (Ext 2407)

GENTAMICIN LEVEL, Code: GEN

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Useful for:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

GENTAMICIN LEVEL (PEAK), Code: GENP

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Collect 30 min after end of IV infusion or 1 hour after IM injection
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Useful for:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

GENTAMICIN LEVEL (TROUGH), Code: GENT

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Collect specimen immediately before next dose
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Useful for:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

GLOMERULAR FILTRATION RATE, Code: GFR

Tests include Creatinine and Estimated Glomerular Filtration Rate

Note: If serum creatinine was previously ordered, please use add-on test code: EGFR

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Please provide height (cm) for paediatric patients (< 18 years old)
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Kinetic Alkaline Picrate
Useful for:	Renal function test
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (Ext 2407)

GLUCOSE 6-PHOSPHATE DEHYDROGENASE, Code: GPD

Specimen:	Neonatal cord blood or whole blood (EDTA, purple top, 3mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Fluorescence Spot Test
Useful for:	Screening test for G6PD deficiency. (Note: any recent blood transfusion for the last 30 days or acute haemolysis can affect the results obtained with this test)
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (Ext 2407)

GLUCOSE 1 HR. POST PRANDIAL, Code: GLU1

Note: Please order this test together with GLUCOSE, FASTING (GLF)

Specimen:	Plasma (Sodium fluoride, grey top, 3mL) preferred for single test; Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL) when multiple tests are ordered
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Sample collection time not labelled properly on tube
Method:	Hexokinase/G-6-PDH
Useful for:	Diagnosis of diabetes mellitus
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (Ext 2407)

GLUCOSE 2 HRS. POST PRANDIAL, Code: GLU2

Note: Please order this test together with GLUCOSE, FASTING (GLF)

Specimen:	Plasma (Sodium fluoride, grey top, 3mL) preferred for single test; Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL) when multiple tests are ordered
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Sample collection time not labelled properly on tube
Method:	Hexokinase/G-6-PDH
Useful for:	Diagnosis of diabetes mellitus
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (Ext 2407)

GLUCOSE TOLERANCE TEST (2 SPECIMENS), Code: GTT2

Specimen:	Plasma (Sodium fluoride, grey top, 3mL) and Urine (Sterile container).
Collection:	Submit 2 groups of specimens: 1. Fasting (plasma and urine) 2. 2 hours after glucose (75g) intake (plasma and urine)
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Sample collection time not labelled properly (fasting/ 2 nd hour) on tubes
Method:	Hexokinase/G-6-PDH (plasma), Glucose oxidase/peroxidase (urine)
Useful for:	Diagnosis of diabetes mellitus
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (Ext 2407)

GLUCOSE TOLERANCE TEST (PREGNANCY ORAL), Code: POGTT

Specimen:	Plasma (Sodium fluoride, grey top, 3mL) and Urine (Sterile container).
Collection:	Submit 3 points of specimens: 1. Fasting (plasma and urine) 2. 1 hour after glucose (75g) intake (plasma only) 3. 2 hours after glucose (75g) intake (plasma and urine)
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Sample collection time not labelled properly (fasting/1 st / 2 nd hour) on tubes
Method:	Hexokinase/G-6-PDH (plasma), Glucose oxidase/peroxidase (urine)
Useful for:	Diagnosis of diabetes mellitus in pregnancy
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (Ext 2407)

Refer to changes highlighted yellow

GLUCOSE, CSF, Code: CSFB

(Part of CSF Biochemistry: Glucose and Protein Panel)

Specimen:	Cerebrospinal Fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Hexokinase/G-6-PDH & Turbidimetric with Benzethonium Chloride
Useful for:	Assessment of CNS disease and infection
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

GLUCOSE, FASTING, Code: GLF

Specimen:	Plasma (Sodium fluoride, grey top, 3mL) preferred for single test; Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL) when multiple tests are ordered
Collection:	Fasting for at least 8 hours
Specimen Stability:	7 days at 2-8°C. Not recommended as add on for Li-Heparin plasma as glucose degrades over time.
Rejection Criteria:	NA
Method:	Hexokinase/G-6-PDH
Useful for:	Diagnosis of diabetes mellitus
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (Ext 2407)

GLUCOSE, FLUID, Code: FLB

(Part of Fluid Biochemistry: Glucose and Protein Panel)

Specimen:	Body fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Refer to individual test method
Useful for:	Identification of fluid effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

GLUCOSE, RANDOM, Code: GLR

Specimen:	Plasma (Sodium fluoride, grey top, 3mL) preferred for single test Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL) when multiple tests are ordered
Collection:	NA
Specimen Stability:	7 days at 2-8°C. Not recommended as add on for Li-Heparin plasma as glucose degrades over time.
Rejection Criteria:	NA
Method:	Hexokinase/G-6-PDH
Useful for:	Diagnosis of diabetes mellitus
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (Ext 2407)

GLUCOSE, URINE, Code: UGLU

Specimen:	Random Urine (Sterile container)
Collection:	A mid-stream urine specimen is recommended. Avoid collecting during menstrual period as it may contaminate urine
Specimen Stability:	Up to 2 hours at room temperature, up to 24 hours at 2-8°C
Rejection Criteria:	Specimen exceeds stability
Method:	Urine Dipstick (Glucose Oxidase)
Useful for:	Screening or management of diabetes mellitus
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

GLYCATED HAEMOGLOBIN (HbA1C), Code: HBA1C

Specimen:	Whole blood (EDTA, purple top, 3mL).
Collection:	If BG and/or FBC is also requested, please take an extra EDTA purple top for this test. Mix specimen well to avoid clotting
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Clotted specimen
Method:	Enzymatic
Useful for:	Long term monitoring of glucose control in diabetes mellitus
Reference range:	See laboratory report
Performed:	Office hours only
TAT:	1 day
Section:	Biochemistry (ext 2407)

GRAM STAIN MICROSCOPY, Code: GRAM

Specimen:	Any (Sterile container or Swab)
Collection:	NA
Specimen Stability:	NA
Rejection Criteria:	NA
Method:	Conventional Gram Stain
Useful for:	NA
Reference range:	NA
Performed:	Daily
TAT:	1 day
Section:	Microbiology (ext 2436)

HDL CHOLESTEROL, Code: HDL

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	N/A
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Grossly haemolysed, Icteric or Lipemic
Method:	Colorimetric with accelerator selective detergent
Useful for:	Cardiovascular risk assessment
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

HEPATITIS A IGM ANTIBODY, Code: HAM

Specimen:	Serum (SST, Yellow top, 5 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Diagnosis of acute or recent hepatitis A infection
Reference range:	Non-reactive
Performed:	Office hours only
TAT:	1-7 days
Section:	Virology and Serology (ext 2322)

HEPATITIS A IGG ANTIBODY, Code: HAG

Specimen:	Serum (SST, Yellow top, 5 mL)
Collection:	NA
Specimen Stability:	14 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Diagnosis of Hepatitis A infection or vaccination Presence of IgG anti-HAV, with a non-reactive IgM anti-HAV test result, implies past infection with hepatitis A virus (HAV) or vaccination against HAV
Reference range:	Non-reactive or Reactive (if immunized)
Performed:	Office hours only
TAT:	1-7 days
Section:	Virology and Serology (ext 2322)

HEPATITIS B CORE, TOTAL ANTIBODY, Code: HBT

Specimen:	Serum (SST, Yellow top, 5 mL)
Collection:	NA
Specimen Stability:	14 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Detection for acute or chronic Hepatitis B infection, persists for life
Reference range:	Non-reactive
Performed:	Office hours only
TAT:	1-3 days
Section:	Virology and Serology (ext 2322)

HEPATITIS B SURFACE ANTIGEN, Code: HB1

Specimen:	Serum (SST, Yellow top, 5 mL)
Collection:	NA
Specimen Stability:	6 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Diagnosis of acute or chronic Hepatitis B infection; earliest routine indicator. Repeatedly reactive result will be automatically reflexed to HBsAg Confirmatory (Neutralisation) assay.
Reference range:	Non-reactive
Performed:	Office hours only
TAT:	1-2 days
Section:	Virology and Serology (ext 2322)

HEPATITIS B SURFACE ANTIBODY, Code: HB2

Specimen:	Serum (SST, Yellow top, 5 mL)
Collection:	NA
Specimen Stability:	14 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Used to detect natural immunity or vaccination to Hepatitis B
Reference range:	≥ 10 mIU/mL indicates evidence of protective immunity either from past infection or vaccination
Performed:	Office hours only
TAT:	1 day
Section:	Virology and Serology (ext 2322)

HEPATITIS B VIRAL LOAD (DNA), Code: HBVDNA

Specimen:	Plasma (EDTA, purple top, 4 mL)
Collection:	NA
Specimen Stability:	6 days at 2-8°C
Rejection Criteria:	NA
Method:	NAAT
Useful for:	Detection and quantification of hepatitis B virus (HBV) DNA in patients with HBV infection (ie, HBsAg-positive). Monitor response to Anti-HBV therapy.
Reference range:	Not Detected
Performed:	Office Hours Only
TAT:	1-3 days
Section:	Virology and Serology (ext 2322)

HEPATITIS C TOTAL ANTIBODY, Code: HCV

Specimen:	Serum (SST, Yellow top, 5 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Detects acute or chronic infection to Hepatitis C Repeatedly reactive result should be confirmed by Hepatitis C confirmatory assay.
Reference range:	Non-reactive
Performed:	Office hours only
TAT:	1 day
Section:	Virology and Serology (ext 2322)

HIGH-SENSITIVE C-REACTIVE PROTEIN, Code: HSCR

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	2 months at 2-8°C
Rejection Criteria:	NA
Method:	Turbidimetric/Immunoturbidimetric
Useful for:	A diagnostic indicator of infections and inflammation particularly in paediatric patients and monitoring response to therapy. Useful for risk management of coronary heart disease.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

HIV-1/HIV-2 ANTIGEN and ANTIBODY, Code: HIV

Specimen:	Serum (SST, Yellow top, 5 mL)
Collection:	NA
Specimen Stability:	14 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Determination of HIV p24 antigen and antibodies to HIV-1 and HIV-2 Repeatedly reactive result should be confirmed by HIV confirmatory assay.
Reference range:	Non-reactive
Performed:	Office hours only
TAT:	1-2 days
Section:	Virology and Serology (ext 2322)

HUMAN CHORIONIC GONADOTROPIN BETA TOTAL (β -hCG), Code: QUA

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Early detection and monitoring of pregnancy. A tumour marker for hydatiform mole, choriocarcinoma and testicular cancer
Reference range:	See laboratory report
Performed:	Office hours only
TAT:	2 days, STAT
Section:	Immunology (ext 2407)

INFERTILITY STUDIES (FEMALE), Code: ISF

Tests include Estradiol, FSH, LH, Progesterone, Prolactin and Beta-HCG

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Investigation of infertility for females
Reference range:	See laboratory report
Performed:	Every Monday and Thursday
TAT:	3 days
Section:	Immunology (ext 2407)

INFERTILITY STUDIES (MALE), Code: IFM

Tests include FSH, LH, Prolactin and Testosterone

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Investigation of infertility for males
Reference range:	See laboratory report
Performed:	Every Monday and Thursday
TAT:	3 days
Section:	Immunology (ext 2407)

INSULIN , Code: INS

Specimen:	Serum (SST, yellow top, 5mL)
Collection:	Fasting for at least 8 hours. Send the sample to the lab immediately.
Specimen Stability:	7 days at -10°C or colder
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Aids in diagnosis of diabetes mellitus, differential diagnosis of fasting hypoglycaemia (factitious hypoglycaemia, insulin autoimmune hypoglycaemia and insulinoma)
Reference range:	See laboratory report
Performed:	Monday & Thursday
TAT:	2-3 days
Section:	Immunology (ext 2407)

INTERNATIONAL NORMALISED RATIO, Code: INR

Specimen:	Plasma (Sodium Citrate, blue top)
Collection:	Up to line indicated on tube
Specimen Stability:	2 hours from the time of collection
Rejection Criteria:	Under filled, over filled, haemolysed and/or clotted, lipaemic, icteric
Method:	Derived from calculation
Useful for:	Monitoring of warfarin dosage
Reference range:	See Laboratory Report
Performed:	Daily
TAT:	1 day, STAT
Section:	Haematology (ext 2408)

IRON, Code: FE

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Colorimetric with Ferene
Useful for:	Evaluation of Iron metabolism. Aid in diagnosis and treatment of diseases such as iron deficiency anemia, hemochromatosis and chronic renal disease.
Reference range:	See laboratory report
Performed:	Every Tuesday and Friday
TAT:	3 days
Section:	Biochemistry (ext 2407)

IRON STUDIES, Code: IS

Tests include Total Iron, Ferritin, Transferrin, Transferrin Saturation and TIBC

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Refer to individual test method
Useful for:	Evaluation of Iron metabolism. Aid in diagnosis and treatment of diseases such as iron deficiency anemia, hemochromatosis and chronic renal disease.
Reference range:	See laboratory report
Performed:	Every Tuesday and Friday
TAT:	3 days
Section:	Biochemistry (ext 2407)

KETONE, URINE, Code: UK

Specimen:	Random Urine (Sterile container)
Collection:	A mid-stream urine specimen is recommended. Avoid collecting during menstrual period as it may contaminate urine
Specimen Stability:	Up to 2 hours at room temperature, up to 24 hours at 2-8°C
Rejection Criteria:	Specimen exceeds stability
Method:	Urine Dipstick (Sodium nitroprusside)
Useful for:	Screening for presence of ketoacidosis
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

LACTATE, Code: LAC

OTHER TEST NAME: LACTIC ACID

Specimen:	Plasma (Sodium fluoride, grey top, 3 mL)
Collection:	Avoid clenching and unclenching hands before or during phlebotomy. Ideally, a tourniquet should not be used. If a tourniquet is applied and the blood draw is unsuccessful, it should be removed and a minimum of two minutes should pass before attempting another draw.
Specimen Stability:	Send to the Lab immediately within 30 minutes for rapid centrifugation, as delays can lead to elevated lactic acid levels.
Rejection Criteria:	NA
Method:	Enzymatic, Lactic acid to pyruvate
Useful for:	Evaluation of metabolic and lactic acidosis
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

LACTATE, CSF, Code: CSFLAC

Specimen:	Cerebrospinal Fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Enzymatic, Lactic acid to pyruvate
Useful for:	Assessment of CNS disease and infection
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

LACTATE, FLUID, Code: LACFLU

Specimen:	Body fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Enzymatic, Lactic acid to pyruvate
Useful for:	Identification of fluid effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

LACTATE DEHYDROGENASE, Code: LDH

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	NA
Method:	IFCC, lactate to pyruvate
Useful for:	Non-specific marker of cellular damage. Aid in the differential diagnosis and treatment of hemolytic anaemia, liver diseases, cardiac diseases, and used as a tumour marker in some malignancies.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

LACTATE DEHYDROGENASE (LDH), CSF, Code: LDHCSF

Specimen:	Cerebrospinal Fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	IFCC, Lactate to Pyruvate
Useful for:	Assessment of CNS disease and infection
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

LACTATE DEHYDROGENASE (LDH), FLUID, Code: LDHFLU

Specimen:	Body fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	IFCC, Lactate to Pyruvate
Useful for:	Identification of fluid effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

LIPID PROFILE (CORONARY RISK FACTORS), Code: LIP

Tests include Total Cholesterol, LDL Cholesterol, HDL Cholesterol, Triglycerides and Total Cholesterol/HDL ratio

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Fasting is recommended for at least 8 hours
Specimen Stability:	5 days at 2-8°C
Rejection Criteria:	NA
Method:	Refer to individual test method
Useful for:	Diagnosis of hyperlipidemia and cardiovascular risk assessment
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted yellow

LIVER FUNCTION TEST, Code: LFT

Tests include Total Protein, Albumin, Globulin, A/G Ratio, Bilirubin Total, ALP, AST/SGOT, ALT/SGPT and GGT

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Refer to individual test method
Useful for:	Assessment of liver function
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

LUTEINIZING HORMONE, Code: LH

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Evaluating the hypothalamic-pituitary-gonadal axis in diagnosing conditions such as amenorrhea, androgen deficiency, and gonadal dysfunction.
Reference range:	See laboratory report
Performed:	Every Monday and Thursday
TAT:	3 days, STAT
Section:	Immunology (ext 2407)

MAGNESIUM, Code: MG

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Enzymatic
Useful for:	Diagnosis and monitoring of hypo- and hypermagnesemia
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

MAGNESIUM, 24-HOURS URINE, Code: UMG24

Specimen:	Urine (24hr urine container)
Collection:	Preserve urine using 20 to 30 mL of 6M HCL and store refrigerated during collection period
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	NA
Method:	Enzymatic
Useful for:	Diagnosis and monitoring of hypo- and hypermagnesemia
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

MALARIAL PARASITE SCREEN, Code: MS

Specimen:	Whole blood, (EDTA purple top, 4ml)
Collection:	Preferably at peak of fever
Specimen Stability:	48 hours from the time of collection
Rejection Criteria:	Haemolysed and/or clotted
Method:	Field stain, Microscopic analysis
Useful for:	Detection and identification of malarial parasites
Reference range:	No malaria parasite detected
Performed:	Daily
TAT:	1 day, STAT
Section:	Haematology (ext 2408)

MENINGITIS/ ENCEPHALITIS PANEL PCR, Code: MEP

Specimen:	Cerebro-spinal Fluid (CSF)
Collection:	Minimum volume – 0.2 mL (200 µL)
Specimen Stability:	24 hours – Room temperature (Approx. 23°C)/ 7 days- Refrigeration (Approx. 4°C)
Rejection Criteria:	NA
Method:	BioFire FilmArray Torch
Useful for:	For the detection and identification of bacterial, viral, and yeasts nucleic acids from multiple meningitis and encephalitis pathogens
Reference range:	Not Detected
Performed:	Daily
TAT:	1 day
Section:	Microbiology (ext 2436)

METHOTREXATE, Code: MTX

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Protect sample from light and send to lab immediately
Specimen Stability:	2 days at 2-8°C
Rejection Criteria:	Sample not protected from light
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Immunology (ext 2407)

MICROALBUMIN, URINE RANDOM, Code: MAS

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Turbidimetric/Immunoturbidimetric
Useful for:	Early detection of diabetic nephropathy
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

MICROALBUMIN, 24-HOURS URINE, Code: UALB24

Specimen:	Urine (24hr urine container)
Collection:	Preserve urine using 20 to 30 mL of 6M HCL and store refrigerated during collection period
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Turbidimetric/Immunoturbidimetric
Useful for:	Early detection of diabetic nephropathy
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

MICROFILARIA PARASITES, Code: MFS

Specimen:	Whole blood, (EDTA purple top, 4ml)
Collection:	Send immediately to the laboratory
Specimen Stability:	48 hours from the time of collection
Rejection Criteria:	Haemolysed and/or clotted
Method:	Field stain, Microscopic analysis
Useful for:	Detection of microfilariae in blood to aid in the diagnosis of Filariasis
Reference range:	Negative
Performed:	Office hours only
TAT:	1 day
Section:	Haematology (ext 2408)

MICROSCOPY AND CELL COUNT, FLUID, Code: FLF

Specimen:	Body Fluid (Sterile Screw-capped container, 1 ml)
Collection:	NA
Specimen Stability:	Send to laboratory as soon as possible
Rejection Criteria:	NA
Method:	Light microscopy
Useful for:	Presumptive diagnosis of bacterial infection
Reference range:	NA
Performed:	Daily
TAT:	1 day, STAT
Section:	Microbiology (ext 2436)

MICROSCOPIC EXAMINATION, CSF (including Gram Stain), Code: CSFF

Specimen:	CSF (Sterile container)
Collection:	NA
Specimen Stability:	Send to laboratory as soon as possible
Rejection Criteria:	Heavily blood-stained specimen
Method:	Light microscopy
Useful for:	Diagnosis of bacterial meningitis
Reference range:	Leukocytes 0-5 μ l
Performed:	Daily
TAT:	1 day
Section:	Microbiology (ext 2436)

MICROSCOPIC EXAMINATION, STOOL, Code: FM

Specimen:	Stool (Sterile container with attached spatula)
Collection:	NA
Specimen Stability:	Send to laboratory as soon as possible
Rejection Criteria:	Specimens other than stool
Method:	Light microscopy
Useful for:	Detection of parasites in stool
Reference range:	No ova, cysts and parasitic infection
Performed:	Daily
TAT:	1 day, STAT
Section:	Microbiology (ext 2436)

M. TUBERCULOSIS COMPLEX / RIFAMPICIN RESISTANCE PCR, Code: MTBR

Specimen:	Sputum (3 mL), or CSF (2 mL)
Collection:	Collect in a dedicated sterile screw-capped container, and deliver to the lab immediately
Specimen Stability:	Refer to Lab
Rejection Criteria:	NA
Method:	Xpert MTB/RIF Assay using Real-time Polymerase Chain Reaction
Useful for:	Rapid detection of <i>Mycobacterium tuberculosis</i> DNA for the diagnosis of pulmonary tuberculosis, and presumptive detection of rifampin resistance based on the presence of resistance-associated mutations (This test should always be performed in conjunction with mycobacterial culture)
Reference range:	Not Detected
Performed:	Office hours only
TAT:	1-3 days
Section:	Virology and Serology (ext 2322)

N-TERMINAL PRO B-TYPE NATRIURETIC PEPTIDE, Code: NTPROBNP

Specimen:	Serum (SST, yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	6 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Aids in diagnosis of congestive heart failure (CHF), detection of mild forms of cardiac dysfunction and assessment of heart failure severity. Useful for monitoring treatment in patients with left ventricular dysfunction.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Immunology (ext 2407)

OSMOLALITY (SERUM), Code: OSS

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Not recommended as an add-on because exposure to air can cause evaporation, which may increase the osmolality of the specimen.
Specimen Stability:	36 hours at room temperature
Rejection Criteria:	NA
Method:	Freezing point osmometry
Useful for:	Assessment of fluid and electrolyte balance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

OSMOLALITY (URINE), Code: UOS

Specimen:	Urine (Sterile container)
Collection:	Not recommended as an add-on because exposure to air can cause evaporation, which may increase the osmolality of the specimen.
Specimen Stability:	36 hours at room temperature
Rejection Criteria:	NA
Method:	Freezing point osmometry
Useful for:	Assessment of fluid and electrolyte balance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted yellow

PARATHYROID HORMONE , Code: PTH

Specimen:	Plasma (EDTA, purple top, 4mL)
Collection:	NA
Specimen Stability:	2 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Aids in differential diagnosis of hypercalcemia, hypocalcemia, and parathyroid disorders. Useful in monitoring dialysis patients to manage renal osteodystrophy.
Reference range:	See laboratory report
Performed:	Monday, Wednesday & Friday
TAT:	2 days
Section:	Immunology (ext 2407)

PHENOBARBITAL, Code: PHNO3

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	6 months at 2-8°C
Rejection Criteria:	NA
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Useful for:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

PHENYTOIN, Code: PHNY2

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	1 month at 2-8°C
Rejection Criteria:	NA
Method:	Enzyme Immunoassay
Useful for:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

PHOSPHATE/PHOSPHORUS, Code: PO4

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	NA
Method:	Phosphomolybdate Formation
Useful for:	Used in the diagnosis and treatment of various disorders including parathyroid gland, kidney diseases and vitamin D imbalance.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

PHOSPHATE/PHOSPHORUS, URINE RANDOM, Code: UPO4

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Phosphomolybdate Formation
Useful for:	Used in the diagnosis and treatment of various disorders including parathyroid gland, kidney diseases and vitamin D imbalance.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

PHOSPHATE/PHOSPHORUS, 24 HOURS-URINE, Code: UPO424

Specimen:	Urine (24hr urine container)
Collection:	Preserve urine using 20 to 30 mL of 6M HCL and store refrigerated during collection period
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Phosphomolybdate Formation
Useful for:	Used in the diagnosis and treatment of various disorders including parathyroid gland, kidney diseases and vitamin D imbalance.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

PNEUMONIA PCR PANEL, Code: PNP

Specimen:	Bronchoalveolar lavage (BAL), Sputum including induced and expectorated sputum and endotracheal aspirate (ETA) (Sterile container)
Collection:	Minimum volume – 0.2 mL (200 µL)
Specimen Stability:	1 day at 2-8°C
Rejection Criteria:	Samples other than respiratory samples
Method:	BioFire FilmArray Torch
Useful for:	For the detection and identification of multiple respiratory viral and bacterial nucleic acids as well as selected antimicrobial resistance genes from specimens obtained from individuals suspected of lower respiratory tract infections.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Microbiology (ext 2436)

POTASSIUM, Code: POT

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Indirect Ion-selective electrode potentiometry
Useful for:	Assessment of electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

POTASSIUM, 24-HOURS URINE, Code: UPOT24

Specimen:	Urine (24hr urine container)
Collection:	No preservative needed and store refrigerated during collection period
Specimen Stability:	2 months at 2-8°C
Rejection Criteria:	NA
Method:	Indirect Ion-selective electrode potentiometry
Useful for:	Evaluation / assessment of electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

POTASSIUM, FLUID, Code: POTFLU

Specimen:	Body fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Indirect Ion-selective electrode potentiometry
Useful for:	Identification of fluid effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

POTASSIUM, URINE, Code: UPOT

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	2 months at 2-8°C
Rejection Criteria:	NA
Method:	Indirect Ion-selective electrode potentiometry
Useful for:	Evaluation / assessment of electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

PROCALCITONIN, Code: PCT

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	2 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Aid in differentiation of bacterial infection, assessment of severity of bacterial infection in suspect sepsis patients, aid in prognosis and monitoring antibiotic therapy.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Immunology (ext 2407)

PROGESTERONE, Code: PRG

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	10 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Evaluation of ovarian function and abnormal pregnancy. Detection of progesterone-secreting tumour. Aid in optimizing IVF procedure for successful embryo implantation.
Reference range:	See laboratory report
Performed:	Every Monday and Thursday
TAT:	3 days, STAT
Section:	Immunology (ext 2407)

PROLACTIN, Code: PRL

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Evaluation of subfertility, hypogonadism and pituitary gland function
Reference range:	See laboratory report
Performed:	Every Monday and Thursday
TAT:	3 days
Section:	Immunology (ext 2407)

PROSTATE-SPECIFIC ANTIGEN TOTAL, Code: PSA

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	24 hours at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Tumour marker for prostate cancer. Indicator for benign hypertrophy and prostatitis.
Reference range:	See laboratory report
Performed:	Office hours only
TAT:	2 days
Section:	Immunology (ext 2407)

PROTEIN, 24 HOURS URINE, Code: UTP24

Specimen:	Urine (24hr urine container)
Collection:	No preservative needed and store refrigerated during collection period
Specimen Stability:	6 days at 2-8°C
Rejection Criteria:	NA
Method:	Turbidimetric with Benzethonium Chloride
Useful for:	Indicator of renal impairment
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

PROTEIN, CSF, Code: CSFB

(Part of CSF Biochemistry: Glucose and Protein Panel)

Specimen:	Cerebrospinal Fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Hexokinase/G-6-PDH & Turbidimetric with Benzethonium Chloride
Useful for:	Assessment of CNS disease and infection
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

PROTEIN, URINE RANDOM, Code: UTP

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Turbidimetric with Benzethonium Chloride
Useful for:	Indicator of renal impairment
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

PROTEIN, FLUID, Code: FLB

(Part of CSF Biochemistry: Glucose and Protein Panel)

Specimen:	Body fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Refer to individual test method
Useful for:	Identification of fluid effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

PROTEIN CREATININE RATIO, Code: PCRTR

Specimen:	Urine (Sterile container or 24hr urine container)
Collection:	Random or 24 hours. No preservative needed
Specimen Stability:	6 days at 2-8°C
Rejection Criteria:	NA
Method:	Refer to individual test method
Useful for:	Indicator of renal impairment
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

PROTEIN TOTAL, Code: TP

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at room temperature and at 2-8°C
Rejection Criteria:	NA
Method:	Colorimetric with Biuret
Useful for:	Aid in diagnosis and treatment of various diseases involving liver, kidney or bone marrow, other metabolic or nutritional disorders.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

PROTHROMBIN TIME, Code: PT

Specimen:	Plasma (Sodium Citrate, blue top)
Collection:	Up to line as indicated on tube
Specimen Stability:	2 hours from the time of collection
Rejection Criteria:	Under filled, over filled, haemolysed and/or clotted, lipaemic, icteric
Method:	Coagulometric Measurement
Useful for:	Screening test for clotting disorders. Monitoring of anticoagulation therapy
Reference range:	See Laboratory Report
Performed:	Daily
TAT:	1 day, STAT
Section:	Haematology (ext 2408)

PT 50% CORRECTION, Code: PT50

Specimen:	Plasma (Sodium Citrate, blue top)
Collection:	Up to line as indicated on tube
Specimen Stability:	2 hours from the time of collection
Rejection Criteria:	Under filled, over filled, haemolysed and/or clotted, lipaemic, icteric
Method:	Coagulometric Measurement
Useful for:	Follow up test to investigate cause of unexplained prolonged PT. Differentiates between possibility of factor deficiency or acquired coagulation inhibitors of the extrinsic and common pathways.
Reference range:	See Laboratory Report
Performed:	Daily
TAT:	1 day
Section:	Haematology (ext 2408)

RAPID PLASMA REAGIN, Code: RPR

Specimen:	Serum (SST, Yellow top, 5 mL)
Collection:	NA
Specimen Stability:	5 days at 2-8°C
Rejection Criteria:	NA
Method:	Flocculation test
Useful for:	Detection of reagin antibodies associated with syphilis; to monitor response to syphilis treatment
Reference range:	NA
Performed:	Office hours only
TAT:	2 days
Section:	Virology and Serology (ext 2322)

RENAL FUNCTION TEST, Code: RFT

Tests include Electrolytes, Urea, Creatinine and Uric Acid

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	NA
Method:	See individual test method
Useful for:	Assessment of renal function
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

RESPIRATORY PCR PANEL, Code: RP

Specimen:	Nasopharyngeal swab (NPS)
Collection:	Immediately place swab in the medium provided Minimum volume – 0.3 mL (300 µL)
Specimen Stability:	24 hours – Room temperature (15-25°C)/ 7 days- Refrigeration (2-8°C)
Rejection Criteria:	-
Method:	BioFire FilmArray Torch
Useful for:	For qualitative detection and identification of multiple respiratory viral and bacterial nucleic acids in nasopharyngeal swabs (NPS) obtained from individuals suspected of respiratory tract infections
Reference range:	Not Detected
Performed:	Daily
TAT:	1 day
Section:	Microbiology (ext 2436)

RESPIRATORY VIRUS (FLU A/B, RSV, RESP. ADENOVIRUS) SCREENING, Code: RES3

Specimen:	Nasal/Nasopharyngeal swab (Dry Swab)
Collection:	NA
Specimen Stability:	8 hours at 2-8°C
Rejection Criteria:	Gel swab
Method:	Rapid immunochromatographic assay
Useful for:	Determination of type of Influenza infection (type A or B), Respiratory Syncytial virus and Adenovirus antigens
Reference range:	Negative
Performed:	Daily
TAT:	1 day, STAT
Section:	Virology and Serology (ext 2322)

RETICULOCYTE COUNT, Code: RET

Specimen:	Whole blood (EDTA purple top)
Collection:	4ml for EDTA tube and 500ul for microtainer
Specimen Stability:	4 hours at room temperature
Rejection Criteria:	Haemolysed and/or clotted
Method:	Supravital staining, manual technique or by electronic blood cell analyser
Useful for:	Assessment of erythropoietic activity and evaluation of anemia
Reference range:	See Laboratory Report
Performed:	Daily
TAT:	1 day, STAT
Section:	Haematology (ext 2408)

RHEUMATOID FACTOR, Code: RHE

Specimen:	Serum (SST yellow top, 5mL)
Collection:	NA
Specimen Stability:	2 days at 2-8°C
Rejection Criteria:	NA
Method:	Turbidimetric/Immuno-turbidimetric
Useful for:	Supports diagnosis of Rheumatoid Arthritis and evaluation of ankylosing spondylitis, sjogren's syndrome, scleroderma, dermatomyositis and SLE
Reference range:	See laboratory report
Performed:	Every Monday, Wednesday and Friday
TAT:	2 days
Section:	Biochemistry (ext 2407)

RISK STRATIFICATION USING TROPONIN-I, Code: RISK

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	24 hours at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	To aid in stratifying the risk of cardiovascular disease, including cardiovascular death, MI, coronary revascularization, heart failure, or ischemic stroke in asymptomatic individuals
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

ROTAVIRUS ANTIGEN, STOOL Code: FVSR

Specimen: Stool (Sterile container with attached spatula)
 Collection: NA
 Specimen Stability: 72 hours at 2-8°C
 Rejection Criteria: Specimens other than stool
 Method: Rapid strip test
 Useful for: Detection of rotavirus in stool
 Reference range: Negative
 Performed: Daily
 TAT: 1 day
 Section: Microbiology (ext 2436)

SALMONELLA TYPHI IgG/IgM, CODE: STGM

Specimen: Serum or Plasma or Whole Blood
 Collection: SST or Plain Tube/ Lithium Heparin Tube/ K2-EDTA Tube
 Specimen Stability: 72 hours at 2-8°C (Serum/ Plasma)/ 48 hours at 2-8°C (Whole Blood)
 Rejection Criteria: Haemolysed
 Method: Immunochromatographic Test
 Useful for: Detection of Salmonella typhi IgG and IgM antibodies
 Reference range: Negative
 Performed: Daily
 TAT: 1 day
 Section: Microbiology (ext 2436)

SODIUM, Code: NA

Specimen: Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
 Collection: NA
 Specimen Stability: 2 weeks at 2-8°C
 Rejection Criteria: NA
 Method: Indirect Ion-selective electrode potentiometry
 Useful for: Evaluation of fluid and electrolyte imbalance
 Reference range: See laboratory report
 Performed: Daily
 TAT: 1 day, STAT
 Section: Biochemistry (ext 2407)

SODIUM, 24-HOURS URINE, Code: UNA24

Specimen:	Urine (24hr urine container)
Collection:	No preservative needed and store refrigerated during collection period
Specimen Stability:	45 days at 2-8°C
Rejection Criteria:	NA
Method:	Indirect Ion-selective electrode potentiometry
Useful for:	Evaluation of fluid and electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

SODIUM, FLUID, Code: NAFLU

Specimen:	Body fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Indirect Ion-selective electrode potentiometry
Useful for:	Identification of fluid effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

SODIUM, URINE RANDOM, Code: UNA

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	45 days at 2-8°C
Rejection Criteria:	NA
Method:	Indirect Ion-selective electrode potentiometry
Useful for:	Evaluation of fluid and electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

SYNOVIAL FLUID for CRYSTAL EXAMINATION, Code: SFC

Specimen:	Synovial Fluid (Sterile container)
Collection:	-
Specimen Stability:	-
Rejection Criteria:	-
Method:	Wet preparation for microscopic analysis
Useful for:	Detection of crystals and specific infections
Reference range:	-
Performed:	Office hours only
TAT:	1 day
Section:	Microbiology (ext 2436)

SYPHILIS SCREENING, Code: SYP

Specimen:	Serum (SST, Yellow top, 5 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Determination of anti-Treponema pallidum antibodies in human Serum (Recommended for syphilis screening)
Reference range:	Non-reactive
Performed:	Office hours only
TAT:	1-2 days
Section:	Virology and Serology (ext 2322)

TACROLIMUS, Code: TACRO

Specimen:	Whole blood (EDTA, purple top, 3mL).
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Therapeutic Drug Monitoring for Organ Transplant
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Immunology (ext 2407)

TESTOSTERONE TOTAL, Code: TES

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Evaluation of subfertility in males; hirsutism and virilisation in females
Reference range:	See laboratory report
Performed:	Every Monday and Thursday
TAT:	3 days
Section:	Immunology (ext 2407)

THEOPHYLLINE, Code: THE

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	3 months at 2-8°C
Rejection Criteria:	NA
Method:	Enzyme Immunoassay
Useful for:	Monitoring of theophylline
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

THYROGLOBULIN , Code: THY

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Used as tumour marker for papillary and follicular thyroid cancer. Aids in diagnosis of Thyrotoxicosis factitial and monitoring after total thyroid ablation (thyroidectomy)
Reference range:	See laboratory report
Performed:	Wednesday & Saturday
TAT:	2-3 days
Section:	Immunology (ext 2407)

THYROID AUTOANTIBODIES, Code: THA*Tests include Anti-Thyroid Receptor Antibody, Anti-Thyroid Peroxidase, Anti-Thyroglobulin*

Specimen:	Serum (SST, yellow top, 5mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Aids in differential diagnosis of autoimmune thyroid diseases.
Reference range:	See laboratory report
Performed:	Wednesday & Saturday
TAT:	2-3 days
Section:	Immunology (ext 2407)

THYROID FUNCTION TEST, Code: TFT*Tests include FT4, FT3 and Thyroid Stimulating Hormone*

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	6 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Diagnosis of hyperthyroidism and hypothyroidism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Immunology (ext 2407)

THYROID STIMULATING HORMONE, Code: TSH

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Diagnosis of hyperthyroidism and hypothyroidism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Immunology (ext 2407)

TRANSFERRIN, Code: TRANS

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	NA
Method:	Immunoturbidimetric
Useful for:	Screening test for iron status
Reference range:	See laboratory report
Performed:	Every Tuesday and Friday
TAT:	3 days
Section:	Biochemistry (ext 2407)

TREPONEMA PALLIDUM PARTICLE AGGLUTINATION, Code: TPA

Specimen:	Serum (SST, Yellow top, 5 mL)
Collection:	NA
Specimen Stability:	2 weeks at 2-8°C
Rejection Criteria:	Haemolysis, lipaemic, contaminated
Method:	Passive Particle Agglutination
Useful for:	Detection and titration of antibodies against causative agent of Syphilis (Recommended for syphilis confirmatory test)
Reference range:	Negative
Performed:	Office hours only
TAT:	3 days
Section:	Virology and Serology (ext 2322)

TRIGLYCERIDE, Code: TG

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Fasting is recommended for at least 8 hours
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Enzymatic with Glycerol Phosphate Oxidase
Useful for:	Diagnosis of hyperlipidemia and cardiovascular risk assessment
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

TRIGLYCERIDE, FLUID, Code: TGFLU

Specimen:	Body fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Glycerol Phosphate Oxidase
Useful for:	Identification of fluid effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

TROPONIN-I HIGH SENSITIVE STAT, Code: TRO

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	24 hours at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Aid in diagnosis of myocardial infarction and assessment of 30-day and 90-day prognosis to all-cause mortality and major adverse cardiac events.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Immunology (ext 2407)

UREA, Code: UR

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Kinetic
Useful for:	Assessment of renal function and differential diagnosis of prerenal, renal and postrenal hyperuremia.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

UREA, 24-HOURS URINE, Code: URU24

Specimen:	Urine (24hr urine container)
Collection:	No preservative needed
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Kinetic
Useful for:	Assessment of fluid balance and renal function
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

UREA, FLUID, Code: URFLU

Specimen:	Body fluid (Sterile container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Kinetic Urease
Useful for:	Identification of fluid effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

UREA, URINE RANDOM, Code: URU

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Kinetic
Useful for:	Assessment of fluid balance and renal function
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

URIC ACID, Code: SUA

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	8 hours at room temperature, 3 days at 2-8°C
Rejection Criteria:	NA
Method:	Enzymatic colorimetric with Uricase
Useful for:	Aid in diagnosis and treatment of renal and metabolic disorders, including renal failure, gout, leukemia, psoriasis, diabetes, hypothyroidism, and atherosclerosis.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

URIC ACID, 24-HOURS URINE, Code: UUA24

Specimen:	Urine (24hr urine container)
Collection:	No preservative needed
Specimen Stability:	2 days at room temperature and at 2-8°C
Rejection Criteria:	NA
Method:	Enzymatic colorimetric with Uricase
Useful for:	Evaluation of uric acid metabolism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

URIC ACID, URINE RANDOM, Code: UUA

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	2 days at room temperature and at 2-8°C
Rejection Criteria:	NA
Method:	Enzymatic colorimetric with Uricase
Useful for:	Evaluation of uric acid metabolism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

URIC ACID/CREATININE RATIO, Code: UUACRTR

Specimen:	Urine (Sterile container or 24hr urine container)
Collection:	No preservative needed
Specimen Stability:	2 days at room temperature and at 2-8°C
Rejection Criteria:	NA
Method:	Refer to individual test method
Useful for:	Aid in diagnosis and treatment of renal and metabolic disorders, including renal failure, gout, leukemia, psoriasis, diabetes, hypothyroidism, and atherosclerosis.
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

URINE (Bilharzia/Helminths), Code: UBH

Specimen:	Random Urine (Sterile container)
Collection:	-
Specimen Stability:	Up to 24 hours at 2-8°C
Rejection Criteria:	Specimen exceeds stability, container with preservative, non-sterile container
Method:	Wet slide preparation & Light Microscopy
Useful for:	Detection of Bilharzia or helminths in urine
Reference range:	-
Performed:	Office hours only
TAT:	1 day
Section:	Microbiology (ext 2436)

URINE DRUG SCREEN, Code: UDRUG

(Tests include Amphetamine/Methamphetamine, Benzodiazepine, Cannabinoids, Cocaine, Ecstasy (MDMA), Opiates, Creatinine, Specific Gravity)

Specimen:	Urine (Urine drug test container with temperature strip)
Collection:	Collect 2 specimens with at least 20 mL each. Seal the containers properly, date, time and initial on the seal stickers.
Specimen Stability:	5 days at 2-8°C
Rejection Criteria:	Only one urine specimen received, not sealed, tampered container seal, volume is less than 20 mL
Method:	Enzyme Immunoassay
Useful for:	Qualitative detection of drug abuse
Reference range:	See laboratory report
Performed:	Every Tuesday, Thursday, and Saturday
TAT:	2 days
Section:	Biochemistry (ext 2407)

Refer to changes highlighted yellow

URINE FEME, Code: MU

OTHER TEST NAME: Urinalysis

Specimen: Midstream Urine (Sterile container)
 Collection: -
 Specimen Stability: Up to 4 hours at room temperature; up to 24 hours at 2-8°C
 Rejection Criteria: Specimen exceeds stability, container with preservative, non-sterile container
 Method: **Reflectance photometry**
 Useful for: Urine analysis and microscopy
 Reference range: -
 Performed: Daily
 TAT: 1 day, STAT
 Section: Microbiology (ext 2436)

URINE RED CELL MORPHOLOGY, Code: RCM

Specimen: Random Urine (Sterile container)
 Collection: -
 Specimen Stability: Up to 2 hours at room temperature
 Rejection Criteria: Specimen exceeds stability, container with preservative
 Method: Phase contrast microscopy
 Useful for: Evaluation of Glomerular diseases
 Reference range: -
 Performed: Daily
 TAT: 1 day
 Section: Microbiology (ext 2436)

VALPROIC ACID, Code: VAL

Specimen: Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
 Collection: NA
 Specimen Stability: 2 days at 2-8°C
 Rejection Criteria: NA
 Method: Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
 Useful for: Therapeutic Drug Monitoring
 Reference range: See laboratory report
 Performed: Daily
 TAT: 1 day, STAT
 Section: Biochemistry (ext 2407)

VANCOMYCIN LEVEL, Code: VAN

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	2 days at 2-8°C
Rejection Criteria:	NA
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Useful for:	Therapeutic Drug Monitoring
Reference range:	NA
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

VANCOMYCIN LEVEL (PEAK), Code: VANP

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Collect 30 min after end of IV infusion or 60 min after IM injection
Specimen Stability:	2 days at 2-8°C
Rejection Criteria:	NA
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Useful for:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

VANCOMYCIN LEVEL (TROUGH), Code: VANT

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Collect specimen immediately before the next dose
Specimen Stability:	2 days at 2-8°C
Rejection Criteria:	NA
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Useful for:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

VITAMIN B12, Code: B12

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Useful for:	Assessment of vitamin B12 deficiency
Reference range:	See laboratory report
Performed:	Every Tuesday and Friday
TAT:	3 days
Section:	Immunology (ext 2407)

Refer to changes highlighted yellow

ANNEX C. TEST CATALOGUE (OUTSOURCE)For any outsourced test enquiry (including specific form and requirements), please call ext. 2127 **during office hours** only.

List of the test	Test Code	Sample Requirement	Remarks: Special Requirement/ Specific Send-Out Days	Turn Around Time (WORKING DAYS)
17-Hydroxyprogesterone	OHP	1 x 8ml Plain (Gel)		14
1p/ 19q Deletion (FISH)	1P19QF	Tissue sample in paraffin block		21
5 Hydroxy Indole Acetic Acid (5HIAA)	HIA	24hr urine collection	Please send the 24-hour urine collection container to the laboratory prior to the start of collection for the addition of preservative (HCl)	14
Acetylcholine Receptor Antibodies	ARA	1 x 8ml Plain (Gel)		14
Acetylsalicylic Acid (Aspirin)	SACQ	1 x 8ml Plain (Gel)		14
Acid a-Glucosidase	POMPE	Dried blood spot (whatmann 903 filter paper)	At least 3 circles of dried blood spot received	28
Adenosine Deaminase	PFADA	Pleural Fluid or CSF samples		21
Adrenocorticotrophic Hormone (ACTH)	ACT	1 x 4ml EDTA		14
AFB Mycobacterium Tuberculosis (QuantiFERON TB Gold)	MTBG	QuantiFERON-TB Gold Plus Blood Collection Tubes	Please collect the specific tube from laboratory. Advised sample collection time is before 9am, Monday to Friday.	10
AFB Smear and Culture	AFBCS	Sputum/Urine/CSF/Body Fluid samples	Please provide BruHIMS no.	60
Aldolase	ALD	1 x 8ml Plain (Gel)		8
Aldosterone	ALDOS	1 x 4ml EDTA		10
ALK Gene Rearrangement (FISH)	ALKFH	Tissue sample in paraffin block	Specific Form required	28
Allergy Test Common Food Mix 1	FX5	1 x 8ml Plain (Gel)		10
Allergy Test Pet Dander Mix	EX2P	1 x 8ml Plain (Gel)		10

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Allergy Test Seafood Mix	FX2P	1 x 8ml Plain (Gel)		10
Alpha Feto Protein CSF	CSFAFP	2ml CSF samples		10
Alpha Thalassaemia DNA	ATHS	1 x 4ml EDTA		30
Alpha-1-antitrypsin	AAT	1 x 8ml Plain (Gel)		15
Amino Acid Chromatography Plasma	AACP	6ml Lithium Heparin (GREEN)	Please include clinical and medication history	14
AML/MDS Basic Panel	8AML	1 x 4ml EDTA	Bone Marrow samples only	21
ANCA Blot	ANCABLOT	1 x 8ml Plain (Gel)	Please provide BruHIMS no.	7
Angiotensin Converting Enzyme (ACE)	ACE	1 x 8ml Plain (Gel)		14
Angiotensin Converting Enzyme (CSF only)	FACEC	2ml CSF samples		15
Anti NMDA Receptor	NMDAR	1 x 8ml Plain (Gel)	Please provide BruHIMS no.	7
Anti Nuclear Antibody	ANA	1 x 8ml Plain (Gel)		8
Antibody Identification	BAI	2 x 4ml EDTA	Please provide BruHIMS no.	7
Antibody Titre	BAT	2 x 4ml EDTA	Please provide BruHIMS no.	7
Anti-Diuretic Hormone	ADH	2 x 4ml EDTA		12
Anti-Musk Antibody	MUSK	1 x 8ml Plain (Gel)		14
Anti-Myelin Oligodendrocyte Glycoprotein Antibody	MOG	1 x 8ml Plain (Gel) OR 2ml CSF samples		10
Anti-Neutrophil Cytoplasmic Ab	ANCA	1 x 8ml Plain (Gel)		10
Anti-Streptolysin-O Titre	ASO	1 x 8ml Plain (Gel)		7
Anti-Thrombin III	AT3	2 x 2.7ml Sodium Citrate (Blue).		14
Apolipoprotein A	APA	1 x 8ml Plain (Gel)		10
Apolipoprotein B	APB	1 x 8ml Plain (Gel)		10
Aquaporin Antibody (<i>Aquaporin 4 Ab</i>)	NMO	1 x 8ml Plain (Gel) OR 2ml CSF samples		10
B CHRONIC LYMPHOPROLIFERATIVE PANEL	8BCLP	1 x 4ml EDTA	Bone Marrow samples only	21
Babysafe IEM Screening (IEM)	IEM	Guthrie Card	Specific Form required	21
Bacterial Antigen (CSF)	BACTAG	2ml CSF samples	Please provide BruHIMS no.	7
Bartonella Antibodies IgG and IgM	BTO	1 x 8ml Plain (Gel)		9

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BCL2 Gene Rearrangement (FISH) for Lymphoma	BCL2	Tissue sample in paraffin block	Specific Form required	21
BCL6 Gene Rearrangement (FISH) for Lymphoma	BCL6	Tissue sample n paraffin block	Specific Form required	21
Beta 2 Glycoprotein IgA	GPIA	1 x 8ml Plain (Gel)		15
Beta 2 Glycoprotein IgG	B2GG	1 x 8ml Plain (Gel)		13
Beta 2 Glycoprotein IgM	B2GM	1 x 8ml Plain (Gel)		13
Beta 2 Microglobulin	BMG	1 x 8ml Plain (Gel)		10
Beta Thalassemia DNA	TCB	1 x 4ml EDTA		14
Beta X Laps (C terminal telopeptide)	BXL	1 x 8ml Plain (Gel)		14
Beta-Hydroxybutyrates (Ketones)	KET	1 x 8ml Plain (Gel) OR 1 x Red top tube		14
BK Virus PCR Quantitative	BKVP	2 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs.	10
Blackberry IgE Serum	BLACK	1 x 8ml Plain (Gel)		28
Blueberry IgE Serum	BLUIGE	1 x 8ml Plain (Gel)		28
Bone Marrow Examination	BMEXAM	Bone Marrow Aspirate	Please provide BruHIMS no. and arrange with laboratory for sample collection (ext. 2408)	10
Borrelia (Lyme Disease) Confirmation by Western Blot	ICDWB	1 x 8ml Plain (Gel)		14
Borrelia (Lyme Disease) IgG and IgM	BORGGM	1 x 8ml Plain (Gel)		14
BRAF Mutation (Codons 600, 464-469)	BRAFB	Tissue sample in paraffin block		21
BRAF Mutation Analysis Tissue	BRAFP	Tissue sample in paraffin block		21
Brain Tumor Panel (1p19q, IDH1/ 2, MGMT)	B RTP	Tissue sample in paraffin block	Specific Form required	28
BRCA 1, 2, PTEN & P53 Germline [EDTA blood]	BRCAB	2 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required	21
BRCA1&2, PTEN,TP53 Somatic Testing	BRCAT	Tissue sample in paraffin block	Specific Form required	21

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Brucella Antibodies	BRU	1 x 8ml Plain (Gel)		14
Caeruloplasmin (Copper Oxide)	CAE	1 x 8ml Plain (Gel)		10
Calcitonin	CLT	1 x 8ml Plain (Gel)	12 hours before sample collection: patient should not take multivitamins or dietary supplements (e.g. hair, skin and nail supplements) containing biotin (Vitamin B7)	14
Cardiolipin Antibody (IgG, IgM)	CPIGM	1 x 8ml Plain (Gel)		14
Caris Cancer Profiling	CARIS	Tissue sample in paraffin block		60
CARIS Follow Up Tissue Block	CARIS	Tissue sample in paraffin block		60
Carnitine Plasma	CARN	6ml Lithium Heparin (GREEN)		14
Catecholamine	CATP	1 x 10ml EDTA META	Please collect the specific tube from laboratory. Advised sample collection time is before 9am, Monday to Friday.	14
Catecholamine 24h urine	UCAT	24hr urine collection	Please send the 24-hour urine collection container to the laboratory prior to the start of collection for the addition of preservative (HCl). Please provide list of medication that patient is currently taking.	14
CD19 (B Cell) Assay	CD19	1 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs.	7
CD20 (PAN B) Assay	CD20	1 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs.	7
CD4 Assay	CD4	1 x 4ml EDTA		14
CD4/8 Assay	CD48P	1 x 4ml EDTA		14
Centromere Ab	CEAB	1 x 8ml Plain (Gel)		21
Cherry IgE Serum	CHERRY	1 x 8ml Plain (Gel)		30

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Chikungunya Virus IgG	CKVG	1 x 8ml Plain (Gel)		14
Chikungunya Virus IgM	CKVM	1 x 8ml Plain (Gel)		14
Chlamydia IgG	CHG	1 x 8ml Plain (Gel)		14
Chlamydia IgM	CHM	1 x 8ml Plain (Gel)		14
Chlamydia, Gonorrhea,TV & M.Genitalium PCR	ECPCR	20ml of first void urine OR Dry Swab (genital, anorectal, oropharyngeal)		14
Chromogranin A	CHGA	1 x 8ml Plain (Gel)		14
Chromosome Analysis (Amniotic fluid)	CHR	20ml Amniotic fluid in sterile container (Falcon tube) Room temperature		14
Chromosome Analysis (Blood)	CHB	3 x 4ml Lithium Heparin (Green)		14
Chromosomes (Cytogenetics) Cancer Karyotyping	CYTG	1 x 4ml Lithium Heparin (Green)	Bone Marrow samples only	21
Chronic Inflammatory Demyelinating Polyradiculoneuropathy	CIDP	1 x 8ml Plain (Gel)		8
C-KIT Mutation Analysis	CKIT	Tissue sample in paraffin block		28
CMV PCR Qualitative	CMVPCR	Dry Swab OR 2ml CSF samples OR 20ml Random Urine	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs.	14
CMV PCR Quantitative	CMVPQ	1 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs.	10
CMV PCR Quantitative	CMVPS	1 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs.	10
Cocaine Confirmation	GCMS	20ml random urine		14
Common Food Mix 1 IgE	FX5	1 x 8ml Plain (Gel)		14

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Copper 24hour Urine	UCU	24hr urine collection	Please send the 24-hour urine collection container to the laboratory prior to the start of the collection for acid wash.	14
Copper Red Cell / Plasma	RCU	1 x 6ml of K2 EDTA (ROYAL BLUE)		14
Copper Serum	CU	1 x 8ml Plain (Gel)		14
Cotinine (Nicotine) - random urine cotinine	COT	20ml random urine		14
C-Peptide	CPP	1 x 8ml Plain (Gel)	Patient should fast for 8 hrs. Do not take multivitamins or dietary supplement containing biotin (vitamin B7), for 12hrs before specimen	14
Cranberry IgE Serum	CRANB	1 x 8ml Plain (Gel)		28
Cryptococcus Antigen Quantitative - SG	CRYPTO	1 x 8ml Plain (Gel) OR 2ml CSF samples		14
CSF TPPA	TPACSF	2ml CSF samples		14
CSF VDRL	VDRLCSF	2ml CSF samples		14
CYP2C19 Genotyping	CYP2	1 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs.	14
Cytology	CYT	Body Fluid		10
Cytomegalovirus IgG	CMG1	1 x 8ml Plain (Gel)	Please provide BruHIMS no.	7
Cytomegalovirus IgM	CMM1	1 x 8ml Plain (Gel)	Please provide BruHIMS no.	7
Delta Aminolevulinic Acid	DALA	20ml random urine		14
Diazepam (Valium)	DIZ	1 x 8ml Plain (Gel)	Please state time /date of last dose & time /date of collection.	14
Dihydropyrimidine Dehydrogenase Full Gene Sequencing	DPYDG			10

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Down Syndrome & NTD (First Trimester Test)	FTS	1 x 8ml Plain (Gel)	1/ Maternal Blood. 2/ 11 weeks - 13 weeks. 3/ Need NT & CRL measurement. 4/ Please provide name of registered diagnostic medical sonographer. 5/ Specific Form required	21
Down Syndrome & NTD (Second Trimester - Triple Test)	NTD	1 x 8ml Plain (Gel)	1/ Measure at 14 - 19 weeks gestation 2/ ALL relevant details - Maternal weight in kg, Maternal DOD, LMP, gestation determination MUST be on the form. Accurate gestation (preferably by ultrasound) is essential for correct risk assessment. 3/ Specific Form required	14
ds DNA Antibody	DNA	1 x 8ml Plain (Gel)		14
Dust Mite Mix	HX2P	1 x 8ml Plain (Gel)	Including: D. Pteronyssinus, D. farinae, cockroach, housedust	10
EBV EA IgA (NPC Marker)	EBE	1 x 8ml Plain (Gel)		11
EBV Quantitative PCR	EBVPCR	2 x 4ml EDTA	Aliquot plasma with minimum 1ml (yellow cap)	10
EBV VCA IgA (NPC Screen)	EBA	1 x 8ml Plain (Gel)		8
EBV VCA IgG (<i>Epstein Barr Virus Ab</i>)	EBG	1 x 8ml Plain (Gel)		14
EBV VCA IgM (<i>Epstein Barr Virus Ab</i>)	EBM	1 x 8ml Plain (Gel)		14
Ecstasy (MDMA)	GCMS	20ml random urine		14
EGFR Mutation (Exons 18,19,20,21)	EGFR	2 x 8ml cell free streck tube	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required	21
Encephalopathy Autoimmune Evaluation (Reflex not Included)	ENS2	1 x 8ml Plain (Gel) OR 4ml CSF samples		21

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Endomysial IgA	AEA	1 x 8ml Plain (Gel)		15
Epstein Barr Virus PCR (CSF only)	ECR	2ml CSF samples		10
Erythropoietin	EPO	1 x 8ml Plain (Gel)	Morning collection (7.30am-12pm) preferred	14
Extractable Nuclear Antigen	ENA	1 x 8ml Plain (Gel)		14
Factor 13	F13	2 x 2.7ml Sodium Citrate (Blue).		14
Factor 5 Leiden	APCR	2 x 2.7ml Sodium Citrate (Blue).		18
Factor 5 Leiden Mutation Analysis/Leiden Mutation PCR	FVM	2 x 4ml EDTA	Invert several times to mix blood.	15
Factor 8	F8	2 x 2.7ml Sodium Citrate (Blue).		14
Factor 9	F9	2 x 2.7ml Sodium Citrate (Blue).		14
Factor Assays (10)	F10	2 x 2.7ml Sodium Citrate (Blue).		14
Factor Assays (11)	F11	2 x 2.7ml Sodium Citrate (Blue).		14
Factor Assays (12)	F12	2 x 2.7ml Sodium Citrate (Blue).		14
Factor Assays (5)	F5	2 x 2.7ml Sodium Citrate (Blue).		14
Factor Assays: Factor Anti-Xa (Heparin)	F10	2 x 2.7ml Sodium Citrate (Blue).		14
Fine Needle Biopsy	FNA	Fine Needle Slides and cytorich tube	Please provide BruHIMS no. and arrange with laboratory for sample collection (ext. 2436)	10
FISH SYT (18q11.2) Gene Rearrangement FISH	SYTFISH	Tissue sample in paraffin block		21
Flavivirus PCR	FLAVI	1 x 8ml Plain (Gel) OR 2ml CSF samples		14-21
Flow Cytogenetics Immunophenotyping	8LST	1 x 4ml EDTA	1/ Bone Marrow samples only 2/ Test only can be send on Monday, Tuesday and Thursday. 3/ Cut off time to laboratory by 0900hrs. 4/ Specific form required Please arrange for collection with laboratory (ext. 2408)	28

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FLOW EXTENDED PANEL 1	FLOW1	1 x 4ml EDTA	1/ Bone Marrow samples only 2/ Test only can be send on Monday, Tuesday and Thursday. 3/ Cut off time to laboratory by 0900hrs. 4/ Specific form required Please arrange for collection with laboratory (ext. 2408)	28
FLOW EXTENDED PANEL 2/ 3	FLOW23	1 x 4ml EDTA	1/ Bone Marrow samples only 2/ Test only can be send on Monday, Tuesday and Thursday. 3/ Cut off time to laboratory by 0900hrs. 4/ Specific form required Please arrange for collection with laboratory (ext. 2408)	28
FM-LIQUID	FM1L	2 x 8ml cell free streck tube	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required Please request for tube from laboratory (ext. 2127)	28
FM-PDL1	FM1PD	2 x 8ml cell free streck tube	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required Please request for tube from laboratory (ext. 2127)	28
Foundation One CDX (<i>FM-CDX</i>)	FM1CD	Tissue sample in paraffin block	Specific Form required	28
Foundation One Heme Test (<i>FM-HEME</i>)	FM1HE	Tissue sample in paraffin block	Specific Form required	28
Free Androgen Index	FRAI	1 x 8ml Plain (Gel)		7

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Free Light Chains (Kappa + Lambda)	SFLC	1 x 8ml Plain (Gel)		14
Frozen Section	FZ	Tissue sample in paraffin block	Please provide BruHIMS no.	10
GAD Ab (Glutamic Acid Decarboxylase Antibodies)	GAD	1 x 8ml Plain (Gel)		14
GAD Ab CSF	GD65C	2ml CSF samples		14
Galactitol Quantitative	GATOL	20ml random urine		14
Galactomannan Antigen (Aspergillus)	GALM	1 x 8ml Plain (Gel)		14
Ganglionic Acetylcholine Receptor Ab	GARA	1 x 8ml Plain (Gel)		14
Ganglioside Ab Set 2 IgG and IgM (Asialo GM1, GM1, GM2, GD1a, GD1b, GQ1b)	GM2B	1 x 8ml Plain (Gel)		21
Gangliosides Profile IgG and IgM (GM1,GM2,GM3,GD1a, GD1b,GT1b,IQ1b)	GANG	4ml CSF samples		14
Gliadin Peptides IgA	GLA	1 x 8ml Plain (Gel)		10
Glomerular Basement Membrane Ab	LO54	1 x 8ml Plain (Gel)		14
Glucagon	GCG	2 x 4ml EDTA	Patient should fast for 8 hrs	14
Glycine Receptor Antibody	GLY	1 x 8ml Plain (Gel)		21
Glycine Receptor Alpha 1 IgG (Blood)	GLYCS	1 x 8ml Plain (Gel)		14
Glycine Receptor Alpha 1 IgG (Non-Blood) -	GLYCC	2ml CSF samples		14
Gonadotropin Releasing Hormone	GRH	1 x 8ml Plain (Gel)		42
Growth Hormone	GH	1 x 8ml Plain (Gel)		14
Hb Analysis/ Hemoglobin Electrophoresis	HBE	1 x 4ml EDTA and 1 x 8ml Plain (Gel)		14
HCG (Qualitative) Cancer marker CSF	CSFHCG	2ml CSF samples	12 hours before sample collection: patient should not take multivitamins or dietary supplements (e.g. hair, skin and nail supplements) containing biotin (Vitamin B7)	14
Heavy Metal Screen - Blood	HMS	2 x 6ml K2 EDTA (royal blue)	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs.	14

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Helicobacter Antibody IgG (Quantitative)	HEL	1 x 8ml Plain (Gel)		14
Helicobacter Urea Breath Test	HEB	Special Collection Kit	Please request for kit from laboratory (ext. 2127)	14
Hemosiderin	UHE	20ml random urine		21
Heparin Induced Thrombocytopenia Ab	HIT	1 x 8ml Plain (Gel) and 4 x 2.7ml Sodium Citrate (Blue)		14
Hepatitis B Core IgM	HBC1	1 x 8ml Plain (Gel)	Please provide BruHIMS no.	7
Hepatitis B e Antibody	HBV	1 x 8ml Plain (Gel)	Please provide BruHIMS no.	7
Hepatitis B e Antigen	HBX	1 x 8ml Plain (Gel)	Please provide BruHIMS no.	7
Hepatitis C RNA (Quantitative)	HCQ1	2 x 4ml EDTA	Please provide BruHIMS no.	21
Hepatitis D Total Antibody	HDV	1 x 8ml Plain (Gel)		14
Hepatitis E Antibodies IgG	HEG	1 x 8ml Plain (Gel)		14
Hepatitis E Antibodies IgM	HEM	1 x 8ml Plain (Gel)		14
HER-2 Gene Amplication (FISH)	HER2P	Tissue sample in paraffin block	Specific Form required	21
Hereditary Cancer Diagnostic	PCDI	Special request form and saliva kit OR 2 x 4ml EDTA blood	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required	21
Herpes Simplex Type 1 (IgG)	HG1	1 x 8ml Plain (Gel)		14
Herpes Simplex Type 1 and 2 (IgM)	HM12	1 x 8ml Plain (Gel)		14
Herpes Simplex Type 2 (IgG)	HG2	1 x 8ml Plain (Gel)		14
Herpes Simplex Virus by PCR	HSB	2 x 4ml EDTA OR Swab (Genital or Vesicular Swab only)		14
Herpes Simplex Virus by PCR (CSF)	HSC	2ml CSF samples		14
Histochemical Stain	HCMX1	Tissue sample in paraffin block		14
Histology	HIR2	Tissue sample in formalin	Please provide BruHIMS no.	10

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HLA 11 Loci by NGS	HLOCI	2 x 10ml ACD (lemon) OR 5 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required	14
HLA ABC Typing (PCR Low Resolution)	HLABC	2 x 10ml ACD (lemon) OR 5 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required	14
HLA B*15:02 Screening (PCR)	HLB	2 x 10ml ACD (lemon) OR 5 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required	14
HLA B27 Typing (CDC)	HLAB27	2 x 10ml ACD (lemon) OR 5 x 3ml Lithium Heparin	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required	14
HLA DR Typing LR (PCR Low Resolution with DQB)	HLATLR	2 x 10ml ACD (lemon) OR 5 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required	14
HMGCR Ab	HMGCR	1 x 8ml Plain (Gel)		21
Homocysteine	HOC	1 x 8ml Plain (Gel) OR 1 x 4ml EDTA		10
Homologous Recombination Deficiency	HRD	Tissue sample in paraffin block	Specific Form required	15-28
House Dust Mix IgE	HX2P	1 x 8ml Plain (Gel)		10
HPE Second Opinion / Consultation	SOC	Tissue sample in paraffin block	Specific Form required	21
HPV PCR	HPVPCR	Cervical broom & SurePath vial		14

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HRR Blood	HRRB	2 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required	28
HRR Tissue	HRRT	Tissue sample in paraffin block	Specific Form required	28
Human Herpes 6 (HHV6) PCR	HHV6	1 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs.	14
Human Herpes 7 (HHV7) PCR	HHV7	1 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs.	14
IDH 1/2 Mutation	IDHM	Tissue sample in paraffin block	Specific Form required	28
IgA - Immunoglobulin A	IGA	1 x 8ml Plain (Gel)		10
IgE - Immunoglobulin E	IGE	1 x 8ml Plain (Gel)		10
IgG Immunoglobulin G	IGGQ	1 x 8ml Plain (Gel)		10
IgG Immunoglobulin G - CSF	IGGCSF	2ml CSF samples		14
Igh + IgK B-cell clonality assay	CEB	Tissue sample in paraffin block	Specific Form required	21
IgM Immunoglobulin M	IGM	1 x 8ml Plain (Gel)		14
Immunofixation Electrophoresis (IFE) - Serum	IFES	1 x 8ml Plain (Gel)		14
Immunofixation Electrophoresis (IFE) - Urine	UIFE	24hr urine collection	Collection instruction: 1/Collect urine for 24 hours (no preservatives) 2/Refrigerate specimen during 24 hour collection 4/Collection volume and duration are required	21
Immunoglobulin (IgG, IgM and IgA)	EPP	1 x 8ml Plain (Gel)		10
Immunoglobulin G Subclass IgG4 serum	IGGS4	1 x 8ml Plain (Gel)		14
Infectious Mononucleosis (Monospot)	MON	1 x 8ml Plain (Gel)		10
In-Situ Hybridization for Tissue Block	ISHY	Tissue sample in paraffin block	Specific Form required	28
Insulin like Growth Factor 1 (IGF1)	IGF	1 x 8ml Plain (Gel)		14

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Interferon Gamma Antibody	GIA	1 x 8ml Plain (Gel)		28
Intrinsic Factor Antibody	IFA	1 x 8ml Plain (Gel)		10
Invitae Other Diagnostic Panel (IN)	ODP	2 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required	28
Invitae Personal Cancer Diagnostic	PCDI	2 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required	28
JAK 2 Mutation	JAK	2 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required	28
JAK 2 Mutation exon 12/13 Mutation	J1213	2 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required	28
Japanese Encephalitis Antibodies - IgG/ IgM	JEGM	1 x 8ml Plain (Gel)		14
Japanese Encephalitis IgM	JEM	1 x 8ml Plain (Gel)	Please provide BruHIMS no.	5
John Cunningham Virus (JCV) PCR	JCVF	2 x 4ml EDTA OR 1ml CSF samples	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required	21
Keppra Level (Levetiracetam)	KEP	1 x 8ml Plain (Gel)		21

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KRAS & NRAS Mutation (CODONS 12, 13, 59, 61, 117, 146)	KNRAS	2 x 8ml cell free streck tube	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required Please arrange for collection with laboratory (ext. 2127)	28
KRAS mutation detection	KNRAS	Tissue sample in paraffin block	Specific Form required	28
Lamotrigine (Lamictal)	LAMO	1 x 8ml Plain (Gel)		14
Lead Red Cell	BPB	1 x 6ml K2 EDTA (ROYAL BLUE)		14
Legionella Antibodies (Total Ab)	LEG	1 x 8ml Plain (Gel)		14
Leptospirosis (IgG)	LEPG	1 x 8ml Plain (Gel)		10
Leptospirosis (IgM)	LEPM	1 x 8ml Plain (Gel)		10
Leptospirosis PCR	LEPCR	2 x 4ml EDTA OR 20ml First void morning urine		10
Lia IgG	LIA	2ml CSF samples		10
Lipase	LSE	1 x 8ml Plain (Gel)		14
Liquid Based Cytology (Thin Prep) + HPV DNA Profile	TPP & HPVPCR	Cervical broom & SurePath vial		11
Lithium	LIT	1 x 8ml Plain (Gel)	Sample Time: 12 hours post dose. Please state time & date of last dose & time / date of collection	14
Liver Autoimmune Antibodies	LAA	1 x 8ml Plain (Gel)		14
Lp (a) (Lipoprotein a)	LPA	1 x 8ml Plain (Gel)		14
Lung Cancer Panel (EGFR, ALK, ROS1, BRAF)	AZSLCP	Tissue sample in paraffin block	Specific Form required	28
Lupus Anti Coagulant Factor	LAS	2 x 2.7ml Sodium Citrate (Blue).		10
Lyme Disease (Borrelia Burgdorferi) IgG IgM	BORGM	1 x 8ml Plain (Gel)		14
Lymphoma Second Opinion	LYSOC	Tissue sample in paraffin block	Specific Form required	21
M Band Quantitative (Blood)	SMBD	1 x 8ml Plain (Red)	Please request for tube from laboratory (ext. 2127)	28
Magnesium Red Cell	MGB	1 x 6ml of K2 EDTA (ROYAL BLUE)		14

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MDM2 FISH	MDM2	Tissue sample in paraffin block	Specific Form required	28
Measles IgG	MEG	1 x 8ml Plain (Gel)		14
Measles IgG	MEG1	1 x 8ml Plain (Gel)	Please provide BruHIMS no.	7
Measles IgG & IgM CSF	MEGCSF + MEMCSF	2ml CSF samples		10
Measles IgM	MEM	1 x 8ml Plain (Gel)		14
Measles IgM	MEM	1 x 8ml Plain (Gel)	Please provide BruHIMS no.	5
Melioidosis Serology IgG	MELG	1 x 8ml Plain (Gel)		14
Melioidosis Serology IgG IgM	MELM & MELG	1 x 8ml Plain (Gel)		14
Melioidosis Serology IgM	MELM	1 x 8ml Plain (Gel)		14
Mercury (Hg) Hair	HGH	Hair		14
Mercury (Hg) Red Cell	MER	1 x 6ml of K2 EDTA (ROYAL BLUE)		14
Mercury (Hg) Urine	UME	24hr urine collection OR Spot urine		10
Met Amplification	METPP	Tissue sample in paraffin block	Specific Form required	28
Metanephrine 24h Urine	MNP	24hr urine collection	Please send 24 hour urine container to laboratory for addition of preservative	21
Metanephrines plasma	META	2 x 4ml EDTA		14
MGMT Methylation (Exon 1)	MGMTM	Tissue sample in paraffin block	Specific Form required	28
Microfilaria Antibodies	MFA	1 x 8ml Plain (Gel)		10
Microsatellite Instability Analysis	MSIPCR	Tissue sample in paraffin block	Specific Form required	28
Micro-Satellite Instability Analysis (MSI)/ Mismatch Repair (MMR) (MSH2, MSH6, MLH1, PMS2)	MIAP	Tissue sample in paraffin block	Specific Form required	28
Mitochondrial Antibodies	AMA	1 x 8ml Plain (Gel)		14
Mould Mix 2 IgE	MX2P	1 x 8ml Plain (Gel)		10
Mullerian Hormone Antibody (AMH)	AMH	1 x 8ml Plain (Gel)		9
Multiple Myeloma follow-up Studies	MMF	1 x 8ml Plain (Gel) OR 20ml random urine		10

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Mumps IgG	MUMG1	1 x 8ml Plain (Gel)	Please provide BruHIMS no.	7
Mumps Serology IgG	MUMG	1 x 8ml Plain (Gel)		10
Mumps Serology IgM	MEMCSF	1 x 8ml Plain (Gel)		14
MYC Gene Rearrangement (FISH) for Lymphoma	MYCF	Tissue sample in paraffin block		21
Mycoplasma pneumonia IgM	MYCO	1 x 8ml Plain (Gel)		14
Mycoplasma pneumonia Total Ab	MYCOAB	1 x 8ml Plain (Gel)		14
Myelin Associated Glycoprotein IgM	MYE	1 x 8ml Plain (Gel)		14
Myeloma Protein Study, Urine	MYEU	20ml random urine OR 24hr urine collection		14
Myeloma Screening Panel, Blood	MYES	1 x 8ml Plain (Gel)		14
Myeloperoxidase Ab	MPO	1 x 8ml Plain (Gel)		14
Myoglobin -blood	MYO	1 x 8ml Plain (Gel)		14
Myoglobin -urine	UMYO	20ml random urine		14
Myopathy Profile	MP	1 x 8ml Plain (Gel)		10
Neural Antigen IFT IgG	NAIFT	1 x 8ml Plain (Gel) or 4ml CSF samples		14
Neuromyelitis Optica Autoimmune Profile	NMO & MOG	1 x 8ml Plain (Gel)		10
Neuron Specific Enolase	NSE	1 x 8ml Plain (Gel)		14
Neuronal Antibody Extended Panel (12 Ab) Paraneoplastic Neurological Syndrome: Panel Anti-Tr (DNER), Anti-GAD65, Anti-Zic4, Anti- Titin, Anti-SOX1, AntiRecoverin, Anti- Amphiphysin, Anti-Ma2/Ta, Anti-Yo, Anti-Ri, Anti-Hu, Anti-CV2	NAEP	1 x 8ml Plain (Gel) OR 2ml CSF (bijou bottle)		21
Newborn Error Babysafe Screen (Quantitative)	IEM	Guthrie Card	Specific Form required	21
NGS TMB	NGSTMB	Tissue sample in paraffin block		28

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NICE BASIC - NON- INVASIVE CHROMOSOME EXAMINATION BASIC	NICEB	1 x 8ml cell free streck tube	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required Please request kit from laboratory (ext. 2127)	10
NICE EXTENDED - NON-INVASIVE CHROMOSOME EXAMINATION EXTENDED	NICEX	1 x 8ml cell free streck tube	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required Please request kit from laboratory (ext. 2127)	10
NICE PLUS -NON- INVASIVE CHROMOSOME EXAMINATION PLUS	NICEP	1 x 8ml cell free streck tube	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required Please request kit from laboratory (ext. 2127)	10
Nipah Virus Antibody	NIPAH	1 x 8ml Plain (Gel)		14
NIPS Trisomy (Singleton/Twins)	NIPSS	20ml Amniotic fluid in sterile container (Falcon tube) or 10ml Sodium Heparin (GREEN) for blood chromosome.		14
NMDA Receptor Antibody	NMDA	1 x 8ml Plain (Gel)		14
NMO Antibody (Aquaporin 4 Ab)	NMO	1 x 8ml Plain (Gel)		10
Oligoclonal Bands	OLIGO	1 x 8ml Plain (Gel) OR 2ml CSF samples		21
Oncotype Dx	ONCODX	Tissue sample in paraffin block		28

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Opiates (Incl Morphine & Codeine) Confirmation	GCMS	20ml random urine		14
Paracetamol	PCM	1 x 8ml Plain (Gel)		14
Paraneoplastic Auto-Immune Profile	PAR	1 x 8ml Plain (Gel)		10
Parietal Cell Antibody (APCA)	AEA2	1 x 8ml Plain (Gel)		14
Parvovirus B19 Serology	VBP	1 x 8ml Plain (Gel)		14
PDGFB (22q13), Dermatofibrosarcoma Protuberans/Giant Cell Fibroblastoma	PDGFB	Tissue sample in paraffin block		28
PDGFRA (Platelet Derived Growth,Factor Receptor A Exon 12,14,18 Mutation) - Singapore	PDGFRAE	CentoCard		28
PD-L1	PDL1P	Tissue sample in paraffin block	Specific Form required	28
PD-L1 SP142	PDL142	Tissue sample in paraffin block	Specific Form required	28
PDL263	PDL263	Tissue sample in paraffin block	Specific Form required	28
Pet Dander Mix IgE	EX2p	1 x 8ml Plain (Gel)		10
Phadiatop Inhalant IgE	PHAD	1 x 8ml Plain (Gel)		10
Phospholipid Antibody Screen	CPILAS	1 x 8ml Plain (Gel) and 2 x 2.7ml Sodium Citrate (Blue)		14
PIK3CA Liquid Biopsy	LBPIK3CA	2 x cell free DNA streck tube	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs. 3/ Specific form required	21
PIK3CA Mutation	PIK3CAM	Tissue sample in paraffin block	Specific Form required	21
Pineapple IgE Serum	PNAP	1 x 8ml Plain (Gel)		14
Plasma Free Haemoglobin	PHB	6ml LITHIUM HEPARIN (green)		10

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PNH Full Panel	PNHP	1 x 4ml EDTA	1/ Bone Marrow samples only 2/ Test only can be send on Monday, Tuesday and Thursday. 3/ Cut off time to laboratory by 0900hrs. 4/ Specific form required Please arrange for collection with laboratory (ext. 2408)	21
Porphyrin Profile Urine	UPSG	20ml random urine	1/ Wrap in Foil 2/ Provide clinical history	14
Proinsulin	PINS	1 x 4ml EDTA	1/Adult: 8hrs fasting 2/ Infant: <2yrs old-6 hrs fasting	14
Prostate Specific Antigen (Free and Total)	FCA	1 x 8ml Plain (Gel)		14
Protein 14-3-3 (CSF)	P1433	2 x 2ml CSF samples		28
Protein Electrophoresis	PES	1 x 8ml Plain (Gel)		21
Protein Electrophoresis Urine	OPE	20ml random urine		10
Protein S	PTS	2 x 2.7ml Sodium Citrate (Blue).		14
Proteinase 3 Antibodies	PR3	1 x 8ml Plain (Gel)		14
Prothrombin G20210A Mutation	PTG	2 x 4ml EDTA		10
Q (Fever) Coxiella IgG and IgM	QFA	1 x 8ml Plain (Gel)		18
Raspberry IgE Serum	RASP	1 x 8ml Plain (Gel)		10
Renin (Active)	REN	2 x 4ml EDTA		14
Rickettsia (Typhus Antibodies) serology	RICK	1 x 8ml Plain (Gel)		14
ROS1 FISH	ROS1FH	Tissue sample in paraffin block	Specific Form required	21
Rubella IgG	RUBG	1 x 8ml Plain (Gel)	Please provide BruHIMS no.	7
Rubella IgM	RUM	1 x 8ml Plain (Gel)		14
Seafood Mix IgE	FX2p	1 x 8ml Plain (Gel)		10
Second Opinion	HM11	Tissue sample in paraffin block	Specific Form required	28
Serotonin (5 Hydroxy Tryptamin -5HT) -	SEROT	1 x 8ml Plain (Gel)		14
Sex Hormone Binding Globulin (SHBG)	SHB	1 x 8ml Plain (Gel)	Please provide clinical details	14
Sickling Test	SIC	1 x 4ml EDTA		14

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Single Allergy Test - Barley	SA1	1 x 8ml Plain (Gel)	To indicate in remarks: Barley	10
Single Allergy Test - Beef	SA1	1 x 8ml Plain (Gel)	To indicate in remarks: Beef	10
Single Allergy Test - Carrot	SACR	1 x 8ml Plain (Gel)		10
Single Allergy Test - Cocoa	SACO	1 x 8ml Plain (Gel)		10
Single Allergy Test - Cow Milk	SA1	1 x 8ml Plain (Gel)	To indicate in remarks: Cow milk	10
Single Allergy Test - Egg White	SA1	1 x 8ml Plain (Gel)	To indicate in remarks: Egg White	10
Single Allergy Test - Egg Yolk	SA1	1 x 8ml Plain (Gel)	To indicate in remarks: Egg Yolk	10
Single Allergy Test - Gluten	SA5	1 x 8ml Plain (Gel)		10
Single Allergy Test - Maize	SA1	1 x 8ml Plain (Gel)	To indicate in remarks: Maize	10
Single Allergy Test - Onion	SA2	1 x 8ml Plain (Gel)		10
Single Allergy Test - Peanut	SA1	1 x 8ml Plain (Gel)	To indicate in remarks: Peanut	10
Single Allergy Test - Rice	SA1	1 x 8ml Plain (Gel)	To indicate in remarks: Rice	10
Single Allergy Test - Seeds	SA1	1 x 8ml Plain (Gel)	To indicate in remarks: Seeds	10
Single Allergy Test - Shrimp	SA1	1 x 8ml Plain (Gel)	To indicate in remarks: Shrimp	10
Single Allergy Test - Tomato	SA1	1 x 8ml Plain (Gel)	To indicate in remarks: Tomato	10
Single Allergy Test - White Potato	SAPO	1 x 8ml Plain (Gel)		10
Single Allergy Test - Yeast	SA1	1 x 8ml Plain (Gel)	To indicate in remarks: Yeast	10
Single Allergy Test 1- sesame seed	SA1	1 x 8ml Plain (Gel)	To indicate in remarks: Sesame Seed	10
Single Allergy Test -Cheddar Cheese	SA1	1 x 8ml Plain (Gel)	To indicate in remarks: Cheddar Cheese	10
SLCP Panel (ALKFH, ROS1, AZEGFR,KRAS,BRAF, PDL1)	AZSLCP	Tissue sample in paraffin block	Specific Form required	28
Smooth Muscle Antibody	ASM	1 x 8ml Plain (Gel)		21
S-PhenylmercapturicAcid (Benzene Marker)	SPMA	20ml random urine		21
Stone Analysis	STO	Stone in Sterile Container		14
Strawberry IgE Serum	STBY	1 x 8ml Plain (Gel)		14
Striated Muscle Antibody (Myasthenia Gravis) -	SMAMG	1 x 8ml Plain (Gel)		14
Strongyloides Antibody	SGA	1 x 8ml Plain (Gel)		14
Surepath Liquid Based Cytology	TPP	Cervical broom & SurePath vial		11

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T CHRONIC LYMPHOPROFERATIVE PANEL	8TCLP	1 x 4ml EDTA	Bone Marrow samples only	21
TAU Protein	TAU	2 x 2ml CSF samples		28
TCR Clonality Test	TCC	Tissue sample in paraffin block	Specific Form required	21
Testosterone (Free)	TESTF	1 x 8ml Plain (Gel)		10
Tetanus Toxoid Ab	TTA	1 x 8ml Plain (Gel)		14
Tetraplex PCR	TETPCR	Dry swab or 2ml CSF sample		14
Thalassaemia Studies	THS	1 x 4ml EDTA and 1 x 8ml Plain (Gel)		14
Thrombophilia Screen	THR	2 x 2.7ml Sodium Citrate (Blue).		16
Thyroid Stimulating Immunoglobulin	TSI	1 x 8ml Plain (Gel)	Preferred fasting	14
Thyroid Thyroxine (Total T4)	T4	1 x 8ml Plain (Gel)		14
Thyroid TRIIODOTHYRONINE (Total T3)	T3	1 x 8ml Plain (Gel)		14
Tissue Transglutaminase IgA	TRAN	1 x 8ml Plain (Gel)		14
Tissue Transglutaminase IgA & IgG	TRANAB	2 x 8ml Plain (Gel)		14
Titin Antibody	T11	1 x 8ml Plain (Gel) OR 4ml CSF sample		28
Toxoplasma IgG & IgM	TXG & TXM	2 x 8ml Plain (Gel)		14
Toxoplasma IgG and IgM, CSF	TXPC	2ml CSF samples		21
Tryptase	TRYP	1 x 8ml Plain (Gel)		21
Urine Catecholamines 24hrs	UCAT	24hr urine collection	Please provide list of medication that patient is currently taking. Please send 24 hour urine container to laboratory for addition of preservatives	21
Urine Citrate (24 Hours)	UCIT	24hr urine collection		10
Urine Cytology	UCYT	20ml random urine		10
Urine Legionella Antigen	LEGU	20ml random urine	Please keep urine refrigerated if not sent to laboratory immediately after collection	10

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Urine Porphyrin Profile	UPSG	20ml random urine	1/ Wrap in Foil 2/ Provide clinical history	14
Vanillylmandelic Acid (24 hour urine)	VMA	24hr urine collection	Please send 24 hour urine container to laboratory for addition of preservatives	14
Varicella Zoster IgG	VZG	1 x 8ml Plain (Gel)	Please provide BruHIMS no.	7
Varicella Zoster IgM	VZM	1 x 8ml Plain (Gel)	Please provide BruHIMS no.	7
Varicella Zoster Virus PCR	VZP	Dry swab OR 2ml CSF OR 1 x 4ml EDTA	1/ Test only can be send on Monday, Tuesday and Thursday. 2/ Cut off time to laboratory by 0900hrs.	10
Vascular EndothelialGrowth Factor	VEGF	2 x 4ml EDTA		14
Vasoactive Intestinal Peptide	VIP	2 x 4ml EDTA	1/Fasting required for 8 hours 2/ NOT for patients who have recently received radioactive material	17
Vitamin B1 (Thiamine)	VB1	2 x 4ml EDTA	1/ EDTA wrapped in foil 2/Fasting 12 hours required; infants should have specimen collected before next feeding, water can be taken as needed 3/ For 12 hours before specimen collection, patient should not take vitamin supplements	14
Vitamin B2 (Riboflavin)	VB2	6ml Lithium Heparin (green)	1/ Lithium Heparin wrapped in foil 2/Fasting 12 hours required; infants should have specimen collected before next feeding	14
Vitamin B6 (Pyridoxine)	VB6	6ml Lithium Heparin (green)	1/Lithium Heparin wrapped in foil 2/ Fasting 12 hours required; infants should have specimen collected before next feeding 3/For 24 hours before specimen collection, patient should not take	14

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			multivitamins or vitamin supplements	
Vitamin D (1,25 Dihydroxy)	OHDX	1 x 8ml Plain (Gel)		14
Vitamin D3 (with Vitamin D2)	OHD3	1 x 8ml Plain (Gel)		15
Vitamin E (Tocopherol)	VTE	1 x 8ml Plain (Gel) OR 2 x 4ml Lithium Heparin (Green)	1/ All blood tubes have to be wrapped in foil 2/ For infants, specimen should be collected before next feeding	14
Voltage Gated Calcium Channel Ab	VGCC	1 x 8ml Plain (Gel)		17
Voltage Gated Potassium Channel Ab	VGKC	1 x 8ml Plain (Gel)		17
Von Willebrand Factor Level	AWF	2 x 2.7ml Sodium Citrate (Blue).		14
West Nile Virus Antibody IgG/IgM	WNS	1 x 8ml Plain (Gel)		14
Widal/Weil-Felix Test	WFT	1 x 8ml Plain (Gel)		14
Y Chromosome Microdeletion	YCHD	1 x 4ml EDTA		28
Zinc	SZN	1 x 8ml Plain (Gel-YELLOW) OR 1 x 6ml K2 EDTA (Blue)		14

ANNEX D. TEST PACKAGES

JPMC PACKAGES

**Packages are subject to change. Please call OPD for availability of test packages.*

JPMC PREMIER HEALTH SCREENING PACKAGE, Code: JHSPP
 EMPLOYEE HEALTH PACKAGE, Code: LEHP
 JPMC EXCLUSIVE MALE HEALTH SCREENING PACKAGE, Code: JHSPEM
 JPMC EXCLUSIVE FEMALE HEALTH SCREENING PACKAGE, Code: JHSPEF
 GENERAL TEST 1 PACKAGE, Code: ZGT1
 GENERAL TEST 5 PACKAGE, Code: ZGT5
 GENERAL TEST 7 PACKAGE, Code: ZGT7
 GENERAL TEST FOR PAEDIATRICS, Code: ZGTP
 ANTENATAL PACKAGE, Code: ZANJ [OBGYN CLINIC]

JPMC PREMIER HEALTH SCREENING PACKAGE, Code: JHSPP

Full Blood Examination (including ESR)	1 X PURPLE TUBE	WHOLE BLOOD
Renal Function Test	2 X YELLOW TUBES	SERUM
Liver Function Test		
Lipid Profile		
Hepatitis B Screen (HBsAg + HBsAb)		
Hepatitis C Total Antibody		
Fasting or Random Glucose	1 x GREY TUBE	PLASMA
Urine FEME	STERILE CONTAINER	RANDOM URINE

EMPLOYEE HEALTH PACKAGE, Code: LEHP

Malaria Screen	1 X PURPLE TUBE	WHOLE BLOOD
Hepatitis B Screen (HBsAg & HBsAb)	1 X YELLOW TUBE	SERUM
HIV 1/2 Ag/Ab		

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JPMC EXCLUSIVE MALE HEALTH SCREENING PACKAGE, Code: JHSPeM

Full Blood Examination (including ESR)	1 X PURPLE TUBE	WHOLE BLOOD
Renal Function Test	2 X YELLOW TUBES	SERUM
Liver Function Test		
Lipid Profile		
Alpha-Feto Protein		
Hepatitis B Screen (HBsAg + HBsAb)		
Hepatitis C Total Antibody		
Cancer Marker 19.9		
Carcinoembryonic Antigen		
Total Prostate Specific Antigen		
Epstein Barr Virus EA IgA (NPC Marker) <i>Send out</i>		
Fasting Glucose	1 X GREY TUBE	PLASMA
Urine FEME	STERILE CONTAINER	RANDOM URINE
Faecal Occult Blood	STERILE CONTAINER	STOOL

JPMC EXCLUSIVE FEMALE HEALTH SCREENING PACKAGE, Code: JHSPEF

Full Blood Examination (including ESR)	1 X PURPLE TUBE	WHOLE BLOOD
Renal Function Test	2 X YELLOW TUBES	SERUM
Liver Function Test		
Lipid Profile		
Alpha-Feto Protein		
Hepatitis B Screen (HBsAg + HBsAb)		
Hepatitis C Total Antibody		
Cancer Marker 19.9		
Cancer Marker 125		
Cancer Marker 15.3		
Carcinoembryonic Antigen		
Fasting Glucose	1 X GREY TUBE	PLASMA
Urine FEME	STERILE CONTAINER	RANDOM URINE
Faecal Occult Blood	STERILE CONTAINER	STOOL
SurePath Pap Test <i>Send out</i>		

Refer to changes highlighted yellow

GENERAL TEST 1 PACKAGE, Code: ZGT1

Full Blood Examination (including ESR)	1 X PURPLE TUBE	WHOLE BLOOD
Renal Function Test	1 X YELLOW TUBE	SERUM
Liver Function Test		
Lipid Profile		
Fasting Glucose	1 x GREY TUBE	PLASMA
Urine FEME	STERILE CONTAINER	RANDOM URINE

GENERAL TEST 5 PACKAGE, Code: ZGT5

Full Blood Count (including ESR)	2 X PURPLE TUBES	WHOLE BLOOD
Blood Group		
Renal Function Test	2 X YELLOW TUBES	SERUM
Liver Function Test		
Lipid Profile		
Hepatitis B Screen (HBsAg + HBsAb)		
Rheumatoid Factor		
Hepatitis A Antibodies (IgM + IgG)		
Free Thyroxine (FT4)		
Alpha-Feto Protein		
Carcinoembryonic Antigen		
Fasting Glucose	1 X GREY TUBE	PLASMA
Urine FEME	STERILE CONTAINER	RANDOM URINE

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GENERAL TEST 7 PACKAGE, Code: ZGT7

Full Blood Count (including ESR)	2 X PURPLE TUBES	WHOLE BLOOD
Blood Group		
Renal Function Test	2 X YELLOW TUBES	SERUM
Liver Function Test		
Lipid Profile		
Hepatitis B Screen (HBsAg + HBsAb)		
Rheumatoid Factor		
Hepatitis A Antibodies (IgM + IgG)		
Free Thyroxine (FT4)		
Alpha-Feto Protein		
Total Prostate Specific Antigen		
Fasting Glucose	1 X GREY TUBE	PLASMA
Urine FEME	STERILE CONTAINER	RANDOM URINE

GENERAL TEST FOR PAEDIATRICS, Code: ZGTP

Full Blood Count (with Blood Film)	1 X PURPLE TUBE (or 1 X PURPLE MICROTAINER)	WHOLE BLOOD
Renal Function Test	1 X YELLOW TUBE (or 2 X GREEN MICROTAINERS)	SERUM/ PLASMA
Liver Function Test		
Calcium		
Phosphate		
C-Reactive Protein		
Fasting Glucose		

ANTENATAL PACKAGE, Code: ZANJ [OBGYN CLINIC]

Full Blood Count	2 X PURPLE TUBES	WHOLE BLOOD
Blood Group		
Antibody Screen (Indirect Coombs Test)		
Hepatitis B Screen (HBsAg + HBsAb)	1 x YELLOW TUBE	SERUM
Rubella IgG Antibodies		
Random Glucose	1 X GREY TUBE	PLASMA

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BNSRC PACKAGES

**Only available for BNSRC Clinic and Wards*

BNSRC PROFILE TEST 1, Code: NSRC1

BNSRC PROFILE TEST 2, Code: NSRC2

BNSRC PROFILE TEST 3, Code: NSRC3

BNSRC PROFILE TEST 1, Code: NSRC1

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Urea	1 X YELLOW TUBE	SERUM
Electrolytes		
Creatinine		
Calcium		
Total Protein		
Gamma-Glutamyl Transferase		
Alanine Aminotransferase		
Aspartate Aminotransferase		
Creatine Kinase		
C-Reactive Protein		
Lactate Dehydrogenase		
Thyroid Stimulating Hormone		
Troponin I		
Coagulation Profile	1 X LIGHT BLUE TUBE	PLASMA
Glucose Random	1 X GREY	PLASMA

BNSRC PROFILE TEST 2, Code: NSRC2

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Electrolytes	1 X YELLOW TUBE	SERUM
C-Reactive Protein		
Creatine Kinase		
Creatinine		
Gamma-Glutamyl Transferase		
Alanine Aminotransferase		
Aspartate Aminotransferase		

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BNSRC PROFILE TEST 3, Code: NSRC3

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Urea	1 X YELLOW TUBE	SERUM
Electrolytes		
C-Reactive Protein		
Creatinine		
Creatinine Kinase		
Gamma-Glutamyl Transferase		
Alanine Amino Transferase		
Aspartate Aminotransferase		
Calcium		
Albumin		
Coagulation Profile	1 X LIGHT BLUE TUBE	PLASMA

TBCC PACKAGES

**Only available for TBCC Clinic and Wards*

BREAST CANCER PACKAGE, Code: BRCP
 COLORECTAL & GIT CANCER PACKAGE, Code: COCP
 GERM CELL TUMOUR PACKAGE, Code: GRCP
 GYNAECOLOGICAL CANCER PACKAGE, Code: GYCP
 HEAD & NECK CANCER PACKAGE, Code: HNCP
 LIVER CANCER PACKAGE, Code: LICP
 LUNG CANCER PACKAGE, Code: LUCP
 LYMPHOMA CANCER PACKAGE, Code: LYMCP
 NCC PACKAGE, Code: BCCP
 NCC PRE-TREATMENT HEPATITIS SCREEN, Code: HB6
 NPC PRE-TREATMENT PACKAGE, Code: NPC1
 NPC DURING CHEMOTHERAPY PACKAGE, Code: NPC2
 PANCREAS AND BILIARY CANCER PACKAGE, Code: PACP
 PROSTATE CANCER PACKAGE, Code: PRCP
 THYROID PRE-TREATMENT, Code: TPTP1
 THYROID DURING CHEMOTHERAPY, Code: TPTP2

BREAST CANCER PACKAGE, Code: BRCP

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Electrolytes, Creatinine & Urea	1 X YELLOW TUBE	SERUM
Liver Function Test		
Cancer Marker CA 15-3		
Glucose Random	1 X GREY TUBE	PLASMA

COLORECTAL & GIT CANCER PACKAGE, Code: COCP

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Electrolytes, Creatinine & Urea	1 X YELLOW TUBE	SERUM
Liver Function Test		
Carcinoembryonic Antigen		
Glucose Random	1 X GREY TUBE	PLASMA

GERM CELL TUMOUR PACKAGE, Code: GRCP

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Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Electrolytes, Creatinine & Urea	1 X YELLOW TUBE	SERUM
Liver Function Test		
Alpha-Feto Protein		
Beta Human Chronic Gonadotrophin		
Lactate Dehydrogenase		
Glucose Random	1 X GREY TUBE	PLASMA

GYNAECOLOGICAL CANCER PACKAGE, Code: GYCP

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Electrolytes, Creatinine & Urea	1 X YELLOW TUBE	SERUM
Liver Function Test		
Cancer Marker CA 12-5		
Glucose Random	1 X GREY TUBE	PLASMA

HEAD & NECK CANCER PACKAGE, Code: HNCP

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Electrolytes, Creatinine & Urea	1 X YELLOW TUBE	SERUM
Liver Function Test		
Glucose Random	1 X GREY TUBE	PLASMA

LIVER CANCER PACKAGE, Code: LICP

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Electrolytes, Creatinine & Urea	1 X YELLOW TUBE	SERUM
Liver Function Test		
Alpha-Feto Protein		
International Normalised Ration (INR)	1 X LIGHT BLUE TUBE	PLASMA
Glucose Random	1 X GREY TUBE	PLASMA

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LUNG CANCER PACKAGE, Code: LUCP

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Electrolytes, Creatinine & Urea	1 X YELLOW TUBE	SERUM
Liver Function Test		
Carcinoembryonic Antigen		
Cancer Marker CA 19-9		
Glucose Random	1 X GREY TUBE	PLASMA

LYMPHOMA CANCER PACKAGE, Code: LY MCP

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Erythrocyte Sedimentation Rate	1 X ESR TUBE	
Electrolytes, Creatinine & Urea	1 X YELLOW TUBE	SERUM/PLASMA
Liver Function Test		
Lactate Dehydrogenase		
Glucose Random	1 X GREY TUBE	PLASMA

NCC PACKAGE, Code: BCCP

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Electrolytes, Creatinine & Urea	1 X YELLOW TUBE	SERUM
Liver Function Test		
Glucose Random	1 X GREY TUBE	PLASMA

NCC PRE-TREATMENT HEPATITIS SCREEN, Code: HB6

Hepatitis B Screen (HBsAg & Anti-HBs)	1 X YELLOW TUBE	SERUM
Hepatitis B Core Antibody		
Hepatitis C Total Antibody		

NPC PRE-TREATMENT PACKAGE, Code: NPC1

Note: ZNPC1 specimen must be taken from Monday, Tuesday and Thursday (before 09:30 AM) only

Full Blood Count	2 X PURPLE TUBES	WHOLE BLOOD
Epstein Barr Virus PCR (Send out)		
Electrolytes, Creatinine & Urea	2 X YELLOW TUBES	SERUM
Liver Function Test		
Epstein Barr Virus VCA IgA (Send out)		
Glucose Random	1 X GREY TUBE	PLASMA

NPC DURING CHEMOTHERAPY PACKAGE, Code: NPC2

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Electrolytes, Creatinine & Urea	1 X YELLOW TUBE	SERUM
Liver Function Test		
Glucose Random	1 X GREY TUBE	PLASMA

PANCREAS AND BILIARY CANCER PACKAGE, Code: PACP

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Electrolytes, Creatinine & Urea	1 X YELLOW TUBE	SERUM
Liver Function Test		
Cancer Marker CA 19-9		
Glucose Random	1 X GREY TUBE	PLASMA

PROSTATE CANCER PACKAGE, Code: PRCP

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Electrolytes, Creatinine & Urea	1 X YELLOW TUBE	SERUM
Liver Function Test		
Total Prostate Specific Antigen		
Glucose Random	1 X GREY TUBE	PLASMA

THYROID PRE-TREATMENT, Code: TPTP1

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Electrolytes, Creatinine & Urea	2 X YELLOW TUBES	SERUM
Liver Function Test		
Thyroid Function Test		
Thyroglobulin (Send out)		
Glucose Random	1 X GREY TUBE	PLASMA

THYROID DURING CHEMOTHERAPY, Code: TPTP2

Full Blood Count	1 X PURPLE TUBE	WHOLE BLOOD
Electrolytes, Creatinine & Urea	1 X YELLOW TUBE	SERUM
Liver Function Test		
Glucose Random	1 X GREY TUBE	PLASMA

GJPMC PACKAGES

**Only available for GJPMC Clinic and Wards*

GENERAL TEST 1 PACKAGE, Code: GT1GJ

GENERAL TEST 5 PACKAGE, Code: GT5GJ

GENERAL TEST 7 PACKAGE, Code: GT7GJ

OPEN HEART SURGERY SCREENING, Code: OHS

GENERAL TEST 1 (GJ) PACKAGE, Code: GT1GJ

Full blood count (including ESR)	2 X PURPLE TUBES	WHOLE BLOOD
Glycated Haemoglobin (HbA1c)		
Renal function test	1 X YELLOW TUBE	SERUM
Liver function test		
Lipid Profile		
Bicarbonate		
Glucose fasting	1 X GREY TUBE	PLASMA
Urine FEME	STERILE CONTAINER	RANDOM URINE

GENERAL TEST 5 (GJ) PACKAGE, Code: GT5GJ

Full blood count (including ESR)	3 X PURPLE TUBES	WHOLE BLOOD
Blood Group		
Glycated Haemoglobin (HbA1c)		
Renal Function Test	2 X YELLOW TUBES	SERUM
Liver Function Test		
Lipid Profile		
Bicarbonate		
Hepatitis B Screen (HBsAg + HBsAb)		
Rheumatoid Factor		
Hepatitis A Antibodies (IgM + IgG)		
Thyroid Function Test		
Alpha Feto Protein		
Carcinoembryonic Antigen		
Cancer Marker 19.9		
Cancer Marker 125		
Cancer Marker 15.3		
RPR Screen		
Glucose Fasting	1 X GREY TUBE	PLASMA
Urine FEME	STERILE CONTAINER	RANDOM URINE

Refer to changes highlighted yellow

GENERAL TEST 7 (GJ) PACKAGE, Code: GT7GJ

Full Blood Count (Including ESR)	3 X PURPLE TUBES	WHOLE BLOOD
Blood Group		
Glycated Hemoglobin (HbA1c)		
Renal Function Test	2 X YELLOW TUBES	SERUM
Liver function test		
Lipid Profile		
Bicarbonate		
Hepatitis B Screen (HBsAg + HBsAb)		
Rheumatoid Factor		
Hepatitis A Antibodies (IgM + IgG)		
Thyroid Function Test		
Alpha Feto Protein		
Carcinoembryonic Antigen		
Cancer Marker 19.9		
Total Prostate Specific Antigen		
RPR Screen		
Glucose Fasting	1 X GREY TUBE	PLASMA
Urine FEME	STERILE CONTAINER	RANDOM URINE

OPEN HEART SURGERY SCREENING, Code: OHS

Full Blood Examination (Including ESR)	3 X PURPLE TUBES	WHOLE BLOOD
Blood Group And Hold		
Glycated Hemoglobin (HbA1c)		
Renal Function Test	2 X YELLOW TUBES	SERUM
Liver Function Test		
Lipid Profile		
C-Reactive Protein		
RPR Screen		
Hepatitis B Screen (HBsAg + HBsAb)		
HIV 1 & 2 Ag/Ab		
Hepatitis A Antibodies (IgM + IgG)		
Hepatitis C Total Antibody		
Thyroid Function Test		
Glucose Fasting	1 X GREY TUBE	PLASMA
Coagulation Profile	1 X LIGHT BLUE TUBE	PLASMA
Urine Culture And Sensitivity	STERILE CONTAINER	RANDOM URINE
MRSA Swab For Culture And Sensitivity	3 X SWABS	GROIN, AXILLA & NASAL
Sterility Test		
Sputum Culture And Sensitivity	STERILE CONTAINER	SPUTUM

