Jerudong Park Medical Centre

Organization Accredited Joint Commission International









LABORATORY HANDBOOK

DOCUMENT NUMBER:	LAB-HB-001/Version 6
EFFECTIVE DATE:	20/08/2023
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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. Added new tests: 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 Removed tests: 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 Added new tests: Cortisol (Urine), Cortisol (24hr urine), Cryoglobulin test, SARS-CoV-2 IgM, SARS-CoV-2 IgG, Fungal Microscopy and Culture, Salmonella typhi IgM/IgG/ Removed tests: PIVKA, Glucose (Urine), Infectious Mononucleosis/ Revised test info: 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

		Added new tests: 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, Tacrollimus Removed tests: Benzodiazepines, High Vaginal Swab C/S, TIBC, UIBC Revised test info: 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. Removed tests: COVID-19 IgM Revised test info: 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. Added new tests: NT-ProBNP, Respiratory Panel, C3, C4, Anti-CCP, Anti-Thryoglobulin, Anti-Thyroid Peroxidase, Thyroid Receptor Antibody, Thyroglobulin, Insulin, Parathyroid Hormone, Urine Glucose, Urine Ketone, HBV DNA Viral Load, Urea (Urine 24 hours) Removed tests: COVID-19 IgG, BNP Added new outsourced tests: NICE Basic, NICE Extended, Parathyroid Hormone Revised test info: Widal/Weil Felix, Typhoid antibody, Rickettsial serology, Uric Acid, Amylase, Cryoglobulin Test, outsourced tests

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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 committed in providing high quality laboratory services relevant to medicine and disease surveillance to physicians and health care providers for optimum patient care.

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. Specimen Receiving and Management
VII. Phlebotomy
VIII. Blood Donation

MISSION STATEMENT

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

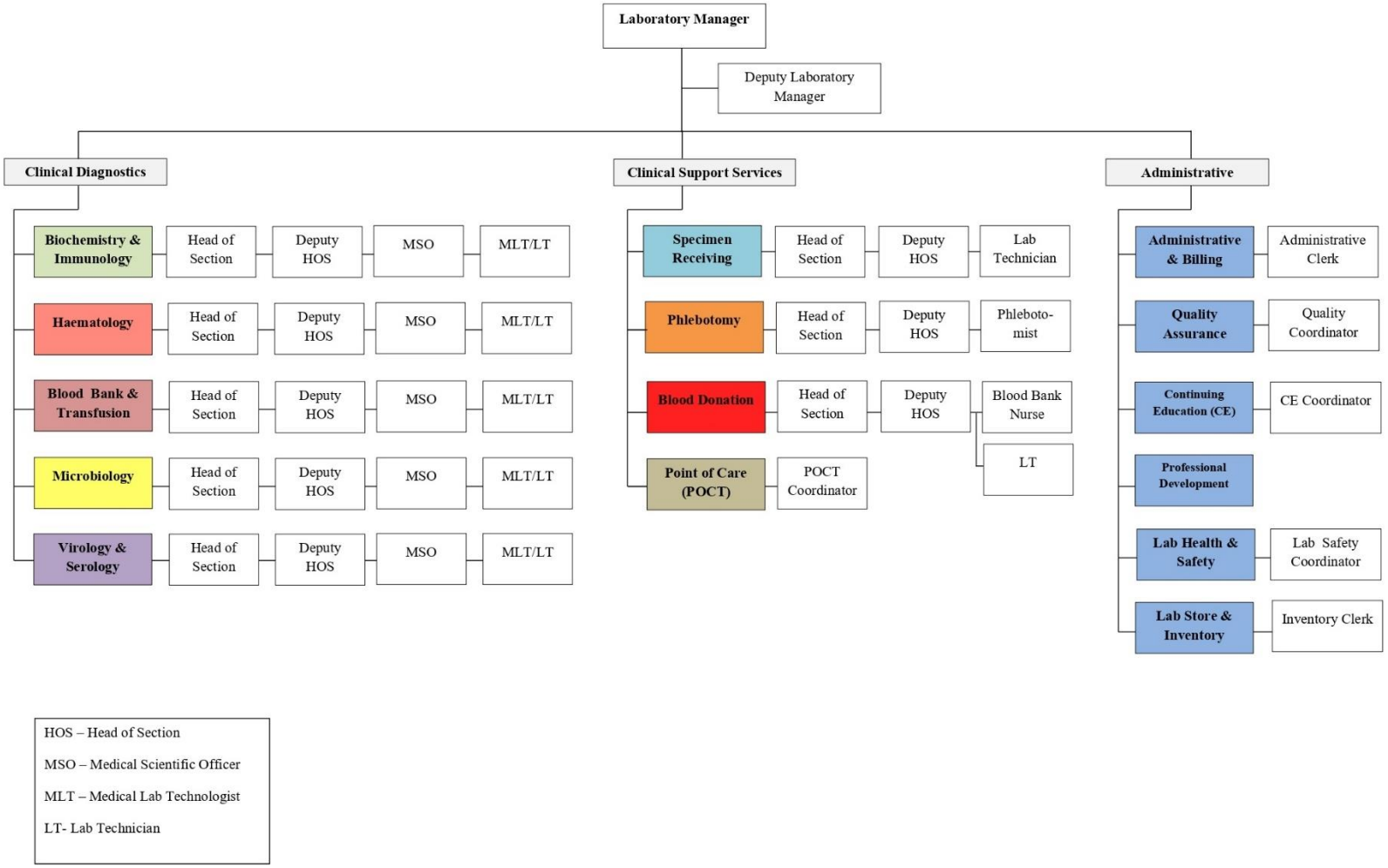
VISION STATEMENT

Our 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).

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 (PJSC)

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

For enquiries or feedback, 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)	1575/1576
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

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 STAT (Short Turn-Around-Time) tests will be processed as Urgent.

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.

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LAB REQUEST FORM

PRN No.: _____

Name: _____

IC/Passport No.: _____

Sex: _____ DOB: _____

Nationality: _____ Tel: _____

Please fill in or stick patient's sticker here

Laboratory Numbers

REQUESTOR DETAILS

Requesting Doctor's Name: _____

Clinic / Ward: _____

Tel Number: _____

☐ **URGENT** ☐ ROUTINE

☐ 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)

SAMPLE TYPE

☐ Blood

☐ Urine

☐ Fluids: _____

☐ Other: _____

RELEVANT CLINICAL INFORMATION

Drug Therapy: _____

(Please note anticoagulant therapy when ordering coagulation test)

Last Dose: _____

Date & Time: _____

Other Relevant Clinical Information: _____

TEST REQUESTS

SINGLE TESTS

BIOCHEMISTRY

- ☐ ALB/CREA RATIO
- ☐ ALBUMIN
- ☐ ALBUMIN - CSF
- ☐ ALP
- ☐ ALT
- ☐ AMIKACIN - PEAK
- ☐ AMIKACIN - TROUGH
- ☐ AMMONIA
- ☐ AMYLASE
- ☐ AST
- ☐ BICARBONATE
- ☐ BILIRUBIN DIRECT
- ☐ BILIRUBIN TOTAL
- ☐ CALCIUM
- ☐ CARBAMAZEPINE
- ☐ CHOLESTEROL
- ☐ CK
- ☐ CREATININE
- ☐ CRP
- ☐ DIGOXIN
- ☐ GENTAMICIN - PEAK
- ☐ GENTAMICIN - TROUGH
- ☐ GGT
- ☐ GLUCOSE - 1 HR
- ☐ GLUCOSE - 2 HR
- ☐ GLUCOSE - FASTING
- ☐ GLUCOSE - RANDOM
- ☐ IRON
- ☐ LACTATE
- ☐ LACTATE - CSF
- ☐ LDH
- ☐ LDH - FLUID
- ☐ MAGNESIUM
- ☐ MICROALBUMIN
- ☐ OSMOLALITY - BLOOD
- ☐ OSMOLALITY - URINE
- ☐ PHENOBARBITAL
- ☐ PHENYTOIN
- ☐ PHOSPHATE
- ☐ POTASSIUM
- ☐ RHEUMATOID FACTOR
- ☐ SODIUM
- ☐ SODIUM - URINE
- ☐ TOTAL PROTEIN
- ☐ TRIGLYCERIDES
- ☐ UREA
- ☐ URIC ACID
- ☐ VALPROIC ACID
- ☐ VANCOMYCIN - PEAK
- ☐ VANCOMYCIN - TROUGH

IMMUNOASSAY

- ☐ AFP
- ☐ B12
- ☐ BETA-HCG
- ☐ BNP
- ☐ CA 125
- ☐ CA 153
- ☐ CA 19-9
- ☐ CEA
- ☐ CKMB
- ☐ CORTISOL
- ☐ DHEAS
- ☐ E2
- ☐ FERRITIN
- ☐ FOLATE
- ☐ FSH
- ☐ LH
- ☐ PROCALCITONIN
- ☐ PROGESTERONE
- ☐ PROLACTIN
- ☐ TOTAL PSA
- ☐ TOTAL TESTOSTERONE
- ☐ TROPONIN I
- ☐ TSH
- ☐ VITAMIN D TOTAL

HAEMATOLOGY

- ☐ APARTIAL THROMBIN TIME
- ☐ APTT 50% CORRECTION
- ☐ APTT RATIO
- ☐ BLOOD FILM
- ☐ D-DIMER
- ☐ ESR
- ☐ FBC
- ☐ FIBRINOGEN
- ☐ HAEMOGLOBIN
- ☐ MALARIA SCREEN
- ☐ MICROFILIARIA SCREEN
- ☐ PROTHROMBIN 50% CORRECTION
- ☐ PROTHROMBIN TIME
- ☐ RETICULOCYTE

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

PROFILES

☐ CAR	☐ FLB	☐ LIP
☐ COP	☐ FRL	☐ MCM
☐ CSFB	☐ GAS	☐ PCRTR
☐ DIC	☐ GFR	☐ RFT
☐ DST	☐ GTT2	☐ TFT
☐ ECU	☐ HBA1C	☐ UDRUG
☐ ELY	☐ IS	☐ UTP24
☐ FCM	☐ LFT	☐ VBG

PACKAGES

GENERAL PACKAGES

☐ ZGT1 ☐ ZGT5 ☐ ZGT7 ☐ ZGTP

BNSRC PACKAGES

☐ ZNSRC1 ☐ ZNSRC2 ☐ ZNSRC3

GJ PACKAGES

☐ GCSPF	☐ GT1GJ	☐ OHS
☐ GCSPM	☐ GT5GJ	☐ RFTGJ
☐ GJFRL	☐ GT7GJ	

TBCC PACKAGES

☐ ZBRCP	☐ ZLICP	☐ ZNPC2
☐ ZCOCP	☐ ZLUCP	☐ ZPACP
☐ ZGCCP	☐ ZLYMCP	☐ ZPRCP
☐ ZGYCP	☐ ZNCCP	☐ ZTPTP1
☐ ZHB6	☐ ZNPC1	☐ ZTPTP2

ADDITIONAL TESTS REQUESTED

FOR LAB USE

BLOOD	PLAIN		EDTA		GREY		
	GREEN		BLUE				
URINE		Received By and Date:					
SWAB							
FLUID							
OTHERS							

Doctor's Signature: _____ Date: _____

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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:

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CR NO: AGO/RC/4666

LABORATORY DEPARTMENT LAB NO:

BLOOD BANK REQUEST FORM

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

SPECIMEN: 1 EDTA Blood Tube

Coll'd by :
Date :
Time :

Rec'd by :
Date :
Time :

Clinical History :

Hb (g/L): PLT (10^3/µL):

BLOOD TRANSFUSION REQUEST

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

Further Information

- ☐ Packed Cells :
- ☐ Whole Blood :
- ☐ Fresh Frozen Plasma (FFP) :
- ☐ Cryoprecipitate :
- ☐ Random Platelet Units :
- ☐ Apheresis Units :

Blood Group (if known) : Rh(D) :

For Surgery / Transfusion on :

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									

THAWED FFP/CRYO
Date and time thawed : _____
FFP unit/s must be transfused within 24 hours after thawing.
CRYO unit/s must be transfused within 6 hours after thawing.

Technologist Signature _____
Date _____
Time _____

Remarks : _____

NOTE:

• Return blood to Blook Bank 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.

BLOOD TRANSFUSION LAB : Ext 2320

JPMC/BB/BBRF/VERO3/11.02.20

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.

- ✓ 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.

- ✓ 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

- ✓ 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.

- ✓ 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

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

PAEDIATRIC PATIENTS

ORDER OF DRAW

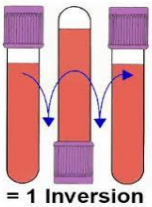
CONTAINER	BLOOD CULTURE 	LIGHT BLUE TOP 	PURPLE MICROTAINER 	GREEN MICROTAINER 	YELLOW MICROTAINER 
ADDITIVE	Bacterial Growth Medium	Sodium citrate	K_2 EDTA	Lithium Heparin	Clot Activator
GENTLE MIX BY INVERSION	8-10 times	6-8 times	10 times	10 times	5 times
MINIMUM DRAW VOLUME	3 mL	1.8 mL (up to line)	500µL	600µL	600µL

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

ADULT PATIENTS

ORDER OF DRAW

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	1.8 mL (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.

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.

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

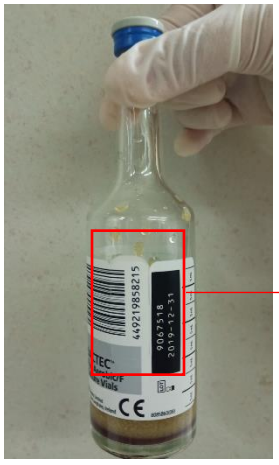
	Centrifuging specimen before 30 minutes of collection (before clot formation for SST yellow tubes)	Allow the specimen tube to remain vertical in a rack for a minimum of 30 minutes
Haemolysis/Diluted specimen	Drawing blood from vascular/peripheral IV line	Pause the infusion for at least 2 minutes, flush 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 invertion 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.

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.

Figure 1. Urine container

Figure 2. Round-bottomed tube

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

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	1 to 2 mL of 6M HCL	20 to 30 mL of 6M HCL
Calcium/Creatinine Ratio	1 to 2 mL of 6M HCL	20 to 30 mL of 6M HCL
Creatinine	No preservative needed	20 to 30 mL of 6M HCL
Magnesium	NA	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.

◊ 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.

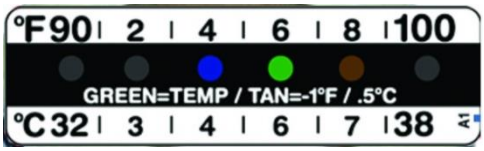
For Malay version of patient instruction, please call extension 2127

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

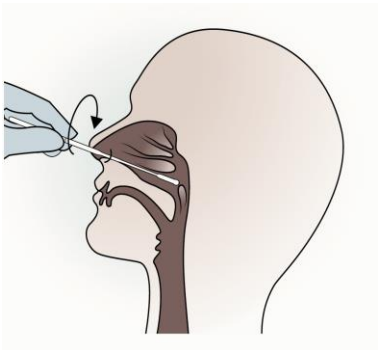
The specimen should be evaluated and recollected if sample appears to be saliva.

- ◊ 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:

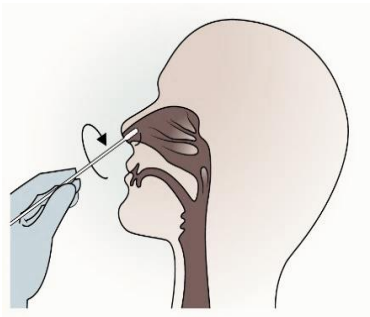
- ◊ Submit three first-morning expectorate sputum samples, collected on three different days. Label the sample accordingly, i.e. "1st Sample (Date: dd/mm/yy)", "2nd Sample (Date: dd/mm/yy)" and "3rd Sample (Date: dd/mm/yy)".
- ◊ At least 3 mL sputum is required for AFB cultures.
- ◊ Refrigerate the samples

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

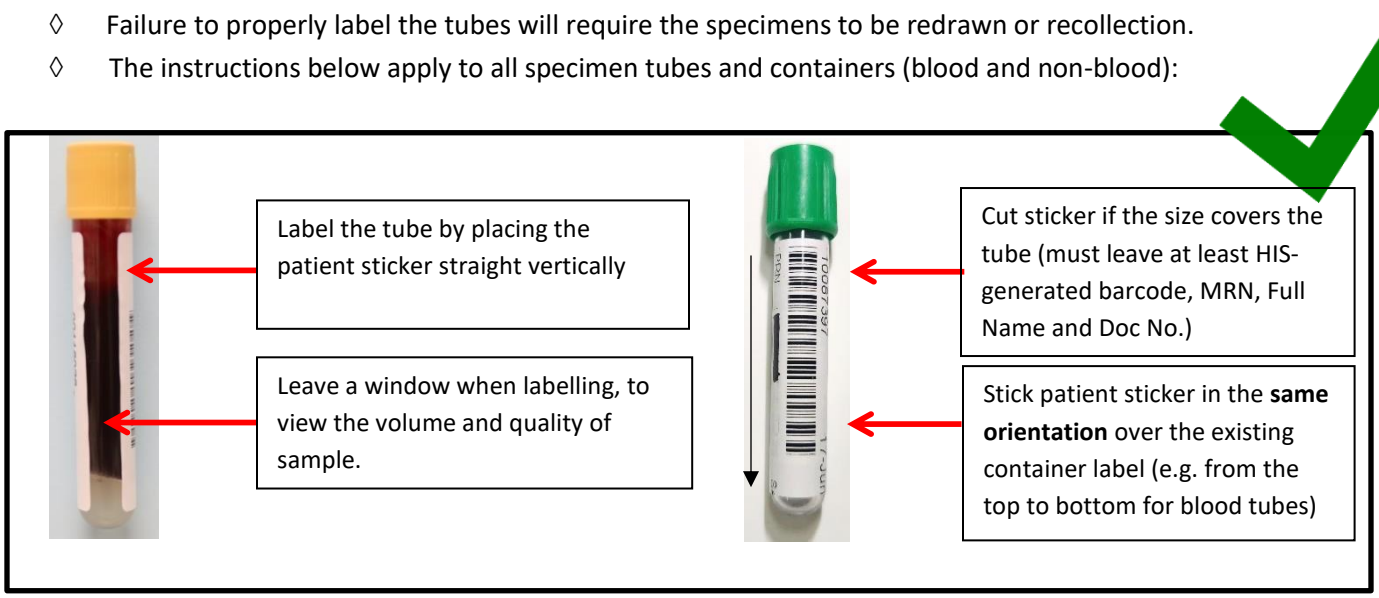
◊ The person collecting the blood sample is responsible for transcribing the following info on sample container, or at least two identifiers (patient's name, and date of birth or PRN or Doc No.):

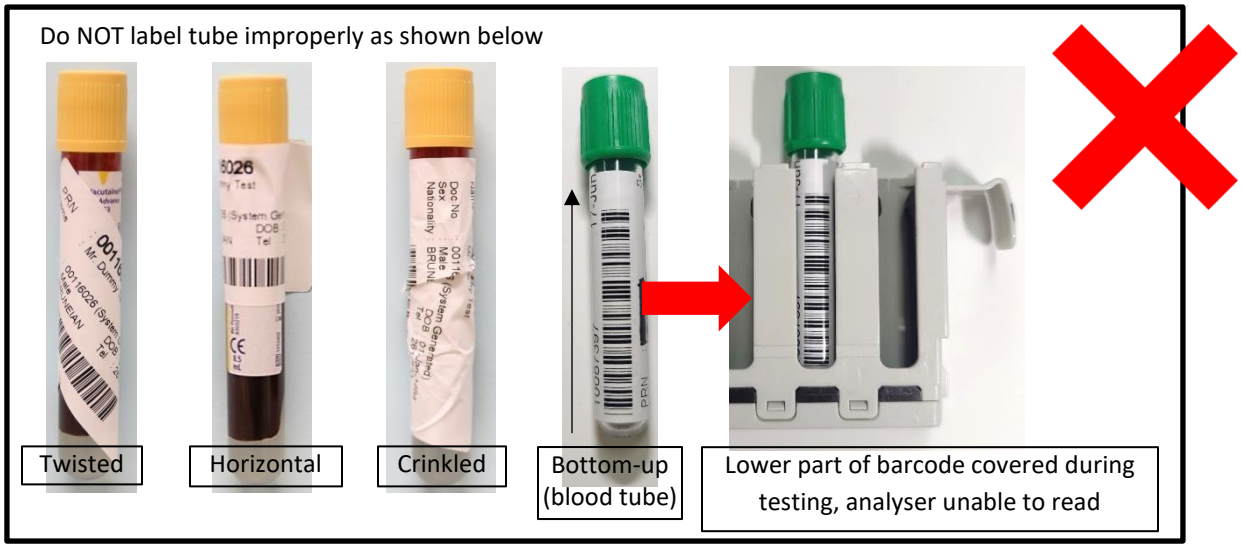
- Patient's name
- Patient's MRN/PRN
- Patient's document number (IC No. or passport)
- Date and year of birth
- Sex of patient
- Computer assigned lab # (if ordered through Vesalius)

◊ 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):





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 specimen to the laboratory as soon as possible to preserve specimen integrity. Unspun or unprocessed (uncentrifuged) blood specimen must be sent to the laboratory within 2 hours after collection.

◊ 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. Do **NOT** store tubes in direct contact of a heat source such as direct sunlight, top of refrigerator, heating/air vents, etc.

◊ 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.

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 ordering 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.

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 relevant laboratory extension.

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.

CRITICAL RESULT LIST

BIOCHEMISTRY & IMMUNOLOGY CRITICAL RESULT			
Test	**Low**	**High**	**Unit**
Amikacin	-	> 8 (Trough) > 35 (Peak)	mg/L
Bilirubin, total (>1 month to < 1 year)	-	≥ 257	umol/L
Calcium	< 1.75	> 3.25	mmol/L
Creatine kinase	-	≥ 10000	U/L
Cyclosporine	< 100	> 800	ng/mL
Digoxin	-	> 2	ng/mL
Gentamicin	-	> 2 (Trough) > 12 (Peak)	mg/L
Glucose	< 2.5	> 25.0	mmol/L
Glucose (0 day to 2 months)	< 2.6	> 7.3	mmol/L
Glucose (2 months to 12 years)	< 3.3	> 25.0	mmol/L
Lactate	-	> 5	mmol/L
Magnesium	< 0.4	-	mmol/L
Osmolality (Serum)	≤ 190	≥ 390	mOsm/kg
Phenytoin	-	> 20	mg/L
Potassium	< 2.5	> 6.0	mmol/L
Sodium	< 120	> 160	mmol/L
Tacrolimus	< 4	> 12	ng/mL
Troponin-I	-	> 15.6 (Female) > 34.2 (Male)	ng/L
Valproic acid	-	> 100	mg/L
Vancomycin	-	> 10 (Trough) > 80 (Peak)	mg/L

HAEMATOLOGY CRITICAL RESULT			
Test	**Low**	**High**	**Unit**
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 CRITICAL RESULT
Positive for blood culture, AFB smear and CSF gram stain

BLOOD TRANSFUSION POLICY

CROSSMATCH REQUEST

Specimen:	Plasma (EDTA, 1-3 mL)
Collection:	Freshly drawn sample is required
	Person collecting the blood must sign/initial and date on the patient sticker on both blood sample and request form
Specimen Stability:	NA
Rejection Criteria:	Grossly haemolysed
Method:	Column Agglutination using Ortho Vision System or Semi-Automated Method
Clinical usage:	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 Code: **XM** Followed by:	
Blood product	**Blood product Code**
Whole blood	WB
Packed cells	PC
Leukodepleted Packed cells	LDPC
Fresh Frozen Plasma	FFP
Cryoprecipitate	CRYO
Platelets	PLTC
Apheresis	APLT

◊ To order crossmatch in the electronic system, please insert code 'XM', followed by blood product type, "x" and "no. of units required". For example:
- To request crossmatch for 4 units of packed cells, the code is XM and PCX4 (2 entries).
- To request for 6 units of platelets, the code is XM and PLTCX6**.**

◊ All blood product requisitions must be ordered and signed by physicians using the BLOOD BANK REQUEST FORM.

◊ If ward/clinic is using the Vesalius system to request test, they will still need to fill in the BLOOD BANK REQUEST FORM in addition to the electronic request.

INVESTIGATION OF ADVERSE TRANSFUSION REACTION

Specimen:	Post-transfusion: - Patient's Serum (Yellow SST, 3-5 mL) - Plasma (EDTA, 1-3 mL) - 50mL Urine - Blood culture bottles (if requested by physician) - Donor's blood sample from segments of the transfused blood unit - Transfusion Reaction Notification Form
Rejection Criteria:	Haemolysed specimen (a recollection of post-transfusion blood specimen is required to ensure haemolysis is not due to collection procedure)
Method:	Perform blood grouping, antibody screening, crossmatch with pre- and post–transfusion patient's sample Perform a DAT on pre- and post-transfusion specimen Check Patient's urine for RBC's
Performed:	Daily
Analytical Time:	STAT

◊ The attending physician or nurse in-charge must immediately inform the Blood Bank 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.

◊ 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, 1-3 mL)
Rejection Criteria:	Grossly haemolysed
Method:	Tube method and Ortho Vision system AFTER blood products have been issued
Clinical usage:	For the immediate release of un-crossmatched group and type specific blood products or group O blood products, either Rh-positive or Rh-negative

◊ The attending physician must issue a written order using Blood Bank Request Form specifying blood group (if known) and number of units required, followed by the Emergency Release of Blood Form. Both forms 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.

◊ 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 noted with the crossmatch procedure, laboratory staff will immediately notify the nurse in-charge, and the transfusion process must be stopped. The blood unit must then be returned to the laboratory as soon as possible for adverse transfusion reaction investigation.

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. 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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Assessment of Vitamin D deficiency
Reference range:	See laboratory report
Performed:	Every Tuesday and Friday
TAT:	3 days
Section:	Immunology (ext 2407)

ABSCESS SWAB CULTURE & SENSITIVITY, 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
Clinical usage:	Diagnosis of bacterial infection
Reference range:	-
Performed:	Daily
TAT:	48-72 hours
Section:	Microbiology (ext 2436)

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
Clinical usage:	Detection of *Acinetobacter baumannii*
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 specimen, code is STER2. And so on and so forth).

Refer to changes highlighted grey

ACTIVATED PARTIAL THROMBOPLASTIN TIME, Code: APTT

Specimen:	Plasma (Sodium Citrate, blue top)
Collection:	1.8 mL (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
Clinical usage:	Monitoring heparin therapy and screening test for clotting factors
Reference range:	See Laboratory Report
Performed:	Daily
TAT:	1 day, STAT
Important Notes:	**Anticoagulant therapy must be indicated on the requisition form**
Section:	Haematology (ext 2408)

ACTIVATED PARTIAL THROMBOPLASTIN TIME RATIO, Code: APTTRATIO

Specimen:	Plasma (Sodium Citrate, blue top)
Collection:	1.8 mL (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
Clinical usage:	NA
Reference range:	See Laboratory Report
Performed:	Daily
TAT:	1 day, STAT
Important Notes:	**Anticoagulant therapy must be indicated on the requisition form**
Section:	Haematology (ext 2408)

APTT 50% CORRECTION, Code: APT50

Specimen:	Plasma (Sodium Citrate, blue top)
Collection:	1.8 mL (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
Clinical usage:	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)

Refer to changes highlighted grey

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:	Haemolysed or Icteric
Method:	IFCC, NADH without pyridoxal phosphate
Clinical usage:	Liver profile assessment
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:	Grossly haemolysed
Method:	Colorimetric with Bromcresol Green
Clinical usage:	Indicator of nutritional status
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
Clinical usage:	Renal function test
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

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:	Grossly haemolysed
Method:	IFCC, Para-nitrophenyl Phosphate
Clinical usage:	Liver profile assessment
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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	A tumour marker for hepatocelluar carcinoma and testicular cancer
Reference range:	See laboratory report
Performed:	Office hours only
TAT:	2 days
Section:	Immunology (ext 2407)

AMIKACIN, 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:	Grossly haemolysed
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Clinical usage:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

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:	Grossly haemolysed
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Clinical usage:	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:	Grossly haemolysed
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Clinical usage:	Therapeutic drug monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

AMMONIA, Code: AMON

Specimen:	Plasma (K_2 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 after venipuncture for rapid centrifugation *(please inform at least 1 hour prior to collection)
Specimen Stability:	Assay immediately
Rejection Criteria:	Haemolysed, specimen is not placed on ice or specimen received after 15 minutes
Method:	Enzymatic with Glutamate Dehydrogenase
Clinical usage:	Screening test for amino acid disorders
Reference range:	See laboratory report
Performed:	Daily
TAT:	2 hours, STAT
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

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:	Grossly haemolysed
Method:	IFCC, Enzymatic with CNPG3 Substrate
Clinical usage:	Diagnosis of pancreatitis
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
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
Clinical usage:	Diagnosis 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
Clinical usage:	Diagnosis of pancreatitis
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

ANTIBODY SCREENING, Code: BAB

OTHER TEST NAME: INDIRECT ANTIGLOBULIN TEST

Specimen:	Plasma from Whole Blood (EDTA, 1-3 mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	Grossly Haemolysed
Method:	Column Agglutination using Ortho Vision System
Clinical usage:	To detect as many clinically significant antibodies as possible
Performed:	Daily
TAT:	1 day
Section:	Blood Transfusion (ext 2320)

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

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

ANTI-STREPTOLYSIN O TITRE, Code: ASO

Specimen:	Serum (SST, Yellow Top, 5 mL)
Collection:	NA
Specimen Stability:	2 days at 2-8°C
Rejection Criteria:	Haemolysed, Contaminated, Lipaemic
Method:	Latex agglutination
Clinical usage:	Diagnosis of acute group A streptococci infection
Reference range:	Negative or <200 IU/mL
Performed:	Office hours only
TAT:	1 day
Section:	Virology and Serology (ext 2322)

Refer to changes highlighted grey

ANTI-THYROGLOBULIN , Code: ATHY

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

Refer to changes highlighted grey

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
Clinical usage:	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)*

Specimen:	Whole blood (Heparinized syringe, 1 mL)
Collection:	Syringe placed on ice, state whether it is arterial or venous specimen and send immediately to lab
Specimen Stability:	Up to 1 hour if placed on ice immediately
Rejection Criteria:	Specimen is not placed on ice, evidence of clotting, presence of air bubbles in specimen, or sample was given 1 hour after collection
Method:	Abbott i-STAT
Clinical usage:	To monitor patient's blood pH, oxygen (O_2), and carbon dioxide (CO_2).
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 hour, 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:	Haemolysed
Method:	IFCC, Enzymatic without pyridoxal phosphate
Clinical usage:	Liver and cardiac assessment
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

BENCE JONES PROTEIN, Code: BJP

Specimen:	Urine (Sterile container)
Collection:	Fresh morning urine
Specimen Stability:	Test immediately
Rejection Criteria:	NA
Method:	Heat test
Clinical usage:	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:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Grossly haemolysed
Method:	Enzymatic with PEP Carboxylase
Clinical usage:	Evaluate acid-base imbalances
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

BILIRUBIN-DIRECT, Code: BILD

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Protect specimens from exposure to light
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Haemolysed, Lipaemic, or specimen was left overnight
Method:	Diazo reaction
Clinical usage:	Differential diagnosis of jaundice
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

BILIRUBIN-TOTAL, Code: BILT

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Protect specimens from exposure to light
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Haemolysed, Lipaemic or specimen was left overnight
Method:	Diazonium salt
Clinical usage:	Diagnosis of jaundice
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
Clinical usage:	Diagnosis of septicaemia
Reference range:	No growth after 5 days incubation
Performed:	Daily
TAT:	5 days
Section:	Microbiology (ext 2436)

BLOOD CULTURE for PAEDIATRIC (Aerobic) Code: BCP

Specimen:	Whole blood (Bactec blood culture bottle)
Collection:	1 – 3 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
Clinical usage:	Diagnosis of septicaemia
Reference range:	No growth after 5 days incubation
Performed:	Daily
TAT:	5 days
Section:	Microbiology (ext 2436)

BLOOD CULTURE for YEAST IDENTIFICATION and SENSITIVITY, 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
Clinical usage:	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
Clinical usage:	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, 1-3 mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	Grossly Haemolysed
Method:	Column Agglutination using Ortho Vision System or Manual Tube Method
Clinical usage:	Blood group determination
Performed:	Daily
TAT:	1 day
Section:	Blood Transfusion (ext 2320)

Refer to changes highlighted grey

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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Monitoring therapy in 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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Monitoring therapy in 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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Monitoring therapy in pancreatic and hepatobiliary cancer
Reference range:	See laboratory report
Performed:	Office hours only
TAT:	2 days
Section:	Immunology (ext 2407)

Refer to changes highlighted grey

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:	Grossly haemolysed
Method:	Colorimetric method with Arsenazo III
Clinical usage:	Evaluation of calcium metabolism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

CALCIUM IONISED, Code: CAI

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:	Grossly haemolysed
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:	Preserve urine using 1 to 2 mL of 6M HCL
Specimen Stability:	4 days at 2-8°C
Rejection Criteria:	NA
Method:	Colorimetric method with Arsenazo III
Clinical usage:	Evaluation of calcium metabolism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

CALCIUM & CREATININE RATIO (URINE RANDOM), Code: RCCR

Specimen:	Urine (Sterile container)
Collection:	Preserve urine using 1 to 2 mL of 6M HCL
Specimen Stability:	4 days at 2-8°C
Rejection Criteria:	NA
Method:	Refer to individual test method
Clinical usage:	Screening tool for hypercalciuria
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
Clinical usage:	Evaluation of calcium metabolism
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
Clinical usage:	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:	Grossly haemolysed
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Clinical usage:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

CARCINOEMBRYONIC ANTIGEN, 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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Monitoring therapy in colon cancer; increased level in smokers
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:	4 days at 2-8°C
Rejection Criteria:	Haemolysed
Method:	Refer to individual test method
Clinical usage:	Assessment of cardiac enzymes
Reference range:	See laboratory report
Performed:	Office hours only
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

CHLAMYDIA TRACHOMATIS/NEISSERIA GONORRHOEAE DNA, CODE: CTNG

Specimen:	Endocervical Swab, Vaginal 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
Clinical usage:	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:	Haemolysed
Method:	Indirect Ion-selective electrode potentiometry
Clinical usage:	Evaluation / assessment of electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
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
Clinical usage:	Evaluation / assessment of electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

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
Clinical usage:	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:	Haemolysed or Icteric
Method:	Enzymatic
Clinical usage:	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:	-
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
Clinical usage:	Detects C.difficile antigen and toxin
Reference range:	Negative
Performed:	Daily
TAT:	1 day
Section:	Microbiology (ext 2436)

Refer to changes highlighted grey

COMPLEMENT C3 , Code: C3

Specimen:	Serum (SST, yellow top, 5mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	Grossly haemolysed
Method:	Immunoturbidimetric
Clinical usage:	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)
Collection:	NA
Specimen Stability:	2 days at 2-8°C
Rejection Criteria:	Grossly haemolysed
Method:	Immunoturbidimetric
Clinical usage:	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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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)

Refer to changes highlighted grey

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)
Clinical usage:	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)
Clinical usage:	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:	Grossly haemolysed
Method:	Turbidimetric/Immunoturbidimetric
Clinical usage:	Detect inflammation and tissue injury
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

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:	Grossly haemolysed
Method:	IFCC with N-acetyl-L-cysteine
Clinical usage:	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)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	Haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Test for myocardial infraction
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:	Haemolysed or Icteric
Method:	Kinetic Alkaline Picrate
Clinical usage:	Renal function test
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

CREATININE (URINE RANDOM), Code: UCRT

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	6 days at 2-8°C
Rejection Criteria:	NA
Method:	Kinetic Alkaline Picrate
Clinical usage:	Renal function test
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:	Preserve urine using 20 to 30 mL of 6M HCL and store refrigerated during collection period
Specimen Stability:	6 days at 2-8°C
Rejection Criteria:	NA
Method:	Kinetic Alkaline Picrate
Clinical usage:	Renal function test
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:	Preserve urine using 20 to 30 mL of 6M HCL and store refrigerated during collection period.
Specimen Stability:	6 days at 2-8°C
Rejection Criteria:	Haemolysed or Icteric for blood, or only one specimen type received
Method:	Calculated
Clinical usage:	Creatinine clearance evaluation
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

CRYPTOCOCCAL STAIN, Code: CPT

Specimen:	CSF (Sterile container)
Collection:	-
Specimen Stability:	Send to laboratory as soon as possible
Rejection Criteria:	-
Method:	Conventional
Clinical usage:	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 2-8°C
Rejection Criteria:	Icteric/Lipaemic
Method:	Incubation at 4°C for 72 hours and observed for precipitation
Clinical usage:	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 ALBUMIN, Code: CSFALB

Specimen:	Cerebrospinal Fluid (Sterile screw-capped container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	Contaminated with blood caused by traumatic tap
Method:	Turbidimetric/Immunoturbidimetric
Clinical usage:	Assessment of CNS disease and infection
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

CSF CULTURE only, Code: CSFC

Specimen:	CSF (Sterile container)
Collection:	-
Specimen Stability:	Send to laboratory as soon as possible
Rejection Criteria:	-
Method:	Light microscopy and conventional culture
Clinical usage:	Diagnosis of bacterial meningitis
Reference range:	Culture sterile
Performed:	Daily
TAT:	48-72 hours
Section:	Microbiology (ext 2436)

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

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

CSF FEME & CULTURE, Code: CSFFC

Specimen:	CSF (Sterile container)
Collection:	-
Specimen Stability:	Send to laboratory as soon as possible
Rejection Criteria:	Heavily blood-stained specimen (for FEME)
Method:	Conventional culture
Clinical usage:	Diagnosis of bacterial meningitis
Reference range:	Culture sterile, leukocytes 0-5µl
Performed:	Daily
TAT:	48-72 hours
Section:	Microbiology (ext 2436)

CSF GLUCOSE, Code: CSFB
Note: Test is run together with CSF Protein

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

CSF PROTEIN, Code: CSFB
Note: Test is run together with CSF Glucose

Specimen:	Cerebrospinal Fluid (Sterile screw-capped container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	Contaminated with blood caused by traumatic tap
Method:	Turbidimetric with Benzethonium Chloride
Clinical usage:	Assessment of CNS disease and infection
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

CSF LACTATE, Code: CSFLAC

Specimen:	Cerebrospinal Fluid (Sterile screw-capped container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	Contaminated with blood caused by traumatic tap
Method:	Enzymatic, Lactic acid to pyruvate
Clinical usage:	Assessment of CNS disease and infection
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

CSF LACTATE DEHYDROGENASE (LDH), Code: LDHCSF

Specimen:	Cerebrospinal Fluid (Sterile screw-capped container)
Collection:	Fresh sample and send to lab immediately
Specimen Stability:	Assay immediately
Rejection Criteria:	Contaminated with blood caused by traumatic tap
Method:	IFCC, Lactate to Pyruvate
Clinical usage:	Assessment of CNS disease and infection
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

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)
Clinical usage:	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:	1.8 mL (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
Clinical usage:	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: DHEA

Specimen:	Serum (SST yellow top, 5mL)
Collection:	NA
Specimen Stability:	8 days at 2-8°C
Rejection Criteria:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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 + Antibody), 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
Clinical usage:	Diagnosis of acute/past dengue infection
Reference range:	Negative
Performed:	Daily
TAT:	2 hours
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) 2) Whole blood (EDTA, purple top, 3mL)
Collection:	Fasting for at least 8 hours and not more than 12 hours
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Grossly haemolysed, not fasting or fasting less than 8 hours
Method:	Refer to individual test method
Clinical usage:	Diagnosis 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 haemaglobin (HbA1c) and urine microalbumin

Specimen:	1) Serum (SST, yellow top, 5mL) 2) Plasma (Sodium fluoride, grey top, 3mL) 3) Whole blood (EDTA, purple top, 3mL) 4) Urine (Sterile container)
Collection:	Fasting for at least 8 hours and not more than 12 hours
Specimen Stability:	5 days at 2-8°C
Rejection Criteria:	Haemolysed, icteric, not fasting or fasting less than 8 hours
Method:	Refer to individual test method
Clinical usage:	Diagnosis 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:	48 hours at 2-8°C
Rejection Criteria:	Haemolysed
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Clinical usage:	Monitoring of Digoxin dosage
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:	Plasma from Whole Blood (EDTA purple top, 1-3 mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	Grossly Haemolysed
Method:	Column Agglutination using Ortho Vision System
Clinical usage:	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)

Du test, Code: DU

Specimen:	Whole Blood (EDTA purple top, 1-3 mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	Grossly haemolysed
Method:	Tube method
Clinical usage:	Verification procedure for rhesus negative blood groups
Reference Range:	NA
Performed:	Daily
TAT:	1 day
Section:	Blood Transfusion (ext 2320)

EAR SWAB CULTURE & SENSITIVITY, Code: RSCEAR

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

Refer to changes highlighted grey

ELECTROLYTES, Code: ELY

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:	Haemolysed
Method:	Indirect Ion-selective electrode potentiometry
Clinical usage:	Evaluation / assessment of electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

ELECTROLYTES (URINE RANDOM), Code: ELY2

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
Clinical usage:	Evaluation / assessment of electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

ELECTROLYTES, CREATININE & UREA, Code: ECU

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:	Haemolysed or Icteric
Method:	Refer to individual test method
Clinical usage:	Renal function test
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

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, lipaemic
Method:	Photometric Rheology
Clinical usage:	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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Evaluation of hypothalamic-pituitary-ovarian axis. Investigation of Infertility. Investigation of unexplained gynecomastia.
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
Clinical usage:	To detect presence and levels of alcohol
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

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
Clinical usage:	To detect presence and levels of alcohol
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

EYE SWAB CULTURE & SENSITIVITY, Code: RSCEYE

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

FAECAL OCCULT BLOOD, Code: OCI

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

Refer to changes highlighted grey

FAECAL VIRAL STUDIES (ADENOVIRUS ANTIGEN), Code: FVSA

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

FAECAL VIRAL STUDIES (ROTAVIRUS ANTIGEN), Code: FVSR

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

FAECAL MICROSCOPY, CULTURE & SENSITIVITY Code: FMC

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

Refer to changes highlighted grey

FAECAL MICROSCOPY, Code: FM

Specimen:	Stool (Sterile container with attached spatula)
Collection:	-
Specimen Stability:	Send to laboratory as soon as possible
Rejection Criteria:	Specimens other than stool
Method:	Light microscopy
Clinical usage:	Detection of parasites in stool
Reference range:	No ova, cysts and parasitic infection
Performed:	Daily
TAT:	1 day, STAT
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:	Haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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:	1.8 ml (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
Clinical usage:	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)

Refer to changes highlighted grey

FLUID ALBUMIN, 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
Clinical usage:	To measure levels of albumin in body fluids; identification of pleural effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

FLUID AMYLASE, 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
Clinical usage:	To measure levels of amylase in body fluids; identification of pleural effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

FLUID BIOCHEMISTRY – PROTEIN & GLUCOSE, Code: FLB

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
Clinical usage:	To measure levels of protein and glucose in body fluids; identification of pleural effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

FLUID CULTURE only, Code: FLC

Specimen:	Body Fluid (Sterile screw-capped container, 1 ml)
Collection:	-
Specimen Stability:	Send to laboratory as soon as possible
Rejection Criteria:	-
Method:	Conventional culture
Clinical usage:	Diagnosis of bacterial infection
Reference range:	-
Performed:	Daily
TAT:	48-72 hours
Section:	Microbiology (ext 2436)

FLUID FEME only (Gram Stain, Microscopy and cell count), Code: FLF

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

FLUID LACTATE, 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
Clinical usage:	To measure levels of lactate in body fluids; identification of pleural effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

FLUID LACTATE DEHYDROGENASE (LDH), 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
Clinical usage:	To measure levels of lactate dehydrogenase in body fluids; identification of pleural effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

FLUID SODIUM , 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
Clinical usage:	To measure levels of sodium in body fluids; identification of pleural effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

FLUID TRIGLYCERIDE, 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
Clinical usage:	To measure levels of triglyceride in body fluids; identification of pleural effusions
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

FOLATE, Code: FOL

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	Preferably fasting specimen. Protect from light and send to the lab immediately.
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Evaluation of hypothalamic-pituitary-ovarian axis. Investigation of infertility
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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Diagnosis of hyperthyroidism and hypothyroidism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Immunology (ext 2407)

Refer to changes highlighted grey

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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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
Clinical usage:	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:	-
Specimen Stability:	-
Rejection Criteria:	-
Method:	Light microscopy
Clinical usage:	Detection of fungal infection
Reference range:	Negative
Performed:	Office hours only
TAT:	24-48 hours
Section:	Microbiology (ext 2436)

Refer to changes highlighted grey

FUNGAL MICROSCOPY AND CULTURE, Code: FUN

Specimen:	Any (Sterile container)
Collection:	-
Specimen Stability:	-
Rejection Criteria:	-
Method:	Light microscopy & Conventional Culture
Clinical usage:	Detection of fungal infection
Reference range:	Negative
Performed:	Daily
TAT:	4 weeks
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:	Haemolysed or Icteric
Method:	Enzymatic colorimetric (IFCC)
Clinical usage:	Liver profile assessment
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (Ext 2407)

GASTROINTESTINAL PCR, Code: GIP

Specimen:	Stool
Collection:	In Cary Blair transport medium. Do not exceed the maximum filling line indicated on the label.
Specimen Stability:	48 hours- Room temperature (20-25°C)/ 72 hours- Refrigeration (2-8°C)
Rejection Criteria:	Samples not in Cary Blair transport medium
Method:	BioFire FilmArray Torch
Clinical usage:	For the detection and identification of nucleic acids from multiple bacteria, viruses and parasites from individuals with signs and symptoms of gastrointestinal infection.
Reference range:	Not Detected
Performed:	Daily
TAT:	1 day
Section:	Microbiology (ext 2436)

Refer to changes highlighted grey

GENITAL SWAB CULTURE & SENSITIVITY, Code: GSC

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

GENTAMICIN LEVEL (RANDOM), 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:	Grossly haemolysed
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Clinical usage:	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:	Grossly haemolysed
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Clinical usage:	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:	Grossly haemolysed
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Clinical usage:	Therapeutic drug monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

GLOMERULAR FILTRATION RATE, Code: GFR
Note: If serum creatinine was previously ordered, please use add-on test code: EGFRR

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:	Haemolysed or Icteric
Method:	Kinetic Alkaline Picrate
Clinical usage:	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
Clinical usage:	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)

Refer to changes highlighted grey

GLUCOSE FASTING, Code: GLF

Specimen:	Plasma (grey top, 3mL) preferred or serum (SST yellow top, 5mL)
Collection:	Fasting for at least 8 hours and not more than 12 hours
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Grossly haemolysed, not fasting or fasting less than 8 hours
Method:	Hexokinase/G-6-PDH
Clinical usage:	Diagnosis of diabetes mellitus
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
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)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Grossly haemolysed or sample not labelled properly (1st hour) on tube
Method:	Hexokinase/G-6-PDH
Clinical usage:	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)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Grossly haemolysed, sample was taken less than 2 hours or sample not labelled properly (2nd hour) on tube
Method:	Hexokinase/G-6-PDH
Clinical usage:	Diagnosis of diabetes mellitus
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (Ext 2407)

Refer to changes highlighted grey

GLUCOSE RANDOM, Code: GLR

Specimen:	Plasma (grey top, 3mL) preferred or serum (SST yellow top, 5mL)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Grossly haemolysed
Method:	Hexokinase/G-6-PDH
Clinical usage:	Diagnosis of diabetes mellitus
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
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:	Grossly haemolysed, sample not labelled properly (fasting/ 2nd hour) on tubes
Method:	Hexokinase/G-6-PDH (plasma),Glucose oxidase/peroxidase (urine)
Clinical usage:	Diagnosis of diabetes mellitus
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (Ext 2407)

GLUCOSE TOLERANCE TEST (3 SPECIMENS), Code: GTT3

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

Refer to changes highlighted grey

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
Clinical usage:	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:	-
Specimen Stability:	-
Rejection Criteria:	-
Method:	Conventional Gram Stain
Clinical usage:	-
Reference range:	-
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
Clinical usage:	Cardiovascular risk assessment
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

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)
Clinical usage:	Diagnosis of acute or recent hepatitis A infection
Reference range:	Non-reactive
Performed:	Office hours only
TAT:	1-3 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)
Clinical usage:	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:	1-3 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)
Clinical usage:	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)

Refer to changes highlighted grey

HEPATITIS B DNA VIRAL LOAD, Code: HBP1

Specimen:	Plasma (EDTA, purple top, 4 mL)
Collection:	NA
Specimen Stability:	6 days at 2-8°C
Rejection Criteria:	NA
Method:	NAAT
Clinical usage:	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:	Outsource to National Virology Lab
TAT:	14 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)
Clinical usage:	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)
Clinical usage:	Used to detect natural immunity or vaccination to Hepatitis B
Reference range:	$\geq$ 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)

Refer to changes highlighted grey

HEPATITIS C 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)
Clinical usage:	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: HSCRP

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:	Grossly haemolysed
Method:	Turbidimetric/Immunoturbidimetric
Clinical usage:	Detect inflammation and tissue injury
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

HIV 1&2 AG/AB, 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)
Clinical usage:	Determination of HIV p24 antigen and antibodies to HIV -I 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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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)

IMMUNOGLOBULIN G, Code: IGG

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:	Grossly haemolysed
Method:	Immunoturbidimetric
Clinical usage:	Evaluation of humoral immunity
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Investigation of infertility for females
Reference range:	See laboratory report
Performed:	Every Monday and Thursday
TAT:	3 days
Section:	Immunology (ext 2407)

Refer to changes highlighted grey

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:	Haemolysed or Icteric
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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 8-12 hours
Specimen Stability:	7 days at -10°C or colder
Rejection Criteria:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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)

IRON, Code: FE

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:	Haemolysed or Icteric
Method:	Colorimetric with Ferene
Clinical usage:	Evaluation of iron status
Reference range:	See laboratory report
Performed:	Every Tuesday and Friday
TAT:	3 days
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

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:	Haemolysed or Icteric
Method:	Refer to individual test method
Clinical usage:	Evaluation of iron status
Reference range:	See laboratory report
Performed:	Every Tuesday and Friday
TAT:	3 days
Section:	Biochemistry (ext 2407)

INTERNATIONAL NORMALISED RATIO, Code: INR

Specimen:	Plasma (Sodium Citrate, blue top)
Collection:	1.8 ml (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
Clinical usage:	Monitoring of warfarin dosage
Reference range:	See Laboratory Report
Performed:	Daily
TAT:	1 day, STAT
Section:	Haematology (ext 2408)

LACTATE DEHYDROGENASE, Code: LDH

Specimen:	Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL)
Collection:	NA
Specimen Stability:	4 days at 2-8°C
Rejection Criteria:	Haemolysed
Method:	IFCC, lactate to pyruvate
Clinical usage:	Non-specific marker of cellular damage
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

LACTIC ACID/ LACTATE, Code: LAC

Specimen:	Plasma (Sodium fluoride, grey top, 3 mL)
Collection:	Avoid the use of tourniquet if possible and send to the Lab immediately
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	Haemolysed, or specimen was left overnight
Method:	Enzymatic, Lactic acid to pyruvate
Clinical usage:	Evaluation of metabolic and lactic acidosis
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
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 8-12 hours
Specimen Stability:	5 days at 2-8°C
Rejection Criteria:	Haemolysed, Icteric or Lipemic
Method:	Refer to individual test method
Clinical usage:	Diagnosis of hyperlipidemia and cardiovascular risk assessment
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

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:	Haemolysed, Icteric or Lipemic
Method:	Refer to individual test method
Clinical usage:	To detect, evaluate, and monitor liver disease or damage
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Evaluation of hypothalamic-pituitary-ovarian axis. Investigation of infertility
Reference range:	See laboratory report
Performed:	Every Monday and Thursday
TAT:	3 days
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:	Grossly haemolysed
Method:	Enzymatic
Clinical usage:	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
Clinical usage:	Diagnosis and monitoring of hypo- and hypermagnesemia
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

MALARIAL PARASITES, 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
Clinical usage:	Detection and identification of malarial parasites
Reference range:	No malaria parasite detected
Performed:	Daily
TAT:	1 day, STAT
Section:	Haematology (ext 2408)

MENINGITIS/ ENCEPHALITIS 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:	-
Method:	BioFire FilmArray Torch
Clinical usage:	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
Specimen Stability:	2 days at 2-8°C
Rejection Criteria:	Haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Therapeutic Drug Monitoring
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Immunology (ext 2407)

Refer to changes highlighted grey

MISCELLANEOUS CULTURE & SENSITIVITY, Code: RSCM

Specimen:	Miscellaneous Swab (Gel swab), Tissue (Sterile Container)
Collection:	-
Specimen Stability:	Room temperature, 24 hours
Rejection Criteria:	Dry swab, Tissue in formalin, Non-sterile container
Method:	Conventional culture and Gram Stain
Clinical usage:	To detect bacterial infection
Reference range:	-
Performed:	Daily
TAT:	48-72 hours
Section:	Microbiology (ext 2436)

MICROALBUMIN (URINE RANDOM), Code: MAS

Specimen:	Urine (Sterile container)
Collection:	No preservative needed
Specimen Stability:	Assay immediately
Rejection Criteria:	NA
Method:	Turbidimetric/Immunoturbidimetric
Clinical usage:	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
Clinical usage:	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
Clinical usage:	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)

MRSA SWAB CULTURE & SENSITIVITY, Code: *Refer note below*

Specimen:	Any (Gel swab), indicate source of specimen
Collection:	-
Specimen Stability:	Room temperature, 24 hours
Rejection Criteria:	Dry swab, Source of specimen not indicated if more than one swab
Method:	Conventional culture
Clinical usage:	To detect Meticillin-resistant *Staphylococcus aureus*
Reference range:	-
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….)

NEONATAL BILIRUBIN (CONJUGATED & UNCONJUGATED), Code: NBI

Specimen:	Serum (Microtainer SST, 500uL) or plasma (Microtainer Li-Heparin, 500uL)
Collection:	Protect specimens from exposure to light and send to the Lab immediately
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Haemolysed, Lipaemic or Specimen was left overnight
Method:	Diazonium salt
Clinical usage:	Diagnosis of jaundice
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

NOSE SWAB (NASAL CULTURE & SENSITIVITY), Code: RSCN

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

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

Specimen:	Serum (SST, yellow top, 5mL)
Collection:	NA
Specimen Stability:	6 days at 2-8°C
Rejection Criteria:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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, STAT
Section:	Immunology (ext 2407)

OSMOLALITY (SERUM), Code: OSS

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:	Haemolysed or Lipemic
Method:	Freezing point osmometry
Clinical usage:	Assessment of fluid and electrolyte balance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

OSMOLALITY (URINE), Code: UOS

Specimen:	Urine (Sterile container)
Collection:	NA
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	NA
Method:	Freezing point osmometry
Clinical usage:	Assessment of fluid and electrolyte balance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

PARATHYROID HORMONE , Code: PTH

Specimen:	Plasma (K2 EDTA, purple top, 3mL)
Collection:	NA
Specimen Stability:	2 days at 2-8°C
Rejection Criteria:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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:	Grossly haemolysed
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Clinical usage:	Monitoring of phenobarbital
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:	Grossly haemolysed
Method:	Enzyme Immunoassay
Clinical usage:	Monitoring of phenytoin
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:	4 days at 2-8°C
Rejection Criteria:	Haemolysed or Lipemic
Method:	Phosphomolybdate Formation
Clinical usage:	Assessment of calcium and phosphate disorders
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:	2 days at 20-25°C
Rejection Criteria:	NA
Method:	Phosphomolybdate Formation
Clinical usage:	Assessment of calcium and phosphate disorders
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:	2 days at 20-25°C
Rejection Criteria:	NA
Method:	Phosphomolybdate Formation
Clinical usage:	Assessment of calcium and phosphate disorders
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

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:	Haemolysed or specimen was left overnight
Method:	Indirect Ion-selective electrode potentiometry
Clinical usage:	Evaluation / assessment of electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

POTASSIUM (URINE RANDOM), 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
Clinical usage:	Evaluation / assessment of electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
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
Clinical usage:	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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Diagnosis of bacteraemia and septicaemia
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Evaluation of ovarian function. Detect progesterone-secreting tumour
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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Tumour marker for prostate cancer
Reference range:	See laboratory report
Performed:	Daily
TAT:	3 days
Section:	Immunology (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
Clinical usage:	Indicator of renal impairment
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

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
Clinical usage:	Indicator of renal impairment
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
Clinical usage:	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:	Haemolysed
Method:	Colorimetric with Biuret
Clinical usage:	Marker of nutritional status
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

PROTHROMBIN TIME, Code: PT

Specimen:	Plasma (Sodium Citrate, blue top)
Collection:	1.8 ml (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
Clinical usage:	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:	1.8 ml (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
Clinical usage:	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)

PUS SWAB CULTURE & SENSITIVITY, 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
Clinical usage:	Diagnosis of bacterial infection
Reference range:	-
Performed:	Daily
TAT:	48-72 hours
Section:	Microbiology (ext 2436)

Refer to changes highlighted grey

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
Clinical usage:	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)

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:	4 hours – Room temperature (15-25°C)/ 3 days- Refrigeration (2-8°C)/ 30 days – Frozen (≤-15 °C or ≤-70°C)
Rejection Criteria:	-
Method:	BioFire FilmArray Torch
Clinical usage:	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 SPECIMEN CULTURE & SENSITIVITY, Code: RSCS

Specimen:	Sputum, Bronchoalveolar Lavage (BAL), Endotracheal Aspirate (ETA), Nasopharyngeal Aspirate (NPA)
Collection:	-
Specimen Stability:	Room temperature, 24 hours
Rejection Criteria:	Sputum visually salivary
Method:	Conventional culture and Gram Stain
Clinical usage:	Diagnosis of bacterial infection
Reference range:	-
Performed:	Daily
TAT:	48-72 hours
Section:	Microbiology (ext 2436)

Refer to changes highlighted grey

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
Clinical usage:	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 techinque or by electronic blood cell analyser
Clinical usage:	Assessment of erythropoietic activity and evaluation of anemia
Reference range:	See Laboratory Report
Performed:	Daily
TAT:	1 day, STAT
Section:	Haematology (ext 2408)

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:	7 days at 2-8°C
Rejection Criteria:	Haemolysed or Icteric
Method:	See individual test method
Clinical usage:	Renal function test
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

RHEUMATOID FACTOR, Code: RHE

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

RICKETTSIAL SEROLOGY (Weil Felix Screen), Code: RIC

Specimen:	Serum (SST tube, Yellow top, 1 mL)
Collection:	-
Specimen Stability:	2°C to 8°C for 48 hours
Rejection Criteria:	Grossly Haemolysed/ Grossly Lipaemic/Contaminated
Method:	Agglutination
Clinical usage:	Diagnosis of rickettsial infection
Reference range:	Titre < 1:80
Performed:	Office hours only
TAT:	1 day
Section:	Microbiology (ext 2436)

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:	Haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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:	Office hours only
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

RUBELLA IGG, Code: RUG

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)
Clinical usage:	Detection of antibodies and immunity to rubella
Reference range:	≥ 10 mIU/mL indicates evidence of protective immunity either from past infection or vaccination
Performed:	Office hours only
TAT:	7 days
Section:	Virology and Serology (ext 2322)

SALMONELLA TYPHI IgG/IgM, CODE: STGM

Specimen:	Serum or Plasma
Collection:	-
Specimen Stability:	72 hours at 2-8◦C
Rejection Criteria:	Grossly lipaemic
Method:	Immunochromatographic Test
Clinical usage:	Detection of Salmonella typhi IgG and IgM antibodies
Reference range:	Negative
Performed:	Daily
TAT:	STAT or 1 day (Routine)
Section:	Microbiology (ext 2436)

SEMEN CULTURE & SENSITIVITY, Code: SEMEN

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

Refer to changes highlighted grey

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:	Haemolysed
Method:	Indirect Ion-selective electrode potentiometry
Clinical usage:	Evaluation of fluid and electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
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
Clinical usage:	Evaluation of fluid and electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
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
Clinical usage:	Evaluation of fluid and electrolyte imbalance
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

STERILITY TEST (ENVIRONMENTAL), Code: *Refer to note below*

Specimen:	Any (Agar plate)
Collection:	-
Specimen Stability:	-
Rejection Criteria:	-
Method:	Open plate technique/conventional culture
Clinical usage:	Detection of pathogens
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 specimen, code is STER2. And so on and so forth).

SYNOVIAL FLUID for CRYSTAL EXAMINATION, Code: SFC

Specimen:	Synovial Fluid (Sterile container)
Collection:	-
Specimen Stability:	-
Rejection Criteria:	-
Method:	Wet preparation for microscopic analysis
Clinical usage:	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)
Clinical usage:	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)
Clinical usage:	Therapeutic Drug Monitoring for Organ Transplant
Reference range:	See laboratory report
Performed:	Daily, STAT
TAT:	1 day
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:	Haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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:	Grossly haemolysed
Method:	Enzyme Immunoassay
Clinical usage:	Monitoring of theophylline
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

THYROGLOBULIN , Code: THY

Specimen:	Serum (SST, yellow top, 5mL)
Collection:	NA
Specimen Stability:	3 days at 2-8°C
Rejection Criteria:	Grossly haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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 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:	Haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Diagnosis of hyperthyroidism and hypothyroidism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Immunology (ext 2407)

THYROID FUNCTION TEST 2 (TSH & FT4), Code: TFT2

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:	Haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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:	Haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Diagnosis of hyperthyroidism and hypothyroidism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Immunology (ext 2407)

THROAT SWAB (Culture and Sensitivity), Code: RSCT

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

TIP CULTURE & SENSITIVITY, 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:	-
Method:	Conventional culture
Clinical usage:	Diagnosis of bacterial infection
Reference range:	-
Performed:	Daily
TAT:	48-72 hours
Section:	Microbiology (ext 2436)

Refer to changes highlighted grey

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:	Grossly haemolysed
Method:	Immunoturbidimetric
Clinical usage:	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
Clinical usage:	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 8-12 hours
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Haemolysed or Icteric
Method:	Enzymatic with Glycerol Phosphate Oxidase
Clinical usage:	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 grey

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:	Haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	Marker of myocardial injury
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Immunology (ext 2407)

TYPHOID ANTIBODY (Widal test), Code: TYP

Specimen:	Serum (SST tube, Yellow top, 1 mL)
Collection:	-
Specimen Stability:	2°C to 8°C for 48 hours
Rejection Criteria:	Grossly Haemolysed/ Grossly Lipaemic/Contaminated
Method:	Agglutination
Clinical usage:	Diagnosis of *Salmonella* infection
Reference range:	Titre < 1:80
Performed:	Office hours only
TAT:	1 day
Section:	Microbiology (ext 2436)

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:	Grossly haemolysed
Method:	Kinetic
Clinical usage:	Assessment of fluid balance and renal function
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

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
Clinical usage:	Assessment of fluid balance and renal function
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
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
Clinical usage:	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:	Grossly haemolysed
Method:	Enzymatic colorimetric with Uricase
Clinical usage:	Evaluation of uric acid metabolism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

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
Clinical usage:	Evaluation of uric acid metabolism
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
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
Clinical usage:	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:	Random or 24 hours. Preserve 24 hours urine using respective preservatives. See page 16
Specimen Stability:	2 days at room temperature and at 2-8°C
Rejection Criteria:	NA
Method:	Refer to individual test method
Clinical usage:	Evaluation of uric acid metabolism/Indicator of renal impairment
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

Refer to changes highlighted grey

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
Clinical usage:	Qualitative detection of drug abuse
Reference range:	See laboratory report
Performed:	Every Tuesday, Thursday, and Saturday
TAT:	2 days, STAT
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
Clinical usage:	Detection of Bilharzia or helminths in urine
Reference range:	-
Performed:	Office hours only
TAT:	1 day
Section:	Microbiology (ext 2436)

URINE FEME, Code: MU

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:	iRICELL 2000
Clinical usage:	Urine analysis and microscopy
Reference range:	-
Performed:	Daily
TAT:	1 day, STAT
Section:	Microbiology (ext 2436)

Refer to changes highlighted grey

URINE FEME, CULTURE & SENSITIVITY Code: ZUCS

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:	Conventional culture & iRICELL 2000
Clinical usage:	Detection of urinary tract infection
Reference range:	-
Performed:	Daily
TAT:	48-72 hours
Section:	Microbiology (ext 2436)

URINE GLUCOSE, Code: UGLU

Specimen:	Random Urine (Sterile container)
Collection:	A mid-stream urine specimen is recommended
Specimen Stability:	Up to 2 hours at room temperature, up to 24 hours at 2-8°C
Rejection Criteria:	Collection during menstrual periods
Method:	Urine Dipstick (Glucose Oxidase)
Clinical usage:	Screening or management of diabetes mellitus
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day
Section:	Biochemistry (ext 2407)

URINE KETONE, Code: UK

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

Refer to changes highlighted grey

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
Clinical usage:	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:	Grossly haemolysed
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Clinical usage:	Monitoring of Valproate dosage
Reference range:	See laboratory report
Performed:	Daily
TAT:	1 day, STAT
Section:	Biochemistry (ext 2407)

VANCOMYCIN LEVEL (RANDOM), 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:	Haemolysed
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Clinical usage:	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 and send to the Lab immediately
Specimen Stability:	2 days at 2-8°C
Rejection Criteria:	Haemolysed
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Clinical usage:	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 and send to the Lab immediately
Specimen Stability:	2 days at 2-8°C
Rejection Criteria:	Haemolysed
Method:	Particle-enhanced turbidimetric inhibition immunoassay (PETINIA)
Clinical usage:	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:	Protect from light and send to the lab immediately
Specimen Stability:	7 days at 2-8°C
Rejection Criteria:	Haemolysed
Method:	Chemiluminescent Microparticle Immunoassay (CMIA)
Clinical usage:	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 grey

WIDAL/WEIL FELIX, Code: WWF

Specimen:	Serum (SST tube, Yellow top, 2 mL)
Collection:	-
Specimen Stability:	2°C to 8°C for 48 hours
Rejection Criteria:	Grossly Haemolysed/ Grossly Lipaemic/Contaminated
Method:	Agglutination
Clinical usage:	Diagnosis of *Salmonella* and Rickettsial infection
Reference range:	Titre < 1:80
Performed:	Office Hours only
TAT:	1 day
Section:	Microbiology (ext 2436)

WOUND SWAB CULTURE & SENSITIVITY, 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
Clinical usage:	Diagnosis of bacterial infection
Reference range:	-
Performed:	Daily
TAT:	48-72 hours
Section:	Microbiology (ext 2436)

Refer to changes highlighted grey

ANNEX B. 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	Fluid Biochemistry-Protein & Glucose (FLB)	1 hour
	Ammonia (AMON)	1 hour	Fluid Lactate (LACFLU)	1 hour
	Amylase (AMY)	1 hour	Fluid Lactate Dehydrogenase (LDHFLU)	1 hour
	Bicarbonate (HCO3)	1 hour	Fluid Sodium (NAFLU)	1 hour
	Bilirubin-Direct (BILD)	1 hour	Fluid Triglycerides (TGFLU)	1 hour
	Bilirubin-Total (BILT)	1 hour	Gentamicin (GEN/GENP/GENT)	1 hour
	Blood Gas (GAS/VBG)	30 mins	Glucose Fasting (GLF)	1 hour
	Calcium (CA)	1 hour	Glucose Random (GLR)	1 hour
	Carbamazepine (CARB)	1 hour	High Sensitive C-Reactive Protein (HSCRP)	1 hour
	Chloride (CL)	45 mins	Lactic Acid (LAC)	1 hour
	C-Reactive Protein (CRP)	1 hour	Magnesium (MG)	1 hour
	Creatinine (CRT)	45 mins	Osmolality (OSS)	1 hour
	Creatine Kinase (CK)	1 hour	Phenobarbital (PHNO3)	1 hour
	Creatine Kinase-Mb (CMB)	1 hour	Phenytoin (PHNY2)	1 hour
	CSF Albumin (CSFALB)	1 hour	Potassium (POT)	45 mins
	CSF Glucose & Protein (CSFB)	1 hour	Protein (Urine Random) (UTP)	1 hour
	CSF Lactate (CSFLAC)	1 hour	Sodium (NA)	45 mins
	CSF Lactate Dehydrogenase (LDHCSF	1 hour	Theophylline (THE)	1 hour
	Digoxin (DIG)	1 hour	Urea (UR)	45 mins
	Electrolytes, Serum (ELY)	1 hour	Uric Acid (SUA)	1 hour
	Electrolytes Urine Random (ELY2)	1 hour	Urine Drug Screen (UDRUG)	1 hour
	Fluid Albumin (ALBFLU)	1 hour	Valproic Acid (VAL)	1 hour
	Fluid Amylase (FLUAMY)	1 hour	Vancomycin (VAN/VANP/VANT)	1 hour
IMMUNOLOGY	N-Terminal Pro B-Type Natriuretic Peptide (NTPROBNP)	1 hour	Methotrexate (MTX)	1 hour
	Beta HCG Total (QUA)	1 hour	Procalcitonin (PCT)	1 hour
	Cortisol (RCO)	1 hour	Progesterone (PRG)	1 hour
	Cyclosporine (CYCLO)	2 hours	Tacrolimus (TACRO)	2 hours
	Estradiol (E2)	1 hour	Troponin I Hs 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
	Salmonella Typhii (STGM)	2 hours		
VIROLOGY	RSV (< 5 years old)	45 mins	Influenza Antigen	45 mins

ANNEX C. TEST CATALOGUE (OUTSOURCE)

For any outsourced test enquiry (including tests not listed below), please call ext. 2127 **during office hours** only.

Test Name	Test Code	Specimen Requirement	TAT (working days)	Remarks
Alpha 1 Antitrypsin	AAT	8ml GEL Yellow Top	30	
Angiotensin Converting Enzyme	ACE	8ml GEL Yellow Top – Frozen Serum	30	
Adrenocorticotrophic Hormone (ACTH)	ACT	2 x 4ml EDTA (purple) Frozen Plasma	17	
Anti Diuretic Hormone	ADH	2 x 4ml EDTA (purple) Frozen Plasma	30	
Acid Fast Bacili Smear and Culture	AFBCS	Sputum, CSF, Urine or Body Fluid	60	Provide BruHims No.
Anti-Endomysial Ab (IgA)	AEA	8ml GEL Yellow Top	17	
Aldolase (Serum)	ALD	8ml GEL Yellow Top	17	
Aldosterone (Serum)	ALDOS	2 x 4ml EDTA (purple) Frozen Plasma	30	
Anti Mitochondrial Antibodies	AMA	8ml GEL Yellow Top	30	
Anti-Mullerian Hormone	AMH	8ml GEL Yellow Top	10	
Anti Nuclear Antibody	ANAR	8ml GEL Yellow Top	30	Provide BruHims No.
Anti Neutrophil Cytoplasmic Antibody, Myeloperoxidase Antibody, Proteinase 3 Antibody	ANCAR	8ml GEL Yellow Top	30	Provide BruHims No.
Activated Protein C Resistance	APCR	2 x 2.7ml Blue Top (Sodium Citrate) Frozen Plasma	59	
Acetycholinesterase Receptor A	ARA	8ml GEL Yellow Top	30	
Anti Smooth Muscle Antibody	ASM	8ml GEL Yellow Top	17	
Anti Thrombin III	AT3	2 x 2.7ml Blue Top (Sodium Citrate) Frozen Plasma	30	
Beta 2 Microglobulin	BMG	8ml GEL Yellow Top	30	
Beta X Laps (C terminal telopeptide)	BXL	8ml GEL Yellow Top – Frozen Serum	30	
Bone Marrow Examination	BMEXAM	Bone marrow	14	Pre-arrange with Lab (ext 2408)

Test Name	Test Code	Specimen Requirement	TAT (working days)	Remarks
Caeruloplasmin	CAE	8ml GEL Yellow Top	17	
CD-19 (B-Cell) Assay	CD19	2 x Fresh 4ml EDTA (Purple Top)	30	Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM
CD-20 (PAN B) Assay	CD20	2 x Fresh 4ml EDTA (Purple Top)	30	Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM
Chlamydia IgG	CHG	8ml GEL Yellow Top	10	
Chromogranin A	CHGA	8ml GEL Yellow Top	17	Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM
Cytomegalovirus PCR QUALITATIVE	CMVPCR	Fluid, CSF, 4ml Whole Blood (Purple top), or Dry Swab	17	Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM
Cytomegalovirus IgM	CMM1	8ml GEL Yellow Top	10	Provide BruHims No.
Cytomegalovirus IgG	CMG1	8ml GEL Yellow Top	10	Provide BruHims No.
Phospholipid Antibody Screen	CPILAS	2 x 2.7ml Blue Top (Sodium Citrate) Frozen Plasma, AND 1 x 8ml GEL Yellow Top	17	
Cardiolipin Antibodies IgG & IgM	CPIR	8ml GEL Yellow Top	30	Provide BruHims No.
Anti-dsDNA	DNAR	8ml GEL Yellow Top	30	Provide BruHims No.
Epstein Barr Virus VCA IgA (NPC Marker)	EBA	8ml GEL Yellow Top	10	
Epstein Barr Virus EA IgA (NPC)	EBE	8ml GEL Yellow Top	10	
Epstein Barr Virus Ab VCA IgG	EBG	8ml GEL Yellow Top	17	
Epstein Barr Virus Ab VCA IgM	EBM	8ml GEL Yellow Top	17	
Epstein Barr Virus PCR	EBVPCR	2 x Fresh 4ml EDTA (Purple Top)	17	Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM
Extractable Nuclear Antigen	ENA	8ml GEL Yellow Top	17	
Encephalopathy Autoimmune Evaluation	ENS2	8ml GEL Yellow Top	30	
Free PSA & Total PSA	FCA	8ml GEL Yellow Top	17	
Flavivirus RT PCR	FLAVI	2 x 4ml EDTA (purple) Frozen Plasma; OR 1 X CSF Liquid	59	

Test Name	Test Code	Specimen Requirement	TAT (working days)	Remarks
Foundation One Liquid	FM1L	2 x 8ml Streck Tube	30	- Specific Request Form - Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM
First Trimester Screen	FTS	8ml GEL Yellow Top	10	Fill in FTS form*
Glutamic Acid Decarboxylase Ab	GAD	8ml GEL Yellow Top or 8ml Red Top	30	
Gangliosides Profile (GM1, GM2, GM3, GD1a, GD1b, GT1b, GQ1b)	GANG	2ml CSF	17	
Gangliosides Profile (GM1, GM2, GM3, GD1a, GD1b, GT1b, GQ1b)	GM2B	8ml GEL Yellow Top	30	
Drug Confirmation Test	GCMS	20ml Urine Drug	30	
Gene Xpert for Tuberculosis	GENEX	Sputum, Urine, Body fluid or CSF	10	
Growth Hormone	GH	8ml GEL Yellow Top – Frozen Serum	17	
Beta 2 Glycoprotein 1 IgG & IgM	GPITR	8ml GEL Yellow Top	30	Provide BruHims No.
Haptoglobin	HAP	8ml GEL Yellow Top	17	
Haemoglobin Electrophoresis	HBE	8ml GEL Yellow Top, AND 2 x 4ml EDTA(Purple) Whole Blood	10	
Helicobacter Breath Test	HEB	Urea Beath Test Kit (Obtain from Lab)	10	
Helicobacter Pylori IgG	HEL	8ml GEL Yellow Top	10	
Hepatitis B Core IgM	HBC	8ml GEL Yellow Top	7	Provide BruHims No.
Hepatitis B Envelope Antigen	HBX	8ml GEL Yellow Top	7	Provide BruHims No.
Hepatitis B Envelope Antibody	HBY	8ml GEL Yellow Top	7	Provide BruHims No.
Hepatitis C Antibody Confirmation	HCVC	8ml GEL Yellow Top	7	Provide BruHims No.
Hepatitis C RNA (PCR)	HCQ1	2 x 4ml EDTA (purple) Plasma	14-21	Provide BruHims No.
Herpes Simplex I IgG	HG1	8ml GEL Yellow Top	17	
Herpes Simplex II IgG	HG2	8ml GEL Yellow Top	17	
Histology	HIR	Container with 10% buffered formalin	14	Provide BruHims No.
Histology (More than 7 bottles)	HIR2	Container with 10% buffered formalin	14	Provide BruHims No.
HIV-1/2 Antibodies Confirmation	HIC	8ml GEL Yellow Top	7	Provide BruHims No.

Test Name	Test Code	Specimen Requirement	TAT (working days)	Remarks
Human Papillomavirus PCR	HPVPCR	Using specific kit (get the kit from Laboratory)	17	
HRR Blood	HRRB	2 x Fresh 4ml EDTA (Purple Top)	30	Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM
Immunoglobulin IgG, IgM & IgA	EPP	8ml GEL Yellow Top	10	
Babysafe IEM Screening	IEM	Guthrie Card	30	Specific Request Form*
Intrinsic Factor Antibody	IFA	8ml GEL Yellow Top	17	
Immunoglobulin A (IgA)	IGA	8ml GEL Yellow Top	17	
Immunoglobulin E (IgE)	IGE	8ml GEL Yellow Top	17	
Insulin Like Growth Factor (IGF1-Stomatomedic C)	IGF	8ml GEL Yellow Top	30	
Immunoglobulin Subclass IgG4	IGGS4	8ml GEL Yellow Top	30	
Immunoglobulin M (IgM)	IGM	8ml GEL Yellow Top	30	
JAK 2 Mutation	JAK	2 x Fresh 4ml EDTA (Purple Top)	30	- Specific Request Form - Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM
John Cunningham Virus (JCV) PCR	JCVP	2 x Fresh 4ml EDTA (Purple Top) Whole Blood OR 2ml CSF	30	- Specific Request Form - Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM
Levetiracetam (Keppra Level)	KEP	8ml GEL Yellow Top	17	
Blood Ketones (Beta Hydroxybutyrate)	KET	8ml GEL Yellow Top or 8ml Red top	17	
Lamotrigine	LAMO	8ml GEL Yellow Top	30	
Lupus Anti-Coagulant Factor	LAS	2 x 2.7ml Blue Top (Sodium Citrate) Frozen Plasma	30	
Legionella Antigen	LEGU	20ml Random Urine	17	
Leptospirosis IgG	LEPG	8ml GEL Yellow Top	10	

Test Name	Test Code	Specimen Requirement	TAT (working days)	Remarks
Pik3Ca Liquid Biopsy	LBPIK3CA	2 x Streck tube (Obtain from lab)	17	- Specific Request Form - Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM
Leptospirosis Antibody (IgM)	LEPM	8ml GEL Yellow Top	17	
Lithium	LIT	8ml GEL Yellow Top	10	
Lipase	LSE	8ml GEL Yellow Top	17	
Myositis Associated Antibody	MA	8ml GEL Yellow Top	17	
Measles IgM Antibody	MEM	8ml GEL Yellow Top	10	Provide BruHims No.
Measles IgG Antibody	MEG1	8ml GEL Yellow Top	10	Provide BruHims No.
Meliodiosis Antibody IgG	MELG	8ml GEL Yellow Top	30	
Melioidosis Antibody IgM	MELM	8ml GEL Yellow Top	30	
Metanephrine in 24 Hours Urine	MNP	24hr Urine bottle with 30ml 6N HCL	30	
Anti-Myelin Oligodendrocyte Glycoprotein Ab	MOG	8ml GEL Yellow Top	10	
Anti Smooth Muscle, Anti Parietal Cell Ab, Anti Mitochondrial Ab	MSKR	8ml GEL Yellow Top	30	Provide BruHims
Mycobacterium Tuberculosis (QuantiFERON TB Gold)	MTBG	Using specific collection kit: (get the kit from laboratory)	17	Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM
Mumps IgM	MUMM	8ml GEL Yellow Top	10	Provide BruHims No.
Mumps IgG	MUMG1	8ml GEL Yellow Top	10	Provide BruHims No.
Mycoplasma Pneumonia IGM	MYCO	8ml GEL Yellow Top	10	
Mycoplasma Pneumonia Total AB	MYCOAB	8ml GEL Yellow Top	10	
NEURONAL Antigen Profile Immunoblot	NEUROBLOT	8ml GEL Yellow Top	30	Provide BruHims No.
Neuronal Antibodies Extended Panel (12 Abs)	NAEP	8ml GEL Yellow Top Or CSF	30	
NICE BASIC (Non-invasive Prenatal Test)	NICEB	Using specific collection kit: (get the kit from laboratory)	17	- Specific Request Form - Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM

Test Name	Test Code	Specimen Requirement	TAT (working days)	Remarks
NICE EXTENDED (Non-invasive Prenatal Test)	NICEX	Using specific collection kit: (get the kit from laboratory)	17	- Specific Request Form - Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM
NMDA Ab	NMDA	8ml GEL Yellow Top Or 1ml CSF	30	
Aquaporin Antibody	NMO	8ml GEL Yellow Top Or 1ml CSF	30	
Neuron Specific Enolase	NSE	8ml GEL Yellow Top	30	
Down Syndrome (Triple Test)	NTD	8ml GEL Yellow Top (15w0d – 19w6d)	10	
Paraneoplastic Antibodies	PAR	8ml GEL Yellow Top	10	
Personal Cancer Diagnostic Invitae	PCDI	2 x 4ml EDTA Blood (Purple)	30	- Specific Request Form - Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM
Protein Electrophoresis	PES	8ml GEL Yellow Top	30	
Protein C	PTC	2 x 2.7ml Blue Top (Sodium Citrate) Frozen Plasma	17	
Prothrombin Mutation	PTG	2 x 4ml EDTA Blood (Purple)	30	- Specific Request Form - Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM
Protein S	PTS	2 x 2.7ml Blue Top (Sodium Citrate) Frozen Plasma	17	
Renin	REN	2 x 4ml EDTA (purple) -Frozen Plasma	17	
Salicylates	SAL	8ml GEL Yellow Top	30	
SHBG (Sex Hormone Binding Globulin)	SHB	8ml GEL Yellow Top	17	
Stone (Calculi) Analysis	STO	Stone in sterile container	14	
Anti-Titin Antibody	T11	8ml GEL Yellow Top Or 1ml CSF	17	
Testosterone (Free)	TESF	8ml GEL Yellow Top	17	Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM

Test Name	Test Code	Specimen Requirement	TAT (working days)	Remarks
Thalassaemia Studies	THS	8ml GEL Yellow Top, AND 2 x 4ml EDTA (purple)	17	
SurePath PAP Smear	TPP	Using specific kit	14	
Tuberculosis PCR	TBPCR	Sputum, CSF, Urine or Body Fluid	30	Provide BruHims No.
Transglutaminase Antibody (IgA & IgG)	TRANAB	8ml GEL Yellow Top	30	
Toxoplasma IgG	TXG	8ml GEL Yellow Top	17	
Toxoplasma IgM	TXM	8ml GEL Yellow Top	17	
Urine Catecholamines 24 Hrs	UCAT	24hr Urine Bottle with acid (30ml 6N HCL added)	17	
Copper (24hrs Urine)	UCU	24hr Urine Bottle	17	
Urine Cytology	UCYT	20ml random urine	17	Provide BruHims No.
Myoglobin (Urine)	UMYO	20ml random urine	17	
Urine Protein Electrophoresis	UPES	20ml random urine	17	
Urine Porphyrin Profile	UPSG	20ml random urine (wrap in foil and freeze)	17	
Thiamine (Vitamin B1)	VB1	6ml Lithium Heparin (Green Top)	59	
VDRL for CSF	VDRLCSF	2ml CSF Fluid	10	
Urine Vanillylmandelic Acid 24	VMA	24hr Urine Bottle in 20ml 6N HCL	17	
Varicella Zoster IgG	VZG	8ml GEL Yellow Top	7	Provide BruHims No.
Varicella Zoster IgM	VZM	8ml GEL Yellow Top	7	Provide BruHims No.
Ziehl-Neelsen stain	ZN	Any (Sterile container)	7	

* - Call ext 2127 for collection or request form requirement

Refer to changes highlighted grey

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		

Refer to changes highlighted grey

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) ***Send out***		
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 ***Send out***		

Refer to changes highlighted grey

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

Refer to changes highlighted grey

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

Refer to changes highlighted grey

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		

Refer to changes highlighted grey

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

Refer to changes highlighted grey

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: GCCP
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: NCCP
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

Refer to changes highlighted grey

GERM CELL TUMOUR PACKAGE, Code: GCCP

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

Refer to changes highlighted grey

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: LYMCP

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

NCC PACKAGE, Code: NCCP

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

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		
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		
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 grey

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		
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