Jerudong Park Medical Centre

Organization Accredited Joint Commission International









# LABORATORY HANDBOOK

| | |
|---|---|
| **DOCUMENT NUMBER:** | LAB-HB-001/Version 7 |
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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.<br><br>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<br>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<br><br>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<br>Removed tests: Benzodiazepines, High Vaginal Swab C/S, TIBC, UIBC<br>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.<br><br>Removed tests: COVID-19 IgM<br>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<br>Added "Leukodepleted packed cells" under blood products page 24.<br><br>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)<br>Removed tests: COVID-19 IgG, BNP<br>Added new outsourced tests: NICE Basic, NICE Extended, Parathyroid Hormone<br>Revised test info: Widal/Weil Felix, Typhoid antibody, Rickettsial serology, Uric Acid, Amylase, Cryoglobulin Test, outsourced tests |
| 7 | 17/09/2024 | Added Customer Feedback Process. Updated laboratory request form. Updated Sample Transportation. Updated Blood Product request codes.<br>Updated Transfusion Reaction sample requirements. Remove requirement for Blood Bank Request Form for emergency release case.<br>Updated list of STAT tests. Change Blue Top volume requirement to "Up to indicated line on tube".<br><br>Added new tests: Thyroid Autoantibodies, Fluid Chloride, Fluid Creatinine, Fluid Potassium, Fluid Urea, MTB/RIF<br>Removed tests: Glucose Tolerance Tests (3 Specimen), Immunoglobulin G, Thyroid Function Test 2 (TFT2)<br>Revised test info: Arterial/Venous Blood Gas, Diabetic Studies, Glomerular Filtration Rate. Preservative requirement for urine calcium and creatinine |

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

## VISION STATEMENT

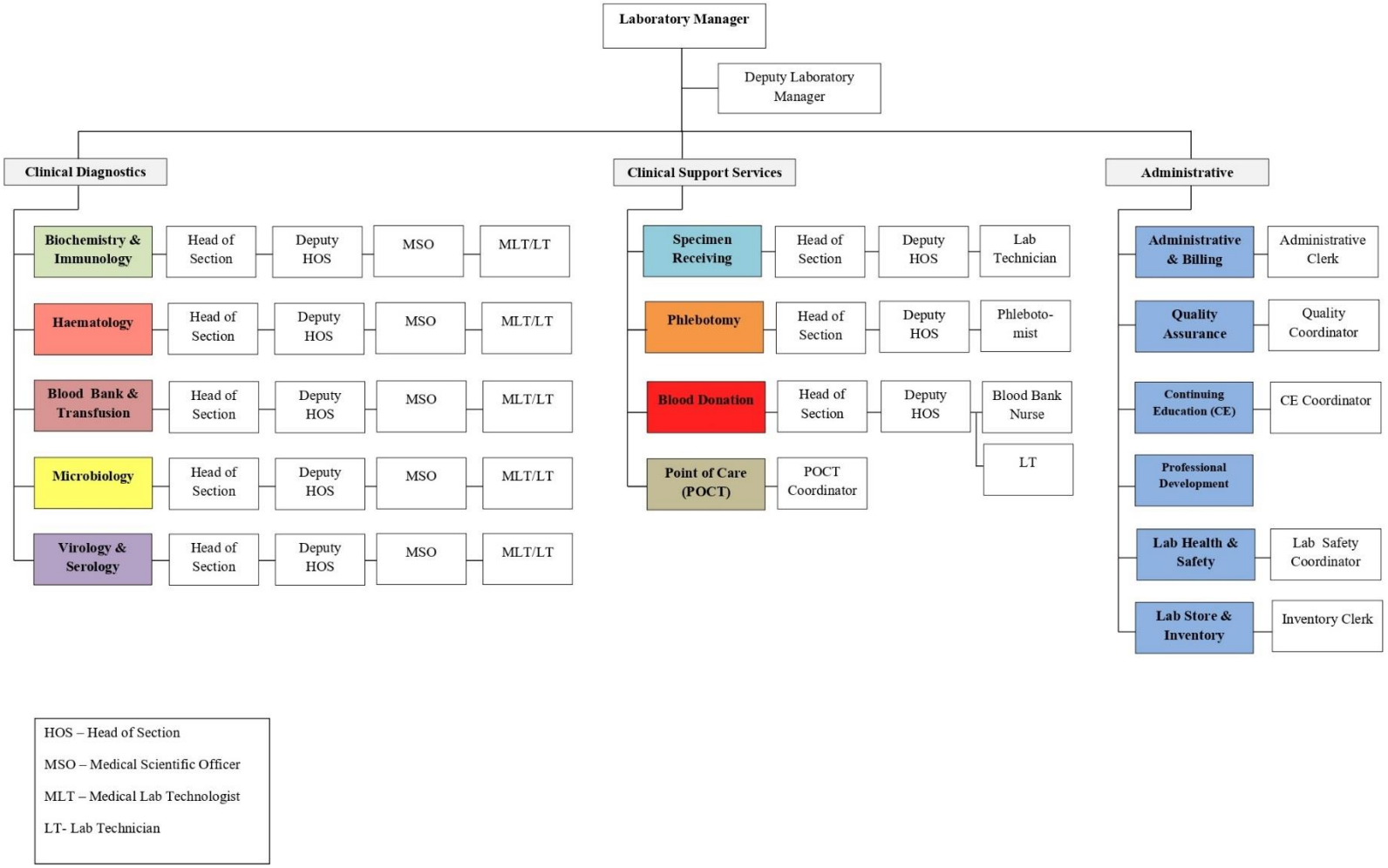
Our department vision is to be the premier provider of medical laboratory services in our community.

## QUALITY ASSURANCE

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

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

# 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<br>01:00PM - 04:00PM |
| FRIDAY | 08:00AM - 12:00PM<br>02:00PM - 05:00PM |
| SATURDAY | 08:00AM - 12:00PM |
| SUNDAY & PUBLIC HOLIDAY | CLOSED |

**PHLEBOTOMY SERVICE (JPMC)**

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

**PHLEBOTOMY SERVICE (PJSC)**

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

For enquiries, we can be reached at:

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

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

## CUSTOMER FEEDBACK PROCESS

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

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

# REQUESTS FOR LABORATORY TESTING

## LABORATORY REQUEST FORM / ONLINE REQUEST

- ✓ It is essential that under all circumstances the request (online and /or via hard copy) be filled out COMPLETELY.
- ✓ The laboratory shall not perform any examination on a specimen without a request form (online or hard copy). **Verbal request is not accepted as an alternative to a request form.**
- ✓ All request details must be filled in and the form MUST clearly show to whom the results are to be reported / communicated to.
- ✓ The ordering physician is responsible for ensuring the following information is entered LEGIBLY and CORRECTLY on the request form:

a. Patient's name
b. Patient's MRN/PRN
c. Patient's identity card no. (IC No)
d. Date and year of birth
e. Sex of patient
f. Ordering location
g. Date and time of specimen collection
h. Specimen type and/or source
i. Name and signature of ordering physician
j. Relevant clinical data and diagnosis
k. Test requests

- ✓ Manual order must be filled using the "LABORATORY REQUEST FORM" for general tests and "MICROBIOLOGY REQUEST FORM" for Microbiology tests.
- ✓ Blood product request form must be filled using the "BLOOD BANK REQUEST FORM".

## URGENT REQUEST

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

## ADD-ON REQUEST

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

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Laboratory Numbers

PRN No.: _____

Name: _____

IC/Passport No.: _____

Sex: _____ DOB: _____

Nationality: _____ Tel: _____

*Please fill in or stick patient's sticker here*

# LAB REQUEST FORM

☐ URGENT ☐ ROUTINE

**REQUESTOR DETAILS**

Requesting Doctor's Name: _____

Clinic / Ward: _____

Tel Number: _____

☐ Appointment Date: _____ (AM/PM)

**SAMPLE DETAILS**

Sampling Date & Time: _____

24 hrs Urine Total Volume: _____ mL

Sample Taken By: _____

☐ Fasting ☐ Non-Fasting

Patient Weight: _____ Kg

Patient Height: _____ Cm

(For creatinine clearance/Paediatric eGFR (<18 y.o.))

**SAMPLE TYPE**

☐ 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

### PACKAGES

**BNSRC PACKAGES**

☐ NSRC1 ☐ NSRC2 ☐ NSRC3

**GJ PACKAGES**

☐ ANGIOGJ ☐ GT5GJ ☐ RFTGJ
☐ GJFRL ☐ GT7GJ
☐ GT1GJ ☐ OHS

**TBCC PACKAGES**

☐ BRCP ☐ LICP ☐ NPC2
☐ COCP ☐ LUCP ☐ PACP
☐ GCCP ☐ LYMCP ☐ PRCP
☐ GYCP ☐ NCCP ☐ TPTPI
☐ HB6 ☐ NPC1 ☐ TPTP2

### PROFILES

☐ ELECTROLYTES (ELY)
☐ ELECTROLYTES, CREATININE AND UREA (ECU)
☐ CARDIAC ENZYMES (CAR)
☐ COAGULATION PROFILE (COP)
☐ LIVER FUNCTION TEST (LFT)
☐ RENAL FUNCTION TEST (RFT)
☐ THYROID FUNCTION TEST (TFT)
☐ GLOMERULAR FILTRATION RATE (GFR)
☐ LIPID STUDIES (LIP)
☐ IRON STUDIES (IS)
☐ URINE DRUG SCREENING (UDRUG)
☐ ARTERIAL BLOOD GAS (GAS)
☐ VENOUS BLOOD GAS (VBG)
☐ PROTEIN/CREATININE RATIO (PCRTR)
☐ ALBUMIN/CREATININE RATIO (ACR)

### SINGLE TESTS

**BIOCHEMISTRY**

☐ ALBUMIN
☐ ALP
☐ ALT
☐ AMIKACIN - PEAK
☐ AMIKACIN - TROUGH
☐ AMMONIA
☐ AMYLASE
☐ AST
☐ BICARBONATE
☐ BILIRUBIN DIRECT
☐ BILIRUBIN TOTAL
☐ C3
☐ C4
☐ CALCIUM
☐ CARBAMAZEPINE
☐ CHLORIDE
☐ CHOLESTEROL
☐ CK
☐ CREATININE
☐ CRP
☐ DIGOXIN
☐ ETHANOL
☐ GENTAMICIN - PEAK
☐ GENTAMICIN - TROUGH
☐ GGT
☐ GLUCOSE - FASTING
☐ GLUCOSE - RANDOM
☐ GLYCATED HAEMOGLOBIN (HBA1C)
☐ IRON
☐ LACTATE
☐ LDH
☐ MAGNESIUM
☐ MICROALBUMIN
☐ OSMOLALITY - BLOOD
☐ OSMOLALITY - URINE
☐ PHENOBARBITAL
☐ PHENYTOIN
☐ PHOSPHATE
☐ POTASSIUM
☐ RHEUMATOID FACTOR
☐ SODIUM
☐ THEOPHYLLINE
☐ TOTAL PROTEIN
☐ TRANSFERRIN
☐ TRIGLYCERIDES
☐ UREA
☐ URIC ACID
☐ VALPROIC ACID
☐ VANCOMYCIN - PEAK
☐ VANCOMYCIN - TROUGH

**IMMUNOLOGY**

☐ AFP
☐ ANTI-CCP
☐ ANTI-THYROGLOBULIN
☐ ANTI-THYROID PEROXIDASE
☐ B12
☐ BETA-HCG
☐ CA 125
☐ CA 153
☐ CA 19-9
☐ CEA
☐ CKMB
☐ CORTISOL
☐ DHEAS
☐ E2
☐ FERRITIN
☐ FOLATE
☐ FSH
☐ FT3
☐ FT4
☐ INSULIN
☐ LH
☐ METHOTREXATE
☐ NT-PROBNP
☐ PARATHYROID HORMONE
☐ PROCALCITONIN
☐ PROGESTERONE
☐ PROLACTIN
☐ TOTAL PSA
☐ TOTAL TESTOSTERONE
☐ THYROGLOBULIN
☐ TROPONIN I
☐ TSH
☐ TSH RECEPTOR ANTIBODY
☐ 25-OH VITAMIN D TOTAL

**HAEMATOLOGY**

☐ ACTIVATED PARTIAL THROMBOPLASTIN TIME
☐ APTT 50% CORRECTION
☐ APTT RATIO (APTT INCLUDED)
☐ BLOOD FILM
☐ D-DIMER
☐ ESR
☐ FBC
☐ FIBRINOGEN
☐ HAEMOGLOBIN
☐ MALARIA SCREEN
☐ MICROFILIARIA SCREEN
☐ PROTHROMBIN TIME
☐ PROTHROMBIN 50% CORRECTION
☐ 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

**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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Jerudong Park Medical Centre
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 : Rec'd by :
Date : Date :
Time : 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.

- ✓ The person collecting the sample is responsible in identifying the patient (using at least TWO IDENTIFIERS: Patient Full Name and Date of Birth) prior to collection.

- ✓ Ensure patient is prepared as per test requirement (e.g. fasting status, specimen collected at timed intervals, medication status). Refer to **Annex A**. Test Catalogue for individual test requirement.

- ✓ When there is deviation to the documented collection procedure (e.g. patient not fasting for fasting glucose test, or blood specimen taken from hematoma site), the deviation must be recorded in the request form or communicated to the laboratory personnel.

- ✓ Ensure specimen collection and transportation supplies are not expired.

- ✓ After specimen collection, dispose all disposable PPE and consumables used into the yellow biohazard waste bag. Dispose sharp items (such as needles) into leak-proof and puncture resistant sharps waste container.

## BLOOD COLLECTION

- ✓ Collect the blood specimen from a vein and avoid prolonged application of tourniquet (must be less than or within 1 minute) to prevent stasis and hemolysis.

- ✓ To Avoid Hemolysis:
  - Ensure alcohol has dried before venipuncture
  - Use the correct needle gauge when collecting blood sample for pediatric patients and for patient with difficult veins
  - Do not mix the blood tubes vigorously
  - Do not collect specimens from veins where administration of fluids will cause abnormal levels of electrolytes, glucose and drugs.
  - Avoid contamination from heparin locks for coagulation test
  - Collect the specimen into the proper tube or container using the correct sequence of draw

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

**PAEDIATRIC PATIENTS**

ORDER OF DRAW

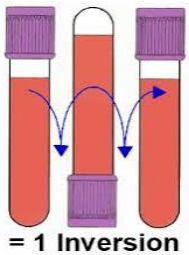
| **CONTAINER** | BLOOD CULTURE  | LIGHT BLUE TOP  | PURPLE MICROTAINER  | GREEN MICROTAINER  | YELLOW MICROTAINER  |
|---|---|---|---|---|---|
| **ADDITIVE** | Bacterial Growth Medium | Sodium citrate | $K_2$ EDTA | Lithium Heparin | Clot Activator |
| **GENTLE MIX BY INVERSION** | 8-10 times | 6-8 times | 10 times | 10 times | 5 times |
| **MINIMUM DRAW VOLUME** | 3 mL | 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 | 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 |

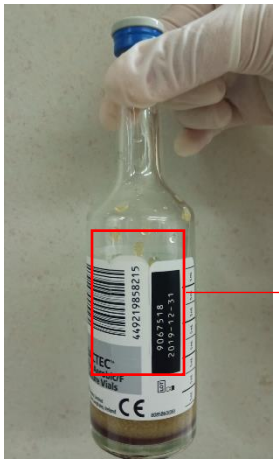
| | | |
|---|---|---|
| | Centrifuging specimen before 30 minutes of collection (before clot formation for SST yellow tubes) | Allow the specimen tube to remain vertical in a rack for a minimum of 30 minutes |
| **Haemolysis/Diluted specimen** | Drawing blood from vascular/peripheral IV line | Pause 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.




◊ 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 | No preservative needed | 20 to 30 mL of 6M HCL |
| Calcium/Creatinine Ratio | No preservative needed | 20 to 30 mL of 6M HCL |
| Magnesium | No preservative needed | 20 to 30 mL of 6M HCL |
| Microalbumin | No preservative needed | 20 to 30 mL of 6M HCL |
| Phosphorus | No preservative needed | 20 to 30 mL of 6M HCL |
| 5 HIAA | NA | 10 mL of 6M HCL (Send Out) |
| Metanephrines | NA | 10 mL of 6M HCL (Send Out) |
| Vanillyl Mandelic Acid Homovanillic Acid | NA | 20 mL of 6M HCL (Send Out) |

A) **Routine or random Specimen:** The patient is given a collection container and instructed to collect a midstream specimen in the container.

B) **First voided Specimen:** First morning specimen or 8-hour specimen. The patient should be instructed to collect the specimen immediately after a night's sleep. The bladder is preferably emptied before sleep.

C) **2-Hours postprandial Specimen:** The patient should be instructed to void shortly before consuming concentrated solution of 50g or 75g glucose or routine meal, and to collect a specimen 2 hours after eating.

D) **Clean-catch midstream Specimen:**

**Patient Instructions: Male**

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

**Patient Instructions: Female**

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

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

E) **24-hour timed urine collection**

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

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

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

◊ Tighten lid securely. Keep upright. Transport in a refrigerated container with requisition form as soon as possible after completion.

◊ If the amount of specimen exceeds the 24-hour urine container, collect the remaining specimen in a sterile collection container and label as “24-HOUR URINE #2”. Note on the request form that 2 containers submitted.

◊ 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.

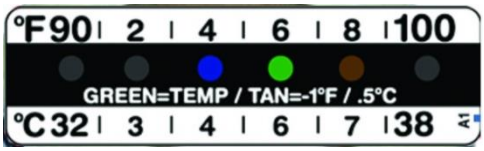
For Malay version of patient instruction, please call extension 2127

**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

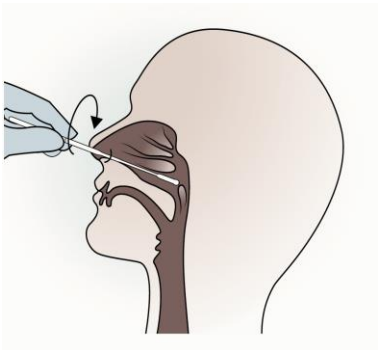
The specimen should be evaluated and recollected if sample appears to be saliva.

- ◊ 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:

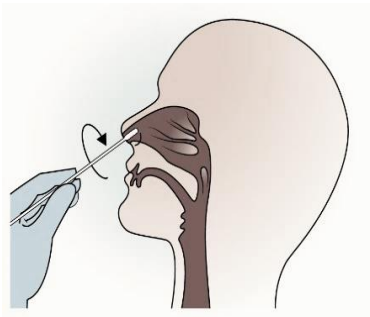
- ◊ Submit three first-morning expectorate sputum samples, collected on three different days. Label the sample accordingly, i.e. "1$^{st}$ Sample (Date: dd/mm/yy)", "2$^{nd}$ Sample (Date: dd/mm/yy)" and "3$^{rd}$ Sample (Date: dd/mm/yy)".
- ◊ At least 3 mL sputum is required for AFB cultures.
- ◊ Refrigerate 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 or at least two identifiers (patient's name, and date of birth or PRN or Doc No.) on all sample containers:

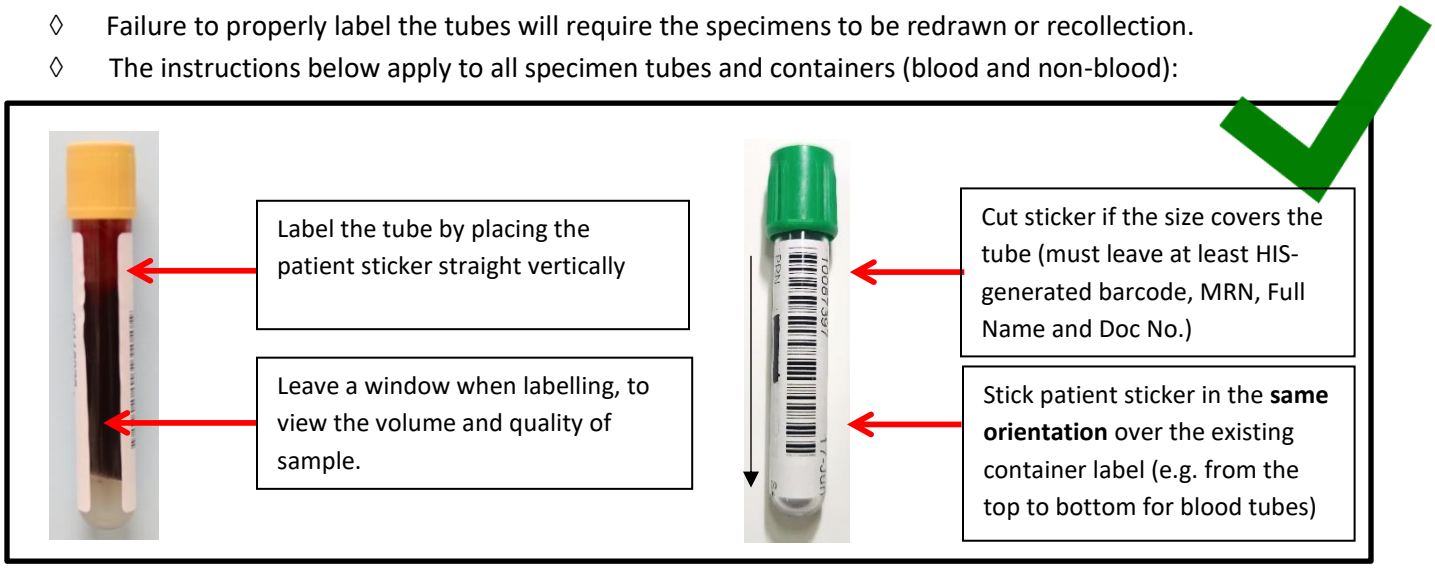
- Patient's name
- Patient's MRN/PRN
- Patient's document number (IC No. or passport)
- Date and year of birth
- Sex of patient
- Computer assigned lab # (if ordered through Vesalius)

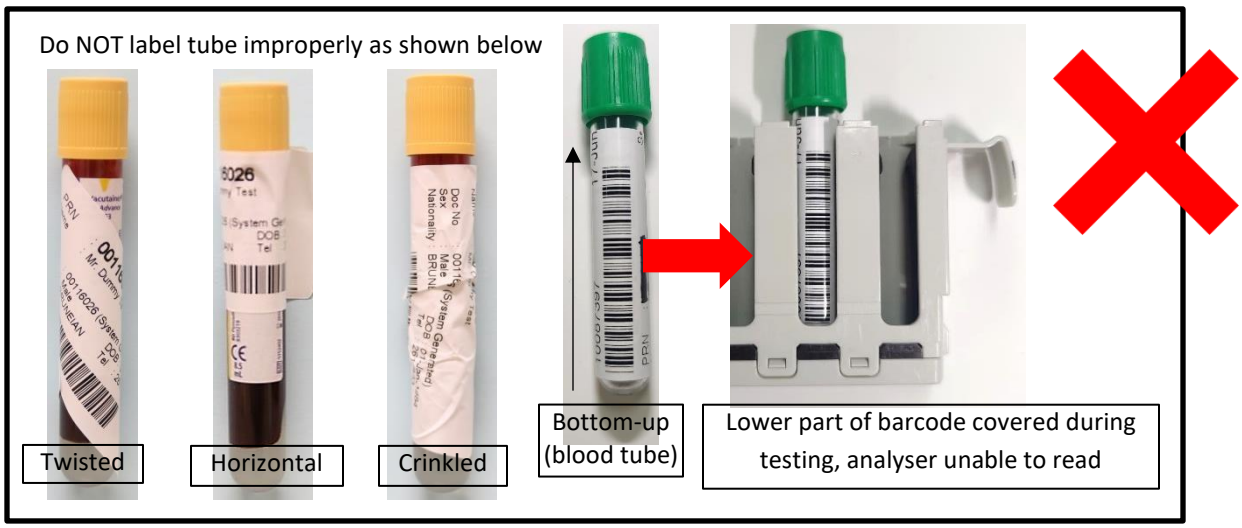
**Indicate source or site of sample if several samples are to be collected, e.g. swabs for culture, tissues**

◊ Label tubes in the presence of the patient and right **after** the collection of the samples. Do not practice pre-labelling of the sample containers or tubes.

◊ Failure to properly label the tubes will require the specimens to be redrawn or recollection.

◊ The instructions below apply to all specimen tubes and containers (blood and non-blood):



# SPECIMEN HANDLING AND TRANSPORT

◊ All **IN HOUSE TEST** description and requirements related to type of blood collection devices, preservatives, sample volumes, etc. of different laboratory tests can be found in the test catalogue.

◊ For any special requests / send out test, or if in doubt for what container to use, please contact or phone the laboratory (office hours) to confirm type of blood container, blood volume, preservative and transport requirements. Microtainer systems are not ideal for send out test, it is available for pediatric and neonatal patient only.

◊ All specimens must be in properly sterile closed/capped container to avoid leakage. All specimen must be handled with care and treated as potentially infectious.

## TRANSPORTATION OF SPECIMEN

◊ Send specimens to the laboratory promptly to maintain their integrity. Unspun or unprocessed (uncentrifuged) blood specimens must be delivered **within 2 hours of collection**. Failure to separate red cells from serum or plasma within 2 hours may result in inaccurate test results.

◊ Do **not** refrigerate unspun blood specimens before transport, as this can lead to elevated potassium levels.

◊ For specimens requiring protection from light, tightly wrap aluminum foil or a paper towel around the tube (but not the stopper). Ensure the tube is shielded from light during storage and transport.

◊ All specimens MUST be placed in sealed biohazard bag(s). Separate different sample types in different biohazard bag.

◊ Place specimen in the Ziploc portion of the specimen bag. Completed request form is to be placed in the outside pocket.

◊ Special requirement for transport can be found in the test catalogue for individual test (e.g. specimen requires chilling for Ammonia test).

◊ If specimen does not have a specific storage requirements, please store at **room temperature** before courier pick-up.

◊ All specimen transported to the laboratory by hand or courier must be transported in sealed biohazard, leak-proof, puncture resistant container tightly closed before transportation.

◊ All specimen transported to the laboratory by pneumatic tube must be cushioned with bubble wrap or any suitable padding inside the carrier capsule. Do **NOT** send blood gas, surgical tissue, body fluids,

bone marrow specimens and amniotic fluid for cytogenetic examination via Pneumatic Tube Systems.

**REJECTION OF SPECIMEN**

◊ JPMC laboratory will reject unacceptable specimen and inform the respective wards or clinics to request for a recollection for the following:

- Mislabeled and Unlabeled specimens
- Insufficient amount for the test requested
- Haemolysed specimens
- Inappropriate specimen container or transport media
- Anticoagulated specimens containing blood clot
- Improper storage or transport requirement
- Discrepancies between requisition form and labeled tube
- Specimen collected at the wrong time (e.g. drug level)
- Specimen contamination or evidence of leakage

**PRECIOUS SPECIMEN**

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

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

# LABORATORY REPORTING

◊ Laboratory results are treated with strict confidentiality. Access to laboratory results is restricted by password use and can only be viewed by the 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 Central Specimen Receiving and Management section at extension 2127.

## CRITICAL RESULTS

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

# CRITICAL RESULT LIST

| BIOCHEMISTRY & IMMUNOLOGY CRITICAL RESULT | | | |
|---|---|---|---|
| **Test** | **Low** | **High** | **Unit** |
| Amikacin | - | > 8 (Trough)<br>> 35 (Peak) | mg/L |
| Bilirubin, total<br>(>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)<br>> 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)<br>> 34.2 (Male) | ng/L |
| Valproic acid | - | > 100 | mg/L |
| Vancomycin | - | > 10 (Trough)<br>> 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, Minimum volume: 1 mL) |
| Collection: | Freshly drawn sample is required<br>**Person collecting the blood must sign/initial and date on the patient sticker on both blood sample and request form** |
| Specimen Stability: | 3 days at 2-8℃. If plasma is separated, then 7 days at 2-8℃. |
| Rejection Criteria: | Grossly haemolysed |
| Method: | Column Agglutination using Ortho Vision System or Semi-Automated Method |
| Useful for: | Performed prior to blood transfusion to determine compatibility between donor's blood and blood of the recipient |
| Performed: | Daily |
| TAT: | 1 hour, STAT – 40 mins, Emergency Release – 10 mins |
| Section: | Blood Transfusion (ext 2320) |

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

◊ To order crossmatch in the electronic system, please insert blood product code and no. of units required. For example:
- To request for 4 units of packed cells, the code is PC4.
- To request for 1 unit of Plateletpheresis, the code is APH1**.**

◊ All blood product requisitions must be ordered and signed by physicians using the BLOOD 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 and ensure that the Vesalius patient sticker with the lab number is pasted on the blood bank request form.

**INVESTIGATION OF ADVERSE TRANSFUSION REACTION**

Specimen: Post-transfusion:
- Plasma (EDTA, Minimum volume: 1 mL)
- Next voided Urine
- Donor's blood bag returned in a biohazard bag
- Transfusion Reaction Notification Form
- Plain/SST Tube (IF requested by the physician for Bilirubin test)
- Blood Culture bottles (Only IF doctor suspects bacterial contamination of blood product).

Rejection Criteria: Haemolysed specimen (a recollection of post-transfusion blood specimen is required to ensure haemolysis is not due to collection procedure)

Method: Perform initial, primary and/or secondary investigation with pre- and post–transfusion patient's sample

Performed: Daily
Analytical Time: STAT

◊ The attending physician or nurse in-charge must immediately inform the Blood Transfusion Section if any transfusion reaction occurs, and transfusion of the blood product must be discontinued if major symptoms are observed. Reconfirm the identification of patient and the blood product infused with the Blood Bank.

◊ Transfusion reactions include:

· Fever without chills (associated with Haemolytic Transfusion Reaction)
· Skin symptoms like hives (urticaria) or itching
· Pain (chest, abdomen and/or flank)
· Acute hypotension or acute hypertension
· Respiratory diseases (dyspnea, tachypnea, wheezing or hypoxemia)
· Nausea and/or vomiting
· Darkened urine or jaundice
· Flushing
· Bleeding
· Anaphylaxis

◊ Obtain post-transfusion samples from the patient immediately (or as soon as possible in the case of urine samples) for workup. Complete a Transfusion Reaction Notification Form with required information. A copy of the form must accompany the samples to the Blood Bank.

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

properly labelled.

◊ Send blood samples, Crossmatch / Component Transfusion form, Transfusion Reaction Notification Form and blood bag with infusion set and tag attached to the Blood Bank.

◊ Do not transfuse any more products until the reaction investigation is completed.

Delayed Transfusion Reaction

◊ Haemolytic transfusion reactions may not be apparent for several days following transfusion. Most common signs are fever, unexpected fall or less than expected rise in haemoglobin, and jaundice.

◊ If any delayed haemolytic transfusion reactions are observed by the nurses, notify the attending physician immediately for any medical treatment necessary for the patient.

◊ A Transfusion Reaction Notification Form must be submitted again to the Blood Bank together with the patient's post-transfusion specimens (1 x EDTA, 50 mL urine).

## EMERGENCY RELEASE OF BLOOD UNITS

| | |
|---|---|
| Specimen: | Plasma (EDTA, Minimum volume: 1 mL) |
| Rejection Criteria: | Grossly haemolysed |
| Method: | Tube method and Ortho Vision system AFTER blood products have been issued |
| Useful for: | For the immediate release of un-crossmatched group 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 Emergency Release of Blood Form specifying blood group (if known) and number of units required. The form must be completely prescribed and signed by the attending physician.

◊ At the same time, the attending staff nurse **must** inform the laboratory of the urgency of blood product/s needed to avoid unnecessary delays.

◊ One EDTA tube of blood must be drawn from the patient and sent down to the laboratory together with all the required forms.

◊ 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) or Plasma (EDTA, purple top, 4mL) |
| Collection: | NA |
| Specimen Stability: | 12 days at 2-8°C |
| Rejection Criteria: | NA |
| Method: | Chemiluminescent Microparticle Immunoassay (CMIA) |
| Useful for: | Diagnosis of Vitamin D deficiency and Hypervitaminosis D |
| Reference range: | See laboratory report |
| Performed: | Every Tuesday and Friday |
| TAT: | 3 days |
| Section: | Immunology (ext 2407) |

**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 |
| Useful for: | 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 |
| Useful for: | 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 specimens, code is STER2. And so on and so forth).* |

*Refer to changes highlighted yellow*

**ACTIVATED PARTIAL THROMBOPLASTIN TIME, Code: APTT**

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

**ACTIVATED PARTIAL THROMBOPLASTIN TIME RATIO, Code: APTTRATIO**

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

**APTT 50% CORRECTION, Code: APT50**

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

**ALANINE AMINOTRANSFERASE (SGPT), Code: ALT**

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

**ALBUMIN, Code: ALB**

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

**ALBUMIN & CREATININE RATIO, Code: ACR**

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

*Refer to changes highlighted yellow*

**ALKALINE PHOSPHATASE, Code: ALP**

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

**ALPHA-FETOPROTEIN, Code: AFP**

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

**AMIKACIN, Code: AMIK**

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

**AMIKACIN LEVEL (PEAK) , Code: AMIKP**

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

**AMIKACIN LEVEL (TROUGH) , Code: AMIKT**

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

**AMMONIA, Code: AMON**

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

*Refer to changes highlighted yellow*

**AMYLASE, Code: AMY**

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

**AMYLASE (URINE RANDOM), Code: UAM**

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

**AMYLASE (24 HOURS URINE), Code: UAM24**

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

**ANTIBODY SCREENING, Code: BAB**
OTHER TEST NAME: INDIRECT ANTIGLOBULIN TEST

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

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

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

**ANTI-THYROGLOBULIN , Code: ATHY**

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

*Refer to changes highlighted yellow*

**ANTI-THYROID PEROXIDASE , Code: TPO**

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

**ANTI-THYROID RECEPTOR ANTIBODY , Code: TRAB**

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

**APT-DOWNEY TEST, Code: APT**

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

**ARTERIAL/VENOUS BLOOD GAS, Code: GAS *(for arterial)*, VBG *(for venous)***

| | |
|---|---|
| Specimen: | Whole blood (Heparinized syringe, 1 mL) |
| Collection: | Do not expose specimen to air and mix well to prevent clotting. Chill specimen on ice and send immediately to lab. Do not send through pneumatic tube. |
| Specimen Stability: | Test immediately |
| Rejection Criteria: | The specimen was neither placed on ice nor sent immediately, evidence of clotting, presence of air bubbles and specimen sent through pneumatic tube. |
| Method: | Abbott i-STAT |
| Useful for: | Aid in diagnosis, monitoring and treatment of respiratory and metabolic acid-base disturbances. |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | STAT |
| Section: | Biochemistry (ext 2407) |

**ASPARTATE AMINOTRANSFERASE (SGOT), Code: AST**

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

**BENCE JONES PROTEIN, Code: BJP**

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

**BICARBONATE, Code: HCO3**

| | |
|---|---|
| Specimen: | Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL) |
| Collection: | Not recommended as add-on as a consequent decrease in the CO2 value of up to 6 mmol/L can occur in an hour once the specimen has been exposed to ambient air. |
| Specimen Stability: | 2 hours at room temperature (Tightly capped) |
| Rejection Criteria: | NA |
| Method: | Enzymatic with PEP Carboxylase |
| Useful for: | Evaluate acid-base imbalances |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (ext 2407) |

**BILIRUBIN-DIRECT, Code: BILD**

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

**BILIRUBIN-TOTAL, Code: BILT**

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

*Refer to changes highlighted yellow*

**BLOOD CULTURE (Aerobic or Anaerobic), Code: BC**

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

**BLOOD CULTURE for PAEDIATRIC (Aerobic) Code: BCP**

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

**BLOOD CULTURE 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 |
| Useful for: | Diagnosis of yeast infection in the blood |
| Reference range: | No growth after 30 days incubation |
| Performed: | Daily |
| TAT: | 30 days |
| Section: | Microbiology (ext 2436) |

*Refer to changes highlighted yellow*

**BLOOD FILM, Code: BF**

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

**BLOOD GROUPING, Code: BG**

| | |
|---|---|
| Specimen: | Whole Blood (EDTA purple top, Minimum volume: 1 mL) |
| Collection: | NA |
| Specimen Stability: | 3 days at 2-8°C |
| Rejection Criteria: | Grossly Haemolysed |
| Method: | Column Agglutination using Ortho Vision System or Manual Tube Method |
| Useful for: | Blood group determination |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Blood Transfusion (ext 2320) |

**CA 125, Code: CA1**

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

*Refer to changes highlighted yellow*

**CA 15-3, Code: CA5**

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

**CA 19-9, Code: CA9**

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

**CALCIUM TOTAL, Code: CA**

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

*Refer to changes highlighted yellow*

**CALCIUM IONISED, Code: CAI**

| | |
|---|---|
| Specimen: | Serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL) |
| Collection: | Send sample immediately to lab. Not recommended for add-on as exposure of sample to air will result in decrease of ionized calcium |
| Specimen Stability: | Test immediately |
| Rejection Criteria: | NA |
| Method: | Ion-selective electrode potentiometric |
| Useful for: | Evaluation of calcium metabolism |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (ext 2407) |

**CALCIUM (URINE RANDOM), Code: UCA**

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

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

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

**CALCIUM (24 HOURS URINE), Code: UCA24**

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

**CALCIUM & CREATININE RATIO (24 HOURS URINE), Code: CCR**

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

**CARBAMAZEPINE, Code: CARB**

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

*Refer to changes highlighted yellow*

**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: | NA |
| Method: | Chemiluminescent Microparticle Immunoassay (CMIA) |
| Useful for: | Tumour marker in colon and pancreatic cancer |
| Reference range: | See laboratory report |
| Performed: | Office hours only |
| TAT: | 2 days |
| Section: | Immunology (ext 2407) |

**CARDIAC ENZYMES, Code: CAR**

*Tests include Creatine Kinase, Lactate Dehydrogenase and Aspartate Aminotransferase*

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

**CHLAMYDIA TRACHOMATIS/NEISSERIA GONORRHOEAE DNA, CODE: CTNG**

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

*Refer to changes highlighted yellow*

**CHLORIDE, Code: CL**

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

**CHLORIDE (URINE RANDOM), Code: UCL**

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

**CHLORIDE (24 HOURS URINE), Code: UCL24**

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

*Refer to changes highlighted yellow*

**CHOLESTEROL TOTAL, Code: CHO**

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

**CLOSTRIDIUM DIFFICILE TOXIN, Code: CDST**

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

**COMPLEMENT C3 , Code: C3**

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

*Refer to changes highlighted yellow*

**COMPLEMENT C4 , Code: C4**

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

**CORTISOL**, **Code: RCO**

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

**CORTISOL (URINE RANDOM)** , **Code: UCO**

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

*Refer to changes highlighted yellow*

**CORTISOL (24 HOURS URINE), Code: UCO24**

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

**C-REACTIVE PROTEIN, Code: CRP**

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

**CREATINE KINASE, Code: CK**

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

*Refer to changes highlighted yellow*

**CREATINE KINASE-MB, Code: CMB**

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

**CREATININE, Code: CRT**

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

**CREATININE (URINE RANDOM), Code: UCRT**

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

*Refer to changes highlighted yellow*

**CREATININE (24 HOURS URINE), Code: UCRT24**

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

**CREATININE CLEARANCE (24 HOURS URINE), Code: CC**

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

**CRYPTOCOCCAL STAIN, Code: CPT**

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

*Refer to changes highlighted yellow*

**CRYOGLOBULIN TEST, Code: CGB**

| | |
|---|---|
| Specimen: | Serum (CAT, Red Top, 5mL) |
| Collection: | Must inform the laboratory a day before testing required.<br>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 |
| Useful for: | To help detect the presence of cryoglobulins in the blood to help determine or rule out potential causes of cryoglobulinemia |
| Reference range: | Negative |
| Performed: | Office hours only |
| TAT: | 3 days from time of collection |
| Section: | Blood Transfusion (ext 2320) |

**CSF ALBUMIN, Code: CSFALB**

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

**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 |
| Useful for: | 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 |
| Useful for: | 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 |
| Useful for: | 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 |
| Useful for: | Assessment of CNS disease and infection |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day, STAT |
| Section: | Biochemistry (ext 2407) |

*Refer to changes highlighted yellow*

**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: | NA |
| Method: | Turbidimetric with Benzethonium Chloride |
| Useful for: | Assessment of CNS disease and infection |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day, STAT |
| Section: | Biochemistry (ext 2407) |

**CSF LACTATE, Code: CSFLAC**

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

**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: | NA |
| Method: | IFCC, Lactate to Pyruvate |
| Useful for: | Assessment of CNS disease and infection |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (ext 2407) |

*Refer to changes highlighted yellow*

**CYCLOSPORINE, Code: CYCLO**

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

**D-DIMER, Code: FDP**

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

**DEHYDROEPIANDROSTERONE SULPHATE, Code: DHEA**

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

*Refer to changes highlighted yellow*

**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 |
| Useful for: | Diagnosis of acute/past dengue infection |
| Reference range: | Negative |
| Performed: | Office hours only |
| TAT: | 1 day |
| Section: | Virology and Serology (ext 2322) |

**DIABETIC SCREEN, Code: DIA**

*Tests include fasting glucose and glycated haemoglobin (HbA1c)*

| | |
|---|---|
| Specimen: | 1) Plasma (Sodium fluoride, grey top, 3mL) for Fasting Glucose<br>2) Whole blood (EDTA, purple top, 3mL) for HbA1c |
| Collection: | Fasting for at least 8 hours |
| Specimen Stability: | 7 days at 2-8°C |
| Rejection Criteria: | Clotted purple top. Not fasting or fasting for less than 8 hours. |
| Method: | Refer to individual test method |
| Useful for: | Diagnosis and monitoring of diabetes mellitus |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (ext 2407) |

*Refer to changes highlighted yellow*

**DIABETIC STUDIES, Code: DST**

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

| | |
|---|---|
| Specimen: | 1) Serum (SST, yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL) for Electrolytes, Urea and Creatinine<br>2) Plasma (Sodium fluoride, grey top, 3mL) for Fasting Glucose<br>3) Whole blood (EDTA, purple top, 3mL) for HbA1c<br>4) Urine (Sterile container) for Urine Microalbumin |
| Collection: | Fasting for at least 8 hours |
| Specimen Stability: | 5 days at 2-8°C |
| Rejection Criteria: | Clotted purple top. Not fasting or fasting for less than 8 hours. |
| Method: | Refer to individual test method |
| Useful for: | Diagnosis and monitoring of diabetes mellitus |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (ext 2407) |

**DIGOXIN, Code: DIG**

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

*Refer to changes highlighted yellow*

**DIRECT COOMB'S TEST, Code: DCT**

OTHER TEST NAME: DIRECT ANTIGLOBULIN TEST

| | |
|---|---|
| Specimen: | Whole Blood (EDTA purple top, Minimum volume: 1 mL ) |
| Collection: | NA |
| Specimen Stability: | 3 days at 2-8°C |
| Rejection Criteria: | Grossly Haemolysed |
| Method: | Tube agglutination |
| Useful for: | Transfusion Reaction Investigation<br>Diagnosis of haemolytic disease of the new born<br>Diagnosis of autoimmune and drug induced haemolytic anemia<br>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, Minimum volume: 1 mL) |
| Collection: | NA |
| Specimen Stability: | 3 days at 2-8°C |
| Rejection Criteria: | Grossly haemolysed |
| Method: | Tube method |
| Useful for: | Automatically performed to verify 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 |
| Useful for: | Diagnosis of bacterial infection |
| Reference range: | - |
| Performed: | Daily |
| TAT: | 48-72 hours |
| Section: | Microbiology (ext 2436) |

*Refer to changes highlighted yellow*

**ELECTROLYTES, Code: ELY**

*Tests include Sodium, Potassium, Chloride*

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

**ELECTROLYTES (URINE RANDOM), Code: ELY2**

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

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

**ELECTROLYTES, CREATININE & UREA, Code: ECU**

*Tests include Sodium, Potassium, Chloride, Creatinine, Urea*

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

*Refer to changes highlighted yellow*

**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 |
| Useful for: | An indicator of the presence and extent of inflammation and its response to treatment |
| Reference range: | Refer Laboratory Report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Haematology (ext 2408) |

**ESTRADIOL, Code: E2**

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

**ETHANOL (BLOOD), Code: ETH**
OTHER TEST NAME: ALCOHOL (BLOOD)

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

*Refer to changes highlighted yellow*

**ETHANOL (URINE), Code: UETH**
OTHER TEST NAME: ALCOHOL (URINE)

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

**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 |
| Useful for: | 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 |
| Useful for: | Detection of blood in stool |
| Reference range: | Negative |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Microbiology (ext 2436) |

*Refer to changes highlighted yellow*

**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 |
| Useful for: | 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 |
| Useful for: | 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 |
| Useful for: | 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 yellow*

**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 |
| Useful for: | Detection of parasites in stool |
| Reference range: | No ova, cysts and parasitic infection |
| Performed: | Daily |
| TAT: | 1 day, STAT |
| Section: | Microbiology (ext 2436) |

**FERRITIN, Code: FER**

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

**FIBRINOGEN LEVEL, Code: FIB**

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

*Refer to changes highlighted yellow*

**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 |
| Useful for: | Identification of fluid effusions |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| 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 |
| Useful for: | Identification of fluid effusions |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| 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 |
| Useful for: | Identification of fluid effusions |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (ext 2407) |

*Refer to changes highlighted yellow*

**FLUID CHLORIDE, Code: CLFLU**

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

**FLUID CREATININE, Code: CRTFLU**

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

**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 |
| Useful for: | Diagnosis of bacterial infection |
| Reference range: | - |
| Performed: | Daily |
| TAT: | 48-72 hours |
| Section: | Microbiology (ext 2436) |

*Refer to changes highlighted yellow*

**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 |
| Useful for: | 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 |
| Useful for: | Identification of fluid effusions |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (ext 2407) |

**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 |
| Useful for: | Identification of fluid effusions |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (ext 2407) |

*Refer to changes highlighted yellow*

**FLUID POTASSIUM, Code: POTFLU**

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

**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 |
| Useful for: | Identification of fluid effusions |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| 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 |
| Useful for: | Identification of fluid effusions |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (ext 2407) |

*Refer to changes highlighted yellow*

**FLUID UREA, Code: URFLU**

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

**FOLATE, Code: FOL**

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

**FOLLICLE STIMULATING HORMONE, Code: FSH**

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

*Refer to changes highlighted yellow*

**FREE THYROXINE (FREE T4), Code: FT4**

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

**FREE TRIIODOTHYRONINE (FREE T3), Code: FT3**

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

**FULL BLOOD COUNT, Code: FBC**

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

*Refer to changes highlighted yellow*

**FUNGAL MICROSCOPY, Code: KOH**

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

**FUNGAL MICROSCOPY AND CULTURE, Code: FUN**

| | |
|---|---|
| Specimen: | Any (Sterile container) |
| Collection: | - |
| Specimen Stability: | - |
| Rejection Criteria: | - |
| Method: | Light microscopy & Conventional Culture |
| Useful for: | 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: | NA |
| Method: | Enzymatic colorimetric (IFCC) |
| Useful for: | Aids in diagnosis and treatment of liver diseases such as cirrhosis, primary and secondary liver tumours. |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (Ext 2407) |

*Refer to changes highlighted yellow*

**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 |
| Useful for: | 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) |

**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 |
| Useful for: | 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: | NA |
| Method: | Particle-enhanced turbidimetric inhibition immunoassay (PETINIA) |
| Useful for: | Therapeutic Drug Monitoring |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day, STAT |
| Section: | Biochemistry (ext 2407) |

*Refer to changes highlighted yellow*

**GENTAMICIN LEVEL (PEAK), Code: GENP**

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

**GENTAMICIN LEVEL (TROUGH), Code: GENT**

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

**GLOMERULAR FILTRATION RATE, Code: GFR**

*Tests include Creatinine and Estimated Glomerular Filtration Rate*

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

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

**GLUCOSE 6-PHOSPHATE DEHYDROGENASE, Code: GPD**

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

**GLUCOSE FASTING, Code: GLF**

| | |
|---|---|
| Specimen: | Plasma (Sodium fluoride, grey top, 3mL) preferred or serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL) |
| Collection: | Fasting for at least 8 hours |
| Specimen Stability: | 7 days at 2-8°C |
| Rejection Criteria: | Not fasting or fasting for less than 8 hours. |
| Method: | Hexokinase/G-6-PDH |
| Useful for: | Diagnosis of diabetes mellitus |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day, STAT |
| Section: | Biochemistry (Ext 2407) |

**GLUCOSE 1 HR. POST PRANDIAL, Code: GLU1**

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

| | |
|---|---|
| Specimen: | Plasma (Sodium fluoride, grey top, 3mL) preferred or 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: | Sample collection time not labelled properly on tube |
| Method: | Hexokinase/G-6-PDH |
| Useful for: | Diagnosis of diabetes mellitus |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (Ext 2407) |

*Refer to changes highlighted yellow*

**GLUCOSE 2 HRS. POST PRANDIAL, Code: GLU2**

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

| | |
|---|---|
| Specimen: | Plasma (Sodium fluoride, grey top, 3mL) preferred or 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: | Sample collection time not labelled properly on tube |
| Method: | Hexokinase/G-6-PDH |
| Useful for: | Diagnosis of diabetes mellitus |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (Ext 2407) |

**GLUCOSE RANDOM, Code: GLR**

| | |
|---|---|
| Specimen: | Plasma (Sodium fluoride, grey top, 3mL) preferred or serum (SST yellow top, 5mL) or plasma (Li-Heparin green top, 4 mL) |
| Collection: | NA |
| Specimen Stability: | 7 days at 2-8°C |
| Rejection Criteria: | NA |
| Method: | Hexokinase/G-6-PDH |
| Useful for: | Diagnosis of diabetes mellitus |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day, STAT |
| Section: | Biochemistry (Ext 2407) |

**GLUCOSE TOLERANCE TEST (2 SPECIMENS), Code: GTT2**

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

*Refer to changes highlighted yellow*

**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.<br>Mix specimen well to avoid clotting |
| Specimen Stability: | 7 days at 2-8°C |
| Rejection Criteria: | Clotted specimen |
| Method: | Enzymatic |
| Useful for: | Long term monitoring of glucose control in diabetes mellitus |
| Reference range: | See laboratory report |
| Performed: | Office hours only |
| TAT: | 1 day |
| Section: | Biochemistry (ext 2407) |

**GRAM STAIN MICROSCOPY, Code: GRAM**

| | |
|---|---|
| Specimen: | Any (Sterile container or Swab) |
| Collection: | - |
| Specimen Stability: | - |
| Rejection Criteria: | - |
| Method: | Conventional Gram Stain |
| Useful for: | - |
| 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 |
| Useful for: | Cardiovascular risk assessment |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (ext 2407) |

*Refer to changes highlighted yellow*

**HEPATITIS A IGM ANTIBODY, Code: HAM**

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

**HEPATITIS A IGG ANTIBODY, Code: HAG**

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

**HEPATITIS B CORE TOTAL ANTIBODY, Code: HBT**

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

*Refer to changes highlighted yellow*

**HEPATITIS B DNA VIRAL LOAD, Code: HBVDNA**

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

**HEPATITIS B SURFACE ANTIGEN, Code: HB1**

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

**HEPATITIS B SURFACE ANTIBODY, Code: HB2**

| | |
|---|---|
| Specimen: | Serum (SST, Yellow top, 5 mL) |
| Collection: | NA |
| Specimen Stability: | 14 days at 2-8°C |
| Rejection Criteria: | NA |
| Method: | Chemiluminescent Microparticle Immunoassay (CMIA) |
| Useful for: | Used to detect natural immunity or vaccination to Hepatitis B |
| Reference range: | $\geq$ 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 yellow*

**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) |
| Useful for: | Detects acute or chronic infection to Hepatitis C<br>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: | NA |
| Method: | Turbidimetric/Immunoturbidimetric |
| Useful for: | A diagnostic indicator of infections and inflammation particularly in paediatric patients and monitoring response to therapy. Useful for risk management of coronary heart disease. |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (ext 2407) |

**HIV 1&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) |
| Useful for: | Determination of HIV p24 antigen and antibodies to HIV -I and HIV - 2<br>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) |

*Refer to changes highlighted yellow*

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

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

**INFERTILITY STUDIES (FEMALE), Code: ISF**

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

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

**INFERTILITY STUDIES (MALE), Code: IFM**

*Tests include FSH, LH, Prolactin and Testosterone*

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

*Refer to changes highlighted yellow*

**INSULIN , Code: INS**

| | |
|---|---|
| Specimen: | Serum (SST, yellow top, 5mL) or Plasma (EDTA, purple top, 4mL) |
| Collection: | Fasting for at least 8 hours. Send the sample to the lab immediately. |
| Specimen Stability: | 7 days at -10°C or colder |
| Rejection Criteria: | Not fasting or fasting for less than 8 hours. |
| Method: | Chemiluminescent Microparticle Immunoassay (CMIA) |
| Useful for: | Aids in diagnosis of diabetes mellitus, differential diagnosis of fasting hypoglycaemia (factitious hypoglycaemia, insulin autoimmune hypoglycaemia and insulinoma) |
| Reference range: | See laboratory report |
| Performed: | Monday & Thursday |
| TAT: | 2-3 days |
| Section: | Immunology (ext 2407) |

**IRON, Code: FE**

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

**IRON STUDIES, Code: IS**

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

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

*Refer to changes highlighted yellow*

**INTERNATIONAL NORMALISED RATIO, Code: INR**

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

**LACTATE DEHYDROGENASE, Code: LDH**

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

**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 within 30 minutes for rapid centrifugation |
| Specimen Stability: | 3 days at room temperature |
| Rejection Criteria: | NA |
| Method: | Enzymatic, Lactic acid to pyruvate |
| Useful for: | Evaluation of metabolic and lactic acidosis |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day, STAT |
| Section: | Biochemistry (ext 2407) |

*Refer to changes highlighted yellow*

**LIPID PROFILE (CORONARY RISK FACTORS), Code: LIP**

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

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

**LIVER FUNCTION TEST, Code: LFT**

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

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

**LUTEINIZING HORMONE, Code: LH**

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

*Refer to changes highlighted yellow*

**MAGNESIUM, Code: MG**

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

**MAGNESIUM (24 HOURS URINE), Code: UMG24**

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

**MALARIAL 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 |
| Useful for: | Detection and identification of malarial parasites |
| Reference range: | No malaria parasite detected |
| Performed: | Daily |
| TAT: | 1 day, STAT |
| Section: | Haematology (ext 2408) |

*Refer to changes highlighted yellow*

**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 |
| Useful for: | For the detection and identification of bacterial, viral, and yeasts nucleic acids from multiple meningitis and encephalitis pathogens |
| Reference range: | Not Detected |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Microbiology (ext 2436) |

**METHOTREXATE, Code: MTX**

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

**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 |
| Useful for: | To detect bacterial infection |
| Reference range: | - |
| Performed: | Daily |
| TAT: | 48-72 hours |
| Section: | Microbiology (ext 2436) |

*Refer to changes highlighted yellow*

**MICROALBUMIN (URINE RANDOM), Code: MAS**

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

**MICROALBUMIN (24 HOURS URINE), Code: UALB24**

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

**MICROFILARIA PARASITES, Code: MFS**

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

*Refer to changes highlighted yellow*

**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 |
| Useful for: | 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….)*

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

| | |
|---|---|
| Specimen: | Sputum (3 mL), or CSF (2 mL) |
| Collection: | Collect in a dedicated sterile screw-capped container, and deliver to the lab immediately |
| Specimen Stability: | Room temperature, 72 hours |
| Rejection Criteria: | - |
| Method: | Xpert MTB/RIF Assay using Real-time Polymerase Chain Reaction |
| Useful for: | Rapid detection of *Mycobacterium tuberculosis* DNA for the diagnosis of pulmonary tuberculosis, and presumptive detection of rifampin resistance based on the presence of resistance-associated mutations<br>**(This test should always be performed in conjunction with mycobacterial culture)** |
| Reference range: | Not Detected |
| Performed: | Office hours only |
| TAT: | 1-3 days |
| Section: | Virology and Serology (ext 2322) |

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

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

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

*Refer to changes highlighted yellow*

**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: | NA |
| Method: | Freezing point osmometry |
| Useful for: | Assessment of fluid and electrolyte balance |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day, STAT |
| Section: | Biochemistry (ext 2407) |

**OSMOLALITY (URINE), Code: UOS**

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

**PARATHYROID HORMONE , Code: PTH**

| | |
|---|---|
| Specimen: | Plasma (EDTA, purple top, 4mL) or plasma (Li-Heparin green top, 4 mL) |
| Collection: | NA |
| Specimen Stability: | 2 days at 2-8°C |
| Rejection Criteria: | NA |
| Method: | Chemiluminescent Microparticle Immunoassay (CMIA) |
| Useful for: | 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) |

*Refer to changes highlighted yellow*

**PHENOBARBITAL, Code: PHNO3**

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

**PHENYTOIN, Code: PHNY2**

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

**PHOSPHATE/PHOSPHORUS, Code: PO4**

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

*Refer to changes highlighted yellow*

**PHOSPHATE/PHOSPHORUS (URINE RANDOM), Code: UPO4**

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

**PHOSPHATE/PHOSPHORUS (24 HOURS URINE), Code: UPO424**

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

**POTASSIUM, Code: POT**

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

*Refer to changes highlighted yellow*

**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 |
| Useful for: | 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 |
| Useful for: | Evaluation / assessment of electrolyte imbalance |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (ext 2407) |

**PROCALCITONIN, Code: PCT**

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

*Refer to changes highlighted yellow*

**PROGESTERONE, Code: PRG**

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

**PROLACTIN, Code: PRL**

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

**PROSTATE-SPECIFIC ANTIGEN TOTAL, Code: PSA**

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

*Refer to changes highlighted yellow*

**PROTEIN (URINE RANDOM), Code: UTP**

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

**PROTEIN (24 HOURS URINE), Code: UTP24**

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

**PROTEIN CREATININE RATIO, Code: PCRTR**

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

*Refer to changes highlighted yellow*

**PROTEIN TOTAL, Code: TP**

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

**PROTHROMBIN TIME, Code: PT**

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

**PT 50% CORRECTION, Code: PT50**

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

*Refer to changes highlighted yellow*

**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 |
| Useful for: | Diagnosis of bacterial infection |
| Reference range: | - |
| Performed: | Daily |
| TAT: | 48-72 hours |
| Section: | Microbiology (ext 2436) |

**RAPID PLASMA REAGIN, Code: RPR**

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

**RENAL FUNCTION TEST, Code: RFT**

*Tests include Electrolytes, Urea, Creatinine and Uric Acid*

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

*Refer to changes highlighted yellow*

**RESPIRATORY PCR PANEL, Code: RP**

| | |
|---|---|
| Specimen: | Nasopharyngeal swab (NPS) |
| Collection: | Immediately place swab in the medium provided<br>Minimum volume – 0.3 mL (300 µL) |
| Specimen Stability: | 4 hours – Room temperature (15-25°C)/ 3 days- Refrigeration (2-8°C)/<br>30 days – Frozen (≤-15 °C or ≤-70°C) |
| Rejection Criteria: | - |
| Method: | BioFire FilmArray Torch |
| Useful for: | For qualitative detection and identification of multiple respiratory viral and bacterial nucleic acids in nasopharyngeal swabs (NPS) obtained from individuals suspected of respiratory tract infections |
| Reference range: | Not Detected |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Microbiology (ext 2436) |

**RESPIRATORY 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 |
| Useful for: | Diagnosis of bacterial infection |
| Reference range: | - |
| Performed: | Daily |
| TAT: | 48-72 hours |
| Section: | Microbiology (ext 2436) |

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

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

*Refer to changes highlighted yellow*

**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 |
| Useful for: | Assessment of erythropoietic activity and evaluation of anemia |
| Reference range: | See Laboratory Report |
| Performed: | Daily |
| TAT: | 1 day, STAT |
| Section: | Haematology (ext 2408) |

**RHEUMATOID FACTOR, Code: RHE**

| | |
|---|---|
| Specimen: | Serum (SST yellow top, 5mL) |
| Collection: | NA |
| Specimen Stability: | 2 days at 2-8°C |
| Rejection Criteria: | NA |
| Method: | Turbidimetric/Immuoturbidimetric |
| Useful for: | 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 |
| Useful for: | Diagnosis of rickettsial infection |
| Reference range: | Titre < 1:80 |
| Performed: | Office hours only |
| TAT: | 1 day |
| Section: | Microbiology (ext 2436) |

*Refer to changes highlighted yellow*

**RISK STRATIFICATION USING TROPONIN-I, Code: RISK**

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

**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) |
| Useful for: | 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: | 7-14 days |
| Section: | Virology and Serology (ext 2322) |

**SALMONELLA TYPHI IgG/IgM, CODE: STGM**

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

*Refer to changes highlighted yellow*

**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 |
| Useful for: | Diagnosis of bacterial infection |
| Reference range: | - |
| Performed: | Daily |
| TAT: | 48-72 hours |
| Section: | Microbiology (ext 2436) |

**SODIUM, Code: NA**

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

**SODIUM (URINE RANDOM), Code: UNA**

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

**SODIUM (24 HOURS URINE), Code: UNA24**

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

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

| | |
|---|---|
| Specimen: | Any (Agar plate) |
| Collection: | - |
| Specimen Stability: | - |
| Rejection Criteria: | - |
| Method: | Open plate technique/conventional culture |
| Useful for: | 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 |
| Useful for: | Detection of crystals and specific infections |
| Reference range: | - |
| Performed: | Office hours only |
| TAT: | 1 day |
| Section: | Microbiology (ext 2436) |

**SYPHILIS SCREENING, Code: SYP**

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

**TACROLIMUS, Code: TACRO**

| | |
|---|---|
| Specimen: | Whole blood (EDTA, purple top, 3mL). |
| Collection: | NA |
| Specimen Stability: | 7 days at 2-8°C |
| Rejection Criteria: | NA |
| Method: | Chemiluminescent Microparticle Immunoassay (CMIA) |
| Useful for: | Therapeutic Drug Monitoring for Organ Transplant |
| Reference range: | See laboratory report |
| Performed: | Daily, 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: | NA |
| Method: | Chemiluminescent Microparticle Immunoassay (CMIA) |
| Useful for: | Evaluation of subfertility in males; hirsutism and virilisation in females |
| Reference range: | See laboratory report |
| Performed: | Every Monday and Thursday |
| TAT: | 3 days |
| Section: | Immunology (ext 2407) |

*Refer to changes highlighted yellow*

**THEOPHYLLINE, Code: THE**

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

**THYROGLOBULIN , Code: THY**

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

**THYROID AUTOANTIBODIES, Code: THA**

*Tests include Anti-Thyroid Receptor Antibody, Anti-Thyroid Peroxidase, Anti-Thyroglobulin*

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

*Refer to changes highlighted yellow*

**THYROID FUNCTION TEST, Code: TFT**

*Tests include FT4, FT3 and Thyroid Stimulating Hormone*

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

**THYROID STIMULATING HORMONE, Code: TSH**

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

**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 |
| Useful for: | Diagnosis of bacterial infection |
| Reference range: | - |
| Performed: | Daily |
| TAT: | 48-72 hours |
| Section: | Microbiology (ext 2436) |

*Refer to changes highlighted yellow*

**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 |
| Useful for: | Diagnosis of bacterial infection |
| Reference range: | - |
| Performed: | Daily |
| TAT: | 48-72 hours |
| Section: | Microbiology (ext 2436) |

**TRANSFERRIN, Code: TRANS**

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

**TREPONEMA PALLIDUM PARTICLE AGGLUTINATION, Code: TPA**

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

*Refer to changes highlighted yellow*

**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: | NA |
| Method: | Enzymatic with Glycerol Phosphate Oxidase |
| Useful for: | Diagnosis of hyperlipidemia and cardiovascular risk assessment |
| Reference range: | See laboratory report |
| Performed: | Daily |
| TAT: | 1 day |
| Section: | Biochemistry (ext 2407) |

**TROPONIN-I HIGH SENSITIVE STAT, Code: TRO**

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

**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 |
| Useful for: | Diagnosis of *Salmonella* infection |
| Reference range: | Titre < 1:80 |
| Performed: | Office hours only |
| TAT: | 1 day |
| Section: | Microbiology (ext 2436) |

*Refer to changes highlighted yellow*

**UREA, Code: UR**

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

**UREA (URINE RANDOM), Code: URU**

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

**UREA (24 HOURS URINE), Code: URU24**

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

*Refer to changes highlighted yellow*

**URIC ACID, Code: SUA**

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

**URIC ACID (URINE RANDOM), Code: UUA**

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

**URIC ACID (24 HOURS URINE), Code: UUA24**

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

*Refer to changes highlighted yellow*

**URIC ACID/CREATININE RATIO, Code: UUACRTR**

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

**URINE DRUG SCREEN, Code: UDRUG**

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

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

**URINE (Bilharzia/Helminths), Code: UBH**

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

*Refer to changes highlighted yellow*

**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 |
| Useful for: | Urine analysis and microscopy |
| Reference range: | - |
| Performed: | Daily |
| TAT: | 1 day, STAT |
| Section: | Microbiology (ext 2436) |

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

*Refer to changes highlighted yellow*

**URINE KETONE, Code: UK**

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

**URINE RED CELL MORPHOLOGY, Code: RCM**

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

**VALPROIC ACID, Code: VAL**

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

*Refer to changes highlighted yellow*

**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: | NA |
| Method: | Particle-enhanced turbidimetric inhibition immunoassay (PETINIA) |
| Useful for: | Therapeutic Drug Monitoring |
| Reference range: | NA |
| Performed: | Daily |
| TAT: | 1 day, STAT |
| Section: | Biochemistry (ext 2407) |

**VANCOMYCIN LEVEL (PEAK), Code: VANP**

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

**VANCOMYCIN LEVEL (TROUGH), Code: VANT**

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

*Refer to changes highlighted yellow*

**VITAMIN B12, Code: B12**

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

**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 |
| Useful for: | 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 |
| Useful for: | Diagnosis of bacterial infection |
| Reference range: | - |
| Performed: | Daily |
| TAT: | 48-72 hours |
| Section: | Microbiology (ext 2436) |

*Refer to changes highlighted yellow*

# 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 | Neonatal Bilirubin (NBI) | 1 hour |
| | Blood Gas (GAS/VBG) | 30 mins | Osmolality (OSS) | 2 hours |
| | Calcium (CA) | 1 hour | Phenobarbital (PHNO3) | 1 hour |
| | Carbamazepine (CARB) | 1 hour | Phenytoin (PHNY2) | 1 hour |
| | Chloride (CL) | 45 mins | Potassium (POT) | 45 mins |
| | Creatinine (CRT) | 45 mins | Protein (Urine Random) (UTP) | 1 hour |
| | Creatine Kinase (CK) | 1 hour | Sodium (NA) | 45 mins |
| | Digoxin (DIG) | 1 hour | Theophylline (THE) | 1 hour |
| | Gentamicin (GEN/GENP/GENT) | 1 hour | Urea (UR) | 45 mins |
| | Glucose Fasting (GLF) | 1 hour | Uric Acid (SUA) | 45 mins |
| | Lactic Acid (LAC) | 1 hour | Valproic Acid (VAL) | 1 hour |
| | Magnesium (MG) | 1 hour | Vancomycin (VAN/VANP/VANT) | 1 hour |
| **IMMUNOLOGY** | N-Terminal Pro B-Type Natriuretic Peptide (NTPROBNP) | 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 |
| **VIROLOGY** | RSV (< 5 years old) | 40 mins | Influenza Antigen | 40 mins |

*Refer to changes highlighted yellow*

# 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 |
|---|---|---|---|---|
| Acetoacetate (Ketone) | KET | 2x 4ml EDTA (whole blood) | 30 | |
| Acetycholinesterase Receptor A | ARA | 8ml GEL Yellow Top | 30 | |
| Acid Fast Bacili Smear and Culture | AFBCS | Sputum, CSF, Urine or Body Fluid | 60 | Provide BruHims No. |
| Activated Protein C Resistance | APCR | 2 x 2.7ml Blue Top (Sodium Citrate) Frozen Plasma | 59 | |
| Adrenocorticotrophic Hormone (ACTH) | ACT | 2 x 4ml EDTA (purple) Frozen Plasma | 17 | |
| Mycobacterium Tuberculosis Quantiferon TB Gold | MTBG | Using specific collection kit: (Obtain from Lab) | 17 | -Specific Request Form<br>-Sample must be collected and send to Lab: Monday until Friday before 09:30AM |
| Aldolase (Serum) | ALD | 8ml GEL Yellow Top | 17 | |
| Aldosterone (Serum) | ALDOS | 2 x 4ml EDTA (purple) Frozen Plasma | 30 | |
| Alpha 1 Antitrypsin | AAT | 8ml GEL Yellow Top | 30 | |
| Angiotensin Converting Enzyme | ACE | 8ml GEL Yellow Top – Frozen Serum | 30 | |
| Anti Diuretic Hormone | ADH | 2 x 4ml EDTA (purple) Frozen Plasma | 30 | |
| Anti Mitochondrial Antibodies | AMA | 8ml GEL Yellow Top | 30 | |
| Anti Neutrophil Cytoplasmic Antibody, Myeloperoxidase Antibody, Proteinase 3 Antibody | ANCAR | 8ml GEL Yellow Top | 30 | Provide BruHims No. |
| Anti Nuclear Antibody | ANAR | 8ml GEL Yellow Top | 30 | Provide BruHims No. |
| Anti Smooth Muscle Antibody | ASM | 8ml GEL Yellow Top | 17 | |
| Anti Smooth Muscle, Anti Parietal Cell Ab, Anti Mitochondrial Ab | MSKR | 8ml GEL Yellow Top | 30 | Provide BruHims No. |

*Refer to changes highlighted yellow*

| Test Name | Test Code | Specimen Requirement | TAT (working days) | Remarks |
|---|---|---|---|---|
| Anti Thrombin III | AT3 | 2 x 2.7ml Blue Top (Sodium Citrate) Frozen Plasma | 30 | |
| Anti-dsDNA | DNAR | 8ml GEL Yellow Top | 30 | Provide BruHims No. |
| Anti-Endomysial Ab (IgA) | AEA | 8ml GEL Yellow Top | 17 | |
| Anti-mullerian hormone | AMH | 8ml GEL Yellow Top | 10 | Preferably Monday until Thursday |
| Anti-Myelin Oligodendrocyte Glycoprotein Ab | MOG | 8ml GEL Yellow Top | 10 | |
| Anti-Titin Antibody | T11 | 8ml GEL Yellow Top Or 1ml CSF | 17 | |
| Aquaporin Antibody | NMO | 8ml GEL Yellow Top Or 1ml CSF | 30 | |
| Babysafe IEM Screening | IEM | Guthrie Card | 30 | Specific Request Form* |
| Beta 2 Glycoprotein 1 IgG & IgM | GPITR | 8ml GEL Yellow Top | 30 | Provide BruHims No. |
| 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) |
| BRCA 1,2, PTEN & p53 Germline(Blood) | BRCAB | 2 x 4ml EDTA Blood (Purple) | 30 | -Specific Request Form<br>-Sample must be collected and send to Lab: Monday, Tuesday or Thursday before 09:30AM |
| Caeruloplasmin | CAE | 8ml GEL Yellow Top | 17 | |
| Calcitonin | CLT | 8ml GEL Yellow Top (frozen serum) | 30 | |
| Cardiolipin Antibodies IgG & IgM | CPIR | 8ml GEL Yellow Top | 30 | Provide BruHims No. |
| 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 | |

*Refer to changes highlighted yellow*

| Test Name | Test Code | Specimen Requirement | TAT (working days) | Remarks |
|---|---|---|---|---|
| Chromogranin A | CHGA | 8ml GEL Yellow Top | 17 | Sample must be collected and send to Lab: Monday, Tuesday or Thursday before 09:30AM |
| Chromosome Analysis (Blood) | CHB | 8ml LITHIUM HEPARIN (green) | 17 | -Specific Request Form<br>-Sample must be collected and send to Lab: Monday, Tuesday or Thursday before 09:30AM |
| Clopidogrel (CYP2C19) | CYP2 | 2 x 4ml EDTA Blood (Purple) | 17 | Sample must be collected and send to Lab: Monday, Tuesday or Thursday before 09:30AM |
| Copper (24hrs Urine) | UCU | 24hr Urine Bottle | 17 | |
| C-Peptide | CPP | 8ml GEL Yellow Top | 17 | |
| Cytomegalovirus IgG | CMG1 | 8ml GEL Yellow Top | 10 | Provide BruHims No. |
| Cytomegalovirus IgM | CMM1 | 8ml GEL Yellow Top | 10 | Provide BruHims No. |
| 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 |
| Down Syndrome (Triple Test) | NTD | 8ml GEL Yellow Top (15w0d – 19w6d) | 10 | |
| Drug Confirmation Test | GCMS | 20ml Urine Drug | 30 | |
| Encephalopathy Autoimmune Evaluation | ENS2 | 8ml GEL Yellow Top | 30 | |
| Epidermal Growth Factor Receptor Mutation (Blood) | EGFR | 2x8ml cell streak tube (Obtain from Lab) | 30 | -Specific Request Form<br>-Sample must be collected and send to Lab: Monday, Tuesday or Thursday before 09:30AM |
| 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 EA IgA (NPC) | EBE | 8ml GEL Yellow Top | 10 | |
| 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 |
| Epstein Barr Virus VCA IgA (NPC Marker) | EBA | 8ml GEL Yellow Top | 10 | |

*Refer to changes highlighted yellow*

| Test Name | Test Code | Specimen Requirement | TAT (working days) | Remarks |
|---|---|---|---|---|
| Extractable Nuclear Antigen | ENA | 8ml GEL Yellow Top | 17 | |
| Factor 8 | F8 | 2 x 2.7ml Blue Top (Sodium Citrate) Frozen Plasma | 30 | |
| Factor 9 | F9 | 2 x 2.7ml Blue Top (Sodium Citrate) Frozen Plasma | 30 | |
| First Trimester Screen | FTS | 8ml GEL Yellow Top | 10 | Specific Request Form |
| Flavivirus RT PCR | FLAVI | 2 x 4ml EDTA (purple) Frozen Plasma; OR<br>1 X CSF Liquid | 59 | |
| Foundation One Liquid | FM1L | 2 x 8ml Streck Tube | 30 | - Specific Request Form<br>- Sample must be collected and send to Lab: Monday, Tuesday or Thursday before 09:30AM |
| Free PSA & Total PSA | FCA | 8ml GEL Yellow Top | 17 | |
| 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 | |
| Glutamic Acid Decarboxylase Ab | GAD | 8ml GEL Yellow Top or 8ml Red Top | 30 | |
| Growth Hormone | GH | 8ml GEL Yellow Top – Frozen Serum | 17 | |
| Haemoglobin Electrophoresis | HBE | 8ml GEL Yellow Top, AND<br>2 x 4ml EDTA(Purple) Whole Blood | 10 | |
| Haptoglobin | HAP | 8ml GEL Yellow Top | 17 | |
| 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 Antibody | HBY | 8ml GEL Yellow Top | 7 | Provide BruHims No. |
| Hepatitis B Envelope Antigen | HBX | 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. |

*Refer to changes highlighted yellow*

| Test Name | Test Code | Specimen Requirement | TAT (working days) | Remarks |
|---|---|---|---|---|
| Hepatitis E Antibodies IgG | HEG | 8ml GEL Yellow Top | 17 | |
| Hepatitis E Antibodies IgM | HEM | 8ml GEL Yellow Top | 17 | |
| Herpes Simplex I IgG | HG1 | 8ml GEL Yellow Top | 17 | |
| Herpes Simplex II IgG | HG2 | 8ml GEL Yellow Top | 17 | |
| Herpes Simplex Type 1 and 2 (IgM) | HM12 | 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. |
| 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 |
| Human Papillomavirus PCR | HPVPCR | Using specific kit (get the kit from Laboratory) | 17 | |
| Immunoglobulin A (IgA) | IGA | 8ml GEL Yellow Top | 17 | |
| Immunoglobulin E (IgE) | IGE | 8ml GEL Yellow Top | 17 | |
| Immunoglobulin IgG, IgM & IgA | EPP | 8ml GEL Yellow Top | 10 | |
| Immunoglobulin M (IgM) | IGM | 8ml GEL Yellow Top | 30 | |
| Immunoglobulin Subclass IgG4 | IGGS4 | 8ml GEL Yellow Top | 30 | |
| Insulin Like Growth Factor (IGF1-Stomatomedic C) | IGF | 8ml GEL Yellow Top | 30 | |
| Intrinsic Factor Antibody | IFA | 8ml GEL Yellow Top | 17 | |
| JAK 2 Mutation | JAK | 2 x Fresh 4ml EDTA (Purple Top) | 30 | - Specific Request Form<br>- 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<br>- Sample must be collected and send to Lab: Monday, Tuesday or Thursday before 09:30AM |

*Refer to changes highlighted yellow*

| Test Name | Test Code | Specimen Requirement | TAT (working days) | Remarks |
|---|---|---|---|---|
| KRAS & NRAS Mutation (Blood) | KNRAS | 2x8ml cell streak tube (Obtain from Lab) | 30 | -Specific Request Form<br>-Sample must be collected and send to Lab: Monday, Tuesday or Thursday before 09:30AM |
| Lamotrigine | LAMO | 8ml GEL Yellow Top | 30 | |
| Legionella Antigen | LEGU | 20ml Random Urine | 17 | |
| Leptospirosis Antibody (IgM) | LEPM | 8ml GEL Yellow Top | 17 | |
| Leptospirosis IgG | LEPG | 8ml GEL Yellow Top | 10 | |
| Levetiracetam (Keppra Level) | KEP | 8ml GEL Yellow Top | 17 | |
| Lipase | LSE | 8ml GEL Yellow Top | 17 | |
| Lithium | LIT | 8ml GEL Yellow Top | 10 | |
| Lupus Anti-Coagulant Factor | LAS | 2 x 2.7ml Blue Top (Sodium Citrate) Frozen Plasma | 30 | |
| Measles IgG Antibody | MEG1 | 8ml GEL Yellow Top | 10 | Provide BruHims No. |
| Measles IgM Antibody | MEM | 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 | |
| Mumps IgG | MUMG1 | 8ml GEL Yellow Top | 10 | Provide BruHims No. |
| Mumps IgM | MUMM | 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 | |
| Myoglobin (Urine) | UMYO | 20ml random urine | 17 | |
| Myositis Associated Antibody | MA | 8ml GEL Yellow Top | 17 | |
| Neuron Specific Enolase | NSE | 8ml GEL Yellow Top | 30 | |
| Neuronal Antibodies Extended Panel (12 Abs) | NAEP | 8ml GEL Yellow Top Or CSF | 30 | |

*Refer to changes highlighted yellow*

| Test Name | Test Code | Specimen Requirement | TAT (working days) | Remarks |
|---|---|---|---|---|
| NEURONAL Antigen Profile Immunoblot | NEUROBLOT | 8ml GEL Yellow Top | 30 | Provide BruHims No. |
| NICE BASIC (Non-invasive Prenatal Test) | NICEB | Using specific collection kit: (get the kit from laboratory) | 17 | - Specific Request Form<br>- Sample must be collected and send to Lab: Monday, Tuesday or Thursday before 09:30AM |
| NICE EXTENDED (Non-invasive Prenatal Test) | NICEX | Using specific collection kit: (get the kit from laboratory) | 17 | - Specific Request Form<br>- 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 | |
| Paraneoplastic Antibodies | PAR | 8ml GEL Yellow Top | 10 | |
| Personal Cancer Diagnostic Invitae | PCDI | 2 x 4ml EDTA Blood (Purple) | 30 | - Specific Request Form<br>- Sample must be collected and send to Lab: Monday, Tuesday or Thursday before 09:30AM |
| Phospholipid Antibody Screen | CPILAS | 2 x 2.7ml Blue Top (Sodium Citrate) Frozen Plasma, AND<br>1 x 8ml GEL Yellow Top | 17 | |
| Pik3Ca Liquid Biopsy | LBPIK3CA | 2 x Streck tube (Obtain from lab) | 17 | -Specific Request Form<br>- Sample must be collected and send to Lab: Monday, Tuesday or Thursday before 09:30AM |
| Protein C | PTC | 2 x 2.7ml Blue Top (Sodium Citrate) Frozen Plasma | 17 | |
| Protein Electrophoresis | PES | 8ml GEL Yellow Top | 30 | |
| Protein S | PTS | 2 x 2.7ml Blue Top (Sodium Citrate) Frozen Plasma | 17 | |
| Prothrombin Mutation | PTG | 2 x 4ml EDTA Blood (Purple) | 30 | -Specific Request Form<br>- Sample must be collected and send to Lab: Monday, Tuesday or Thursday before 09:30AM |
| Renin | REN | 2 x 4ml EDTA (purple) -Frozen Plasma | 17 | |

*Refer to changes highlighted yellow*

| Test Name | Test Code | Specimen Requirement | TAT (working days) | Remarks |
|---|---|---|---|---|
| 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 | |
| SurePath PAP Smear | TPP | Using specific kit | 14 | |
| Testosterone (Free) | TESF | 8ml GEL Yellow Top | 17 | Sample must be collected and send to Lab – Monday, Tuesday or Thursday before 09:30AM |
| Thalassaemia Studies | THS | 8ml GEL Yellow Top, AND<br>2 x 4ml EDTA (purple) | 17 | |
| Thiamine (Vitamin B1) | VB1 | 2 x 4ml EDTA Whole Blood (Purple top), wrap with Aluminium foil | 30 | |
| Total T3 | T3 | 8ml GEL Yellow Top | 10 | Sample must be collected and send to Lab: Monday, Tuesday or Thursday before 09:30AM |
| Total T4 | T4 | 8ml GEL Yellow Top | 10 | Sample must be collected and send to Lab: Monday, Tuesday or Thursday before 09:30AM |
| Toxoplasma IgG | TXG | 8ml GEL Yellow Top | 17 | |
| Toxoplasma IgM | TXM | 8ml GEL Yellow Top | 17 | |
| Transglutaminase Antibody (IgA & IgG) | TRANAB | 8ml GEL Yellow Top | 30 | |
| Tuberculosis PCR | TBPCR | Sputum, CSF, Urine or Body Fluid | 30 | Provide BruHims No. |
| Urine Catecholamines 24 Hrs | UCAT | 24hr Urine Bottle with acid (30ml 6N HCL added) | 17 | |
| Urine Cytology | UCYT | 20ml random urine | 17 | Provide BruHims No. |
| Urine Porphyrin Profile | UPSG | 20ml random urine (wrap in foil and freeze) | 17 | |
| Urine Protein Electrophoresis | UPES | 20ml random urine | 17 | |
| 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. |

*Refer to changes highlighted yellow*

| Test Name | Test Code | Specimen Requirement | TAT (working days) | Remarks |
|---|---|---|---|---|
| VDRL for CSF | VDRLCSF | 2ml CSF Fluid | 10 | |
| Ziehl-Neelsen stain | ZN | Any (Sterile container) | 7 | |

**CALL OUTSOURCE SECTION (ext 2127) FOR SPECIFIC REQUEST FORM AND SPECIMEN REQUIREMENTS**

*Refer to changes highlighted yellow*

# 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 | | |

**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 yellow*

**GENERAL TEST 1 PACKAGE, Code: ZGT1**

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

**GENERAL TEST 5 PACKAGE, Code: ZGT5**

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

*Refer to changes highlighted yellow*

**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 yellow*

## 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 yellow*

**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 yellow*

## 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 yellow*

**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 yellow*

**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<br>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 yellow*

**GENERAL TEST 7 (GJ) PACKAGE, Code: GT7GJ**

| | | |
|---|---|---|
| Full Blood Count (Including ESR) | 3 X PURPLE TUBES | WHOLE BLOOD |
| Blood Group | | |
| Glycated Hemoglobin (HbA1c) | | |
| Renal Function Test | 2 X YELLOW TUBES | SERUM |
| Liver function test | | |
| Lipid Profile | | |
| 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 |