

LABORATORY HANDBOOK

Health Laboratory Services
February 2023



Ministry of Health and Wellness



World Health Organisation

INSIDE FRONT COVER

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FOREWORD



As Minister of Health and Wellness, I am proud to present this Laboratory Handbook developed by the Department of Health Laboratory services. The National Health Laboratory Service is a critical component of any health care system and is crucial in the delivery of health care services. For any high quality laboratory services, accurate and timely results are imperative to support the decisions made on diagnosis, and treatment of diseases.

The National Health Laboratory Services, in line with the Ministry of Health and Wellness' vision **"A healthy nation with a constantly improving quality of life and well-being"** and with its own vision **"To become a regional centre of excellence in health laboratory services"**, has taken great strides in ensuring that excellent laboratory services are provided to the population of Mauritius. As part of the implementation towards achieving ISO 15189 accreditation and ensuring provision of high quality services, the Department of Health Laboratory Services aims to provide comprehensive and adequate information of its services to all the healthcare providers.

The Department of Laboratory Services has taken great efforts in putting together the contents of the laboratory hand book in order to ensure that accurate and clear information are communicated properly and also to ensure that this laboratory handbook serves as a user friendly guideline for all healthcare providers and frontline health care workers.

I hope that this handbook will be fully utilised by all healthcare facilities and I also hope that healthcare providers will continue to support the Department of Laboratory Services by providing their comments and feedback for the purpose of further improving the quality of services.

Finally, I wish to congratulate the Laboratory Directorate of my Ministry, and other laboratory-related stakeholders for finalizing this handbook. I sincerely hope that all the above parties will use this for improving the services they provide to the citizens and continue to provide accurate, efficient, cost—effective and high quality services.

A handwritten signature in blue ink, appearing to read 'K. Jagutpal', written in a cursive style.

Dr Kailesh Kumar Singh JAGUTPAL
Minister of Health and Wellness

February 2023

INTRODUCTION

Medical Laboratory services play a pivotal role in the health sector in diagnosis, monitoring, screening and surveillance of various diseases. Central Health Laboratory is the apex body of public Health Laboratory network and comprises of nine different departments namely, Bacteriology, Biochemistry, Blood Transfusion Service, Cytology, Haematology, Histopathology, Molecular Biology, Parasitology and Virology. We have a strong workforce of more than 400 officers of different cadres including Medical, Clinical Scientist, Laboratory Technologists, Health Laboratory Auxilliary, and others distributed at 15 different sites

The Laboratory Service is striving to deliver comprehensive and high quality services. However, quality of laboratory results not only depends on laboratory analysis but also on crucial pre and post analytical variables. Development of this Laboratory Handbook is an endeavor to provide relevant information and guidelines to different stakeholders on patient preparation, collection, handling and transport of samples in order to provide quality and timely results.

Handbook also provides information on the scope of services, location and hours of operations and contacts of key personnel. The available test menu, turnaround times and critical/panic values to be communicated to treating doctors urgently are also indicated.

I wish to extend my sincere thanks to all staff who have helped to put this issue together. It is our hope that this Handbook will meet your needs by providing useful and up-to-date laboratory information.



Dr J Sonoo
Director, Laboratory Services

GENERAL INFORMATION

HEALTH LABORATORY SERVICES

Health Laboratory Services in Mauritius form an integral part of the National Health Service. The services provided are based on solid scientific foundation and help health authorities in:

- Diagnosis of disease
- Monitoring of treatments
- Disease surveillance
- Deciding on optimum utilization of available resources.
- Evidence based research

The hospital-based laboratory service network consists of the following:

- Central Health Laboratory situated at Victoria Hospital (Candos); This also acts as a reference laboratory for specialized tests
- Five regional laboratories at Dr. Abdool Gaffoor Jeetoo Hospital (Port Louis), Sir Seewoosagur Ramgoolam National Hospital (Pamplemousses), Dr. Bruno Cheong Hospital (formerly Flacq Hospital, Jawaharlall Nehru Hospital (Rose Belle) and Queen Elizabeth Hospital (Rodrigues)
- Nine peripheral laboratories at Souillac Hospital, (Souillac), Mahebourg Hospital (Mahebourg), ENT Hospital (Vacoas), Yves Cantin Community Hospital (Black River), PlaineVerte Mediclinic, Goodlands Mediclinic, Triolet Mediclinic, National Cancer Hospital, (Solferino, Vacoas) and Brown Sequard Mental Health Care Centre (Beau Bassin)
- Disease specific laboratory: Sir Edgar Laurent Laboratory for TB, Port Louis

Services provided by the Central Health Laboratory:

1. Bacteriology
2. Biochemistry
3. Blood Transfusion Service
4. Cytology
5. Haematology
6. Histopathology
7. Parasitology/Malaria Section/Mycology
8. Virology
9. Molecular Biology

Besides the services provided to public sector, Central Health Laboratory also provides testing facilities to private sector against a fee as per the Central Health Laboratory Fee Regulations 2009 of the Public Health Act.

Services provided by Regional Laboratories:

1. Routine Biochemistry
2. Blood Bank/Cross Matching
3. Haematology
4. Parasitology
5. Bacteriology (at Dr. AGJH Lab only)

Services provided by Peripheral Laboratories;

- Basic Biochemistry
- Basic Haematology
- Parasitology

THE OPERATING DAYS AND HOURS OF THE LABORATORY SERVICES

NORMAL WORKING HOURS

Monday to Friday	-	From 9.00 am to 3.45 pm
Saturday	-	From 9.00 am to 12.30

REGISTRATION OF PRIVATE REQUESTS (CHL ONLY)

Monday to Friday	-	From 9.00 am to 12.00 am & From 12.30 to 3.00 pm
Saturday	-	From 9.00 am to Noon

AN OUT OF HOURS SERVICE IS ALSO PROVIDED (see next page)

Monday to Friday	-	From 4.00 pm to 9.00 am (Next Day)
Saturday	-	From noon to 9.00 am (Next Day)
Sunday & Public Holiday	-	From 9.00 am to 9.00 am (Next Day)

FOR BLOOD DONATIONS- BLOOD BANK IS OPEN ON

Weekday	-	From 9.00 am to 3.30 pm
Saturday	-	From 9.00 am to Noon

LIST OF URGENT TESTS PERFORMED AFTER NORMAL WORKING HOURS

Cross Matching - CHL & All Regional Laboratories

1. ABO and Rh typing
2. Cross Matching/Type & Screen
3. Direct Coombs' Test

Haematology- CHL & All Regional Laboratories

1. Hemoglobin (Hb)
2. Full Blood Count (FBC)
3. Erythrocyte Sedimentation Rate (ESR)
4. Prothrombin Time (PT)/ INR
5. Activated Partial Thromboplastin Time (APTT)
6. Fibrinogen Level
7. Fibrinogen Degradation Products (FDP)
8. D Dimer

Biochemistry-CHL & All Regional Laboratories

1. Glucose
2. Urea/Creatinine
3. Electrolytes
4. Amylase
5. Calcium (Babies) & (RT patients)
6. Bilirubin (Babies)
7. Ketone bodies
8. CSF (Glucose, Protein)
9. CRP (on request)
10. Uric acid (on request)
11. CK (on request)
12. LFT with liver enzymes (for prenatal on request)

Microbiology- Central Health Laboratory

1. All urgent specimens for Bacteriology from VH, JNH and BCH
2. Pregnancy tests
3. Urgent specimens for Malarial parasites

Microbiology- Dr A G Jeetoo Hospital

1. All urgent specimens for bacteriology from SSRNH and A G Jeetoo Hospital

Virology/Molecular Biology (from 4pm to 10pm) (As and when required during outbreak/ Communicable disease surveillance)

1. COVID-19 test (SARS-CoV-2 PCR or Serology)
2. Dengue/Chikungunya
3. Influenza Virus
4. Zika
5. MERS CoV among HadjPilgrimss

GENERAL GUIDELINES ON COLLECTION OF SPECIMENS FOR BLOOD TESTS

I. Purpose

Blood specimens are collected for laboratory analyses that are necessary for the diagnosis and care of the patient. The main objectives are:

1. To obtain the samples as skillfully as possible to maintain integrity of sample for analysis and cause minimal injury to the patient's vein.
2. To collect appropriate volume of blood in appropriate tubes for the test required,

II. Procedure

1. Preparation for samples collection

Prior to each collection, review the appropriate test description, including the specimen type indicated, the volume, the procedure of collection, the collection materials (container types/syringes/antiseptics/tourniquet), patient preparation, and storage and handling instructions.

2. Preparing the Patient

Provide the patient, in advance, with appropriate collection instructions and information on fasting, diet, and medication restrictions when indicated for the specific test.

3. Blood Collection containers

Blood collection containers may be with or without anticoagulants. Anticoagulants are substances that interfere with the activity of the factors involved in the clotting of blood. There are different kinds of anticoagulants and may be in powdered or liquid form. The proper anticoagulant must be used for the specific test to be done

Blood Collection Containers	Stopper (cap) Colour
(a) EDTA	Lavender
(b) Li Heparin	Green
(c) Fluoride/Oxalate or Fluoride EDTA	Grey/Yellow
(d) Na Citrate	Blue
(e) Plain (No anticoagulant)	Red

Blood collected in anticoagulants must be thoroughly mixed to prevent clotting.

DO NOT SHAKE THE TUBE. MIX BY GENTLE INVERSION 5-6 TIMES

4. Preparing the Specimen.

Verify the patient's identification. Proper identification of specimens is extremely important. All primary specimen containers must be properly capped and labelled with the following information:

- Patient's full name
- Date of Birth/Age and Sex
- Hospital/Ward
- Date of collection, (Time of collection whenever applicable).

Specimens should be labelled in the presence of the patient. Appropriate storage and handling are necessary to maintain the integrity of the specimen and, consequently, the test results.

DO NOT USE PRE-LABELLED CONTAINERS

5. Test request forms

Request forms must be legibly filled with the following information:

- a. Patient's Full Name (In Capital Letters)
- b. Hospital Number
- c. NIC
- d. Sex and Date of Birth/Age
- e. Physician's Name
- f. Time and Date of collection
- g. Relevant Diagnosis /clinical details
- h. Specimen type
- i. Investigations requested
- j. Request for Urgent tests: shall write "URGENT" on top corner of request form, countersigned by specialist and communicated to lab personal when sending

CRITERIA FOR REJECTION OF SPECIMENS

Samples shall be rejected under following conditions:

- a. Inadequate, or missing identification on the specimen(Name, Gender, DOB/Age, ward, hospital) / Improperly filled forms.
- b. Discrepancy in labeling between sample and request form
- c. Unlabeled specimen
- d. Specimens that are haemolysed
- e. Samples collected in inappropriate container (wrong anticoagulant or preservative)
- f. Insufficient volume of sample
- g. Clotted sample in Tri-sodium citrate, heparin and fluoride oxalate tube.
- h. Long standing specimens that have no more diagnostic value
- i. Leaking samples

COLLECTION OF SPECIMENS FOR BACTERIOLOGY EXAMINATION

Principle:

Proper collection of specimens for microbiology culture is essential to provide accurate patient test results. To avoid interference with laboratory methods, it is essential that the correct procedure for collection and handling of specimens be followed. Meticulous site preparation is paramount to accurate culture results. **The quality of results depends much on the quality of the specimen collected.**

General Considerations:

1. Verify patient identification
2. Obtain specimens prior to administration of antimicrobial therapy whenever possible.
3. Collect specimens in appropriate sterile leak-proof container.
4. Close container securely to prevent leaking. Label container with full patient name and hospital number. **Leaking specimens are not acceptable.**
5. Indicate exact site of specimen and collection date (and collection time when appropriate) on request form.
6. Relevant clinical details should be provided.
7. Transport to the laboratory immediately.

**Please use the sterile disposable containers provided.
Specimens in “boiled” containers are not acceptable and will be rejected.**

Exact site of swab, including site of “pus” swab, should always be specified

Specimens should be collected *as far as possible* before starting antibiotics (**in life-threatening infections, treatment should not be delayed if specimens cannot be obtained promptly**).

Please indicate current or intended antibiotic treatment on request form.

Body Cavity Fluids:

Aseptically obtained aspirate sent in sterile container is the best specimen.

Sputum Specimens:

The patient should be instructed to cough deeply and expectorate sputum into proper container. Early morning freshly expectorated sputum is preferred.

Salivary specimens are of little value (except in neutropenic patients)

If the patient is unable to produce sputum, sputum induction may be effected by postural drainage, saline nebulization, or chest percussion. If tuberculosis is a strong possibility, these procedures to obtain an adequate specimen should not be performed in the main ward.

Stool Specimens:

Avoid antibiotic administration prior to taking specimens.

Stool should be sent in sterile container.

Test for *Clostridium difficile* toxin is performed on specific requests only.

Throat Culture Specimen:

Avoid antibiotic administration prior to taking specimens. The preferred specimen is a fresh uncontaminated swab of the posterior pharynx and tonsillar fossa taken under direct visualization with tongue depression to avoid lingual contamination. Any visible exudates should be cultured.

Urine Culture Specimen:

Avoid antibiotic administration prior to taking specimens.

Midstream specimen of urine is the preferred specimen.

Specimen should be sent in sterile container, preferably containing boric acid salt. Boiled containers will be rejected.

1. Wipe head of penis or labial folds
2. Urinate a small amount in toilet or bedpan.
3. Place container under stream and continue to urinate in container until nearly full
4. Finish urinating in toilet or bedpan
5. Close container and invert a few times to ensure mixing with boric acid salt and exclude leaking.

Catheter specimen of urine should be sent in catheterized patients, not the Foley catheter tip! In neonates and infants, clean-catch urine specimen and suprapubic aspirate are the most reliable specimens.

Bag urine are usually contaminated with perineal flora.

Urine specimen for culture should not be recovered from diapers.

Blood Culture

1. Clean venipuncture site using alcohol preps in a circular motion from the center to the periphery. Allow the area to dry.
2. Set blood culture bottles on flat surface. Flip off caps and clean each rubber top with alcohol.
3. Perform venipuncture without touching insertion site.
4. Inject appropriate volume (usually 5 to 10 ml in adults) in bottle. Withdraw needle. Gently invert bottles to mix contents. Replace cap.

NB. If blood is being collected for blood cultures as well as for other tests, blood culture bottles should be inoculated first because sterility is less important for other blood tests.

Cerebrospinal fluid (CSF)

Collect CSF before antimicrobial therapy is started.

Collect CSF in a screw – capped sterile container (preferably small 7 ml container) and not in an injection vial. Ideally 3 specimens should be collected.

Mention on specimen container the order in which the specimens were collected, i.e 1st, 2nd, etc...Transport to laboratory without delay.

Wound Culture Specimens:

Avoid antibiotic administration until after specimen is obtained. Disinfect the surrounding area with several changes of sterile saline prior to obtaining specimens.

The preferred specimen is a discharge or aspirated material after surface is cleaned, disinfected, or removed (e.g debridement). The specimen should be obtained from the deep or active part of the wound. Exudated tissue is preferable to swab specimens, particularly if mycobacteria, fungi, or anaerobes are suspected.

Conjunctival swab

Touch involved area with sterile swab.

Corneal scrapings for culture

Under slit lamp control scrape base and margin of ulcer, and place scrapings in container.

Vaginal and cervical swabs

Genital cultures in females should be obtained via speculum under direct observation, provided there is no contraindication.

Skin infection

Aspirate or pus from bullae, vesicles, and abscesses; material from interior of lesions is preferred over surface material.

Swabs are of more limited value.

In absence of lesions that can be cultured readily, skin specimens may be of no help.

In case of suspected mycobacterial infection, tissue is the recommended specimen.

If dermatophyte infection is suspected, skin scrapings, hair, or nail clippings should be sent for fungal culture.

Summary of specimen collection for tests performed in Bacteriology Section

Test	Specimen Collection
Pus from site of wound, injury, surgery, bite, ulcer, abscess, etc.. for M, C&S	Pus aspirate in sterile container or pus swab Site of pus should be specified
Sputum for M, C & S	In sputum container or plain sterile container
Sputum for AFB	
Sputum for TB PCR by GeneXpert	In sputum container (by Specialist Chest Medicine only)
Stools for M, C & S	Stools in sterile container
MSU for M, C & S	Mid-stream urine in sterile boric acid container or plain sterile container <i>Boric acid container preferred</i>
Catheter specimen urine (CSU) for M, C & S	
Suprapubic aspirate (SPA) for M, C & S	
CSF for M, C & S	CSF in sterile container
CSF for Cryptococcus antigen/ India Ink stain	CSF in sterile container
Blood Culture	Blood in blood culture bottle provided
Vaginal swab for M, C & S	Swab of discharge
Throat swab for M, C & S	Swab of exudates <i>Swab in transport media gel preferred</i>
Ear swab for M, C & S	
Eye swab for M, C & S	
Corneal scrapings for M, C & S	Corneal scrapings in sterile container
Ascitic fluid, pleural fluid, peritoneal fluid, joint fluid, sinus aspirate, antral washout for M, C & S	Fluid in sterile container
Tracheal secretions for M, C & S	Tracheal secretions in sterile container
Intravascular catheter tips for C & S	Tip of catheter in sterile container
Tissue for M, C & S	Tissue in sterile container
Gastric aspirate for AFB	Fluid in sterile container
Bronchial lavage for M, C & S and/or AFB	Fluid in sterile container
Urine for AFB	Entire early morning urine in leak proof container
Mycology of skin	Skin scrapings in sterile container
Mycology of nails	Nail scrapings in sterile container
Mycology of hair	Base of hair in sterile container
Anti-streptolysin O titre (ASOT)	Clotted blood in plain tube (5 ml)
Widal test	Clotted blood in plain tube (5 ml)
Brucella serology	Clotted blood in plain tube (5 ml)
Legionella urinary antigen test	Urine in plain sterile container <i>Not boric acid container</i>
Stools for <i>Clostridium difficile</i> toxin	Stools in sterile container
Pneumococcal urinary antigen test	Urine in plain sterile container
Cryptococcal antigen in blood	Blood in plain tube
Stools for <i>Helicobacter pylori</i> antigen	Stools in sterile container

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GUIDELINES ON SPECIMENS COLLECTION FOR BIOCHEMISTRY TESTS

The following is a general guideline for Biochemistry tests but individual procedures should be consulted for specimen requirements.

BLOOD TESTS

ANTICOAGULANT	TESTS	STOPPER COLOUR
Fluoride Oxalate/Fluoride EDTA	Glucose	Grey
EDTA	HbA1C, Tacrolimus	Lavender
Lithium Heparin	Chemistries, Cortisol	Green
Plain (No Anticoagulant)	Hormones, Tumour Markers, Drugs, TDM, Iron, Gamma GT, Protein Electrophoresis, Allergy	Red

URINE TESTS

SAMPLE	TEST	PRESERVATIVE
Spot Urine	Chemistry, Microscopy, ACR	None (plain container)
24 Hr Urine	Protein, Creatinine	Toluene
24 Hr Urine	VMA, Calcium	Acid

Technique for collecting 24 hours urine sample

After getting up in the morning, empty your bladder and discard the urine. Note the time. For the next 24 hours, save all urine voided in the container provided. When 24 hours are over, empty your bladder and ADD this urine to the container. Note the time. Bring all the urine to the lab or health centre. If you miss collecting one or more voids, consult your doctor or the laboratory for further instructions

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SPECIMEN COLLECTIONS FOR BLOOD TRANSFUSION SERVICE

Tests done in Blood Transfusion Service include

1. Blood grouping
2. Direct/Indirect Coombs Test
3. Antibody screening, identification and titration
4. Cross matching
5. HLA typing and HLA Direct cross matching

TEST	SAMPLE COLLECTION TUBE/ ANTICOAGULANT	VOLUME
ABO/Rh	EDTA	4 ml
Rh Phenotyping/ Genotyping	EDTA	4 ml
DAT	EDTA /clotted blood	4 ml
IAT (Antibody screen)	Plain /EDTA	4 ml
Antigen Screen	Plain and EDTA	4 ml (Plain)+ 5 ml (EDTA)
Antibody ID	EDTA/Plain	4 ml
Auto absorption	Plain and EDTA	4 ml (Plain)+4ml (EDTA)
Elution	EDTA/Plain	4 ml
Antibody Titer	EDTA/Plain	4 ml
Compatibility Testing	EDTA	4 ml
Cold Agglutinins	Plain and EDTA Note: blood to be centrifuged immediately and serum separated	4 ml (Plain) + 4ml (EDTA)
HLA B27 Typing	CPD Note: Prior appointment at NBTS	5 ml
HLA typing (Molecular)	EDTA	4 ml
HLA Direct Matching	CPD and Plain Note: Prior appointment at NBTS	10 ml in CPD for both donor and patient 4 ml in plain for patient
Type and screen	EDTA	5 ml

Note:

1. Sample volume for neonates and babies-minimum of 2 ml EDTA for DAT and Compatibility Test
2. Request for transfusion of blood for babies up to 4 months old, to be accompanied by 4 ml mother's blood collected in EDTA.

Specimen collection for Transfusion Purpose

Correct patient identification and sample collection is highly critical in transfusion. The process should be carried out by a 2-person team to ensure correct patient identification and sample collection

Labeling of the specimen must occur at the bedside of the patient and the collection team must focus solely on the procedure until its completion.

All specimens must be properly labelled and accompanied by a properly and completely filled cross matching request form.

Corrections are not allowed on mislabeled specimens; a new sample will be collected.

Patient information on the sample must match that on the cross-match request form

Specimens for **TYPE AND SCREEN** requests will be retained for 1 week in the cross matching. **There is no need to send a second sample in case blood is required for transfusion** following a **TYPE AND SCREEN** request within 1 week

Following a transfusion event, a fresh sample will be required, if another transfusion is carried out after 48 hours of the first transfusion

Investigation of Transfusion Reaction

All transfusion reactions should be documented and reported to Blood Transfusion Service.

In case of a transfusion reaction in a patient, following should be done

1. Stop transfusion immediately and inform blood bank
2. Perform all clerical checks
3. **Do not discard blood bag implicated even if empty and send to NBTS**

Samples to be sent to investigate a transfusion reaction (Hemolytic reactions and suspected bacterial contamination of the unit)

1. Remnants of blood unit implicated
2. 5 ml post transfusion blood sample from patient in EDTA
3. First voided urine sample following transfusion reaction in a plain sterile container

Above should be accompanied by a duly filled Transfusion Reaction Investigation form with all details of the reaction

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COLLECTION OF SPECIMENS FOR CYTOLOGY

A quality sample is fundamental to ensure reliability of test and minimize false negative results.

Cervical Cytology

1. Conventional Method

The sample should best be taken around mid –cycle.

When using the spatula to collect sample, it should be applied with some degree of firmness and rotated the full thickness of the cervix.

Then the spatula with sample should be rapidly but lightly stroked thinly and evenly along the surface of the slide without any delay.

The smear must be fixed rapidly by immersion in 95% alcohol or spraying with fixative (Cytotfix) (10-15 mins)

Allow fixative to dry thoroughly in air before packing slides for transport.

2. Liquid Based Cytology (LBC)

LBC is a new method of cervical cell sample preparation. Samples are collected in the usual way, but using a cervical brush.

After collecting sample rinse the brush into a vial of preservative fluid so that most or all of the cervical cells are retained.

Transport samples to the laboratory

Cellular debris, such as blood or mucus, is removed and a thin layer of cervical cells is deposited on a microscope slide, which is then stained.

Potential advantages of the LBC method include

- An improved means of slide preparation, producing more homogeneous samples than the Pap smear (which may make slides easier to read)
- Increased sensitivity and specificity,
- Improved efficiency of handling laboratory samples, resulting in increased laboratory productivity.

Non Gynae cytology

Body fluids specimen and washings to be placed in a tightly capped leak proof appropriately labeled container

Label should be properly fixed on the side of the container – **not the lid**.

Submit to the laboratory immediately.

If delay is anticipated, sample should be refrigerated at 4°C, but transported as soon as possible

Fine Needle Aspirate Cytology (FNAC)

Please contact the laboratory for an appointment.

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COLLECTION OF BLOOD SPECIMEN FOR HAEMATOLOGY

Purpose

This subsection details out specific requirements for collection of specimens for haematological investigations. It has been observed that a great percentage of rejected specimens in the lab concerns specimens for coagulation studies and FBC.

General Considerations

1. The patient must be identified correctly.
2. The request form must be properly filled.
3. Blood should never be taken from any vein in a limb into which an infusion is running.
4. Blood should be put in the correct tube labelled at the time and should never be tipped from one tube to another.
5. The use of a tourniquet should generally be avoided. If needed, it must be released before the syringe is filled.

NO.	TESTS	ANTICOAGULANT	VOLUME
1	FBC Blood film, HB, ESR, G6PD, HAM TEST	EDTA	VOLUME TO BE COLLECTED IS PRINTED ON THE TUBE AND/OR INDICATED BY A FILL LINE. ADD EXACT VOLUME
2	Hb electrophoresis	EDTA	
3	Coagulation studies (PT, APTT, factor assays, lupus anticoagulant) and thrombophilia screen (AT III, Protein C Protein S, APCR)	Na citrate	
4	Platelets count in Citrate tube	Na citrate	
5	Immunology (ANA, DSDNA, ENA, C3, C4)	Plain tube	
6	Antiphospholipid antibody/ Anti-cardiolipin antibody	Plain tube	
7	Platelet's function assay (PFA 100)	Na citrate	
8	Flowcytometry	EDTA	
9	Osmotic Fragility	EDTA and Heparin	

Procedure for FBC and Hb Electrophoresis

1. Collect exact volume of sample as indicated on the tube. Incorrect volume affects test parameters especially for FBC and for Coagulation studies.
2. Mix gently by repeated (5-6) inversions immediately after collection of blood
3. Send to the laboratory as soon as possible
4. Post transfusion samples should not be sent for diagnosis of coagulation disorders and Hb Electrophoresis

Procedure for Erythrocyte Sedimentation Rate (ESR)

1. Blood collected for ESR test should be sent to the laboratory immediately after collection, as the tests has to be carried out within 2 hrs after collection of samples.

2. Request for ESR test should be sent to the laboratory as per the following time schedule:

WEEKDAYS : from 9hrs to 13.30 hrs

SATURDAYS: from 9hrs to 10.00 hrs

Procedure for Coagulation Studies

Where indicated advice from head of department should be sought prior to request as these tests are expensive

1. Same procedure as above
2. If a vacutainer system is used the draw should be either the second or third one.
3. Urgent specimen should reach the laboratory within 30 minutes after collection/ non-urgent, routine-1 hour
4. Post transfusion samples should not be sent for diagnosis of coagulation disorders.

Procedure for collection of blood for Coagulation Tests (Pediatric)

1. Procedure of collection is SAME as that for adult except that the tube is smaller and contains just enough anticoagulant to collect a smaller volume of blood, i.e 2ml only
2. The tube is available at the heamatology department of the Central Health Laboratory as well as the different branch laboratories

Procedures for Thrombophilia studies

These may be considered in the following circumstances:

- Spontaneous venous thrombosis at <45years age.
- Venous thrombosis at unusual sites.
- A strong family history of venous thrombosis.
- A history of recurrent fetal losses.

Patients should have a full clinical assessment for evidence of an acquired cause for a prothrombotic tendency.

Screening for a Lupus Anticoagulant/Anti Phospholipid Syndrome should be considered in all patients with recurrent fetal losses or an apparent tendency to venous and/or arterial thrombosis.

A screen for inherited markers of a predisposition to venous thromboembolism, if indicated, will include tests for Activated Protein C Resistance, Antithrombin III, Protein C and Protein S.

Avoid taking the relevant samples around the time of an acute thrombotic event or when the patient is receiving anticoagulant therapy.

NOTE: Investigation of patients for an inherited marker of Thrombophilia is not available at CHL However these are frequently unnecessary and seldom have a significant impact on the clinical management of a patient.

Procedure for collection of blood for Systemic Lupus erythematosus (SLE)

Tests presently available for the above disease are;

1. Antinuclear Antibody (ANA)
2. dsDNA
 - a. 5.0 ml of venous blood sample collected in a sterile/plain tube is required for both tests.
 - b. C3, C4, antiphospholipid antibody, anti-cardiolipin antibody, ANA and dsDNA is done as per request.
 - c. ENA is carried out on all ANA and dsDNA positive samples

REFERENCE RANGE

Reference range is dependent upon several variables, namely age, sex, ethnic group and methodology amongst others

Reference range is usually included alongside test result

Procedure for Bone Marrow Aspiration/Biopsy

1. The above procedure is performed by the Pathologist upon request from a treating specialist
2. All bone marrow requests should be discussed by the treating specialist with the pathologist
3. Ward where patient is admitted sends the request together with the patient's folder to the Hematology Department
4. The hematology Department forwards the request to the Pathologist concerned
5. The Pathologist liaises with the ward, fixes time and date and performs the biopsy/aspiration exercise.
6. The Hematology department processes the aspirate for examination and histopathology processes the biopsy
7. The Pathologist examines the processed aspiration/biopsy and issues a report thereon
8. The hematology/histopathology Department records the result and informs the ward concerned to collect it.
9. The ward collects the result from the hematology/histopathology Department

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COLLECTION OF SPECIMENS FOR HISTOPATHOLOGY

Specimen for Histopathological assessment ranges from a tiny sample (Biopsy) up to part of or a whole organ.

Surgical margins must be clearly marked (with sutures) for proper identification and orientation of the specimen.

The specimens for Histopathological examination need to be fixed promptly. The ideal fixative is 10% neutral buffered **formaldehyde in saline**. It is recommended that the volume of the fixative should be 10 times the volume of the specimen. The strict minimum should be such that the specimen is covered with the fixative.

Specimens should be transported in well-sealed non-breakable plastic containers.

Each specimen container for Histopathology should be clearly labeled with the following details:

Name of Patient

Age and sex

Name of Hospital, ward, unit number and patient ID

Sample type

Referring doctor (specialist)

Date of collection

Time of collection

Specimens must be accompanied by a properly filled request form giving all clinical details. Improper filling of the request forms may lead to delay in results

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IMMUNOHISTOCHEMISTRY (IHC) SECTION

Requirements for IHC

Cold ischemic time also called delay to Formalin Fixation:

This is the time from excision of the specimen from the surgical field to the time the tissue is placed in fixative

Cold Ischemic time should **be less than one hour** for all core needle biopsies, excisional biopsies and large specimens to avoid any false negative IHC results

Specimen Type for IHC: Formalin fixed, paraffin embedded tissue

1. Requests for IHC:

The request for IHC may emanate from:

- 1) Pathologists driven request:** - Pathologist reporting on surgical pathology specimens may feel the need for IHC for a conclusive diagnosis. Requesting pathologists should fill up IHC form and indicate required markers. All paraffin blocks are at the Central Health Laboratory.
- 2) Clinician driven requests:** - Clinicians may request for specific IHC markers which are not currently available at CHL and have to be sent abroad. Request forms (IHC/ISH abroad forms) are duly filled with all mandatory fields covered. (Clinical, Serological and Radiological findings).
- 3) Requests from private institutions:**-Requests are also received for IHC markers on patients who have been diagnosed in private and then referred to the hospital for further management. In such cases paraffin blocks should be submitted to CHL. All paraffin blocks should be properly labelled, kept under optimal conditions and accompanied by their respective histopathology reports along with duly filled request forms. The block/s submitted should have the best representative sample of the tumour and should have adequate tissue sample.

2. In-Situ Hybridization (ISH)

Paraffin blocks are subjected to the same requirements as for IHC. Light microscopy is used for Dual-In-Situ Hybridization (DISH) and a special reporting form is validated for amplification.

3. Paraffin blocks that are sent abroad

A specific abroad immunohistochemistry (In-Situ Hybridization) form is to be filled by the treating oncologist, Consultant-In-Charge and approved by the Regional Health Director (RHD) from their respective hospital bearing two official seals

Head of IHC Department:

Dr. N.J.S Fauzee

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COLLECTION OF SPECIMENS FOR PARASITOLOGY

TEST TYPE	CONTAINER TYPES	VOLUME OF SAMPPLE
Malaria	EDTA	2ml
Test for filariasis	EDTA	2ml NOTE : Night Specimen between 10.00 pm and 2.00 am preferred
Rheumatoid Factor	Plain	2ml
Stools microscopy for ova, cysts, parasites	Plain	One spoonful (1/3 of container)
Urine for Schistosomiasis	Plain	10ml (Terminal urine specimen)
Pregnancy test (hCG)	Plain	2ml NOTE: Morning first voided urine preferred
Semen Analysis	Plain sterile container	Fresh semen sample to be collected NOTE: Prior appointment with Parasitology Department

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SPECIMEN COLLECTION FOR VIROLOGY

In Virology, specimens are sent mainly for:

1. Virus isolation and identification
2. Serological tests for diagnosis/monitoring/treatment of viral infections.
3. Molecular based testing including PCR for diagnosis, monitoring and treatment of viral infections.

1. Specimens for Virus Isolation

Specimens for virus culture should be collected aseptically as soon as possible after onset of illness and should be kept at 4° C pending transport to laboratory.

Specimens are collected in either clean sterile tubes/containers or virus transport medium (V.T.M) whichever is appropriate depending upon nature of sample and site of collection.

VTMs are supplied by the Virology department of the Central Health Laboratory and may be kept at 4° C or room temperature according to instructions

1.1 Specimens collected in sterile tubes/containers.

- (a) **CSF and Fluids** – aseptically collect 1-2 ml in sterile tube.
- (b) **Blood** – 4.5 ml in sterile vacutainer or other evacuated tubes with haemo-guard caps i.e caps to protect opening.
- (c) **Faeces**– One tablespoon in a clean screw cap container with large opening.
- (d) **Washings** (bronchial) or **Nasopharyngeal aspirate** - collect aseptically 3-5 ml in sterile screw cap container.

1.2 Specimens collected in Virus Transport Medium (VTM).

- (a) **Autopsy& Biopsy** – small pieces of unfixed tissue dipped in VTM
- (b) **Tissue and lesion scrapings** – suspend specimen in VTM
- (c) **Swab Specimens** - They include:
 - i. Throat and Nasopharyngeal swabs
 - ii. Genital lesion and mucosal swabs
 - iii. Rectal swabs.

Specimens must be collected so as to contain as much infected material as possible. Cotton tipped swabs with plastic stems (Dacron Swabs) are preferred to wooden stems.

Procedure

Swab the affected/infected or inflamed area thoroughly and firmly by applying light pressure and at the same time rolling the swab.

Dip the swab in VTM and squeeze and roll the cotton tip against the wall of the tube in order to milk out its contents. Break the swab stem at a length to allow closure and leave the swab inside the VTM tube. Close the tube.

2. Specimens for serological tests

Clotted blood is required for most serological tests except for CD₄/CD₈ cell count.

4 to 5 ml of blood collected in a **plain** tube is needed. Vacutainer tubes or other evacuated tubes with external closure are recommended.

Specimens for CD₄/CD₈ cell count must be collected in **EDTA tubes** and should be kept at **room temperature**. All other specimens for serological tests should be kept at 4-8°C.

Test	Target detection	Techniques	Sample	Remarks
Rotavirus	Antigen	Immunochemistry/PCR	Stools in plain container	
Adenovirus	Antigen	Immunochemistry/PCR	Stools in plain container	
Norovirus	Antigen	Immunochemistry/PCR	Stools in plain container	
Dengue	Antigen	Immunochemistry	4 ml clotted blood	
Chikungunya	IgM	Immunochemistry	4 ml clotted blood	
Leptospirosis	Antibody	CFT/EIA	4 ml clotted blood	
	Spirochaete	PCR	4 ml EDTA	
Mycoplasma pneumoniae	Antibody	CFT/EIA	4 ml clotted blood	
Coxsackie virus	IgM/IgG	EIA	4 ml clotted blood	
Enterovirus	IgM/IgG	EIA	4 ml clotted blood	
	Virus	PCR	Stools in plain container	
Epstein-Barr virus (EBV)	VCA :IgM/IgG	EIA	4 ml clotted blood	
Herpes simplex virus (HSV 1&2)	IgM/IgG	EIA	4 ml clotted blood	
	Virus	Viral culture	Swab in VTM	Currently Unavailable
Influenza Virus	Virus	Viral culture	T/S in VTM	Currently Unavailable
Measles Virus	IgM/IgG	EIA	4 ml clotted blood	
	Virus	PCR	T/S in VTM	
Mumps	IgM	EIA	4 ml clotted blood	
Parvovirus B19	IgM/IgG	EIA	4 ml clotted blood	
Varicella Virus (VZV)	IgM/IgG	EIA	4 ml clotted blood	
Zika virus	IgM/IgG	EIA	4 ml clotted blood	
HIV Serology	Antigen/Antibody	EIA	4 ml clotted blood	
HIV viral Load	Quantitative/Qualitative	PCR	4 ml EDTA	
HIV CD4/CD8	Cells count	Flow cytometry	4 ml EDTA	
Helicobacter pylori	Antibody	Immunochemistry	4 ml clotted blood	
Hepatitis A (HAV)	IgM	EIA	4 ml clotted blood	
Hepatitis B (HBV)	HBsAg -Antigen	EIA	4 ml clotted blood	
Hepatitis -HBV Core	IgM	EIA	4 ml clotted blood	
Hepatitis B Antibodies (anti-HBs)	Antibody	EIA	4 ml clotted blood	
Hepatitis -HBe	Antigen/Antibody	EIA	4 ml clotted blood	
Hepatitis -HBV Viral Load	Quantitative	PCR	4 ml EDTA	
Hepatitis C (HCV)	Antibody	EIA	4 ml clotted blood	
Hepatitis -HCV Viral Load	Quantitative	PCR	4 ml EDTA	
Toxoplasma	IgM/IgG	EIA	4 ml clotted blood	
Rubella	IgM/IgG	EIA	4 ml clotted blood	
Cytomegalovirus (CMV)	IgM/IgG	EIA	4 ml clotted blood	
VDRL	Antibody	Carbon Antigen Test	4 ml clotted blood	
Treponema Pallidum (TPHA)	Antibody	HA/EIA	4 ml clotted blood	

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SPECIMEN COLLECTION FOR MOLECULAR BIOLOGY TESTS

In Molecular Biology, specimens are sent mainly for diagnosis, monitoring and treatment of infections using the PCR technique

1. Specimens for Molecular techniques

- For Covid-19 testing, nasopharyngeal swabs are collected in VTM (Viral Transport Medium)
- For Influenza (Seasonal and Pandemic) and measles throat swabs or nasopharyngeal swabs collected in VTM is required.
- For Dengue and Chikungunya PCR, 4 ml EDTA or 4 ml clotted blood or Dry Blood Spot (DBS) is required
- For CSF, 1-2 ml cerebrospinal fluid is aseptically collected in a sterile tube for testing of HSV Herpes Simplex Virus, measles and Varicella Zoster Virus.
- For Leptospirosis PCR, 4 ml EDTA or 4 ml clotted blood is required.
- For HIV, HBV and HCV viral load an EDTA sample is required.
- For Rotavirus, Norovirus, Enterovirus and Adenovirus PCR a stool sample is required.

2. Urgent Samples for Public Health importance. (e.g Chikungunya, Dengue, Covid-19)

At times, patients present clinically with signs and symptoms of a viral infection of public health importance who may have travelled to an infected region or may have been in contact with a confirmed infected case.

In these situations, an urgent diagnosis is required to clinically manage the patient or to take public health measures immediately

In order to get assistance please contact Principal Clinical Scientist/ Principal MLT on 4279137. MLT/Senior MLT /Principal MLT can also be contacted on 4246375

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Critical / Panic Values

Critical/Panic values are defined as values that are outside the normal range to a degree that may constitute an immediate health risk to the individual i.e. life threatening

Critical values require immediate action on the part of the ordering physician.

Mode of information: All critical values shall be informed immediately via phone calls.

Tests results are communicated verbally only to a member of the healthcare staff responsible for the patient and authorized to take patients results.

Person taking the call must read back the patient's name, the hospital number and all laboratory results.

All verbal critical value notification must be documented.

Critical value Register

Test	Name of patient	Test value	Sample Received Time	Test Performed Time	Technician performed the test	Result informed Time	Result informed by	Result received by	Hospital ward/opd/casualty

Haematology Critical Values

Analyte	Age Range	Critical Value	Units	Action to be taken	Responsible person for action
Absolute Neutrophill Count	Any	<0.5	k/micro lit	Phone Ward/ Clinician	MLT/SMLT
PCV	Any	<21.0 >65.0	%	Phone Ward/ Clinician	MLT/SMLT
Hemoglobin	Any	<7.0	gm/dl	Phone Ward/ Clinician	MLT/SMLT
Platelet Count	Any Gynae/Obs	<10,000 <50,000	k/micro lit	Phone Ward/ Clinician	MLT/SMLT
WBC	Adults/Children (excluding neonate)	<0.5 >50	k/micro lit	Phone Ward/ Clinician	MLT/SMLT
PBF	Any (excluding neonates)	Blasts (1 st time /Relapse)	%	Phone Ward/ Clinician	Pathologist/ MLT/ SMLT
CSF	Any	Blasts	Any number	Phone Ward/ Clinician	Pathologist/ MLT/ SMLT

Coagulation

Analyte	Age Range	Critical value	Units	Action to be taken	Responsible person for action
Fibrinogen	Any	<100	mg/dl	Phone Ward/ Clinician	MLT/SMLT
PT INR	Any	>5.0	N/A	Phone Ward/ Clinician	MLT/SMLT
APTT	Any	>100	Sec	<u>Phone Ward/ Clinician</u>	MLT/SMLT

CRITICAL VALUES FOR BIOCHEMISTRY

TEST	LOW CRITICAL VALUE	HIGH CRITICAL VALUE	ACTION TO BE TAKEN	RESPONSIBLE PERSON FOR ACTION
Bilirubin, total (newborn)	-	> 340 umol/L	Phone Ward/Clinician	MLT/SMLT
Calcium	≤ 1.6 mmol/L	≥ 3.5 mmol/L	Phone Ward/Clinician	MLT/SMLT
Carbamazepine	-	> 20 ug/ml	Inform Ward/Clinician	CS/SCS
Creatinine	-	> 400 umol/L (if not consistent with patient history)	Phone Ward/Clinician	MLT/SMLT
Digoxin	-	> 2.0 ng/ml	Phone Ward/Clinician	CS/SCS
Glucose (newborn) (Adult)	< 2.0 mmol/L < 2.5 mmol/L	> 20 mmol/L > 20 mmol/L	Phone Ward/Clinician	MLT/SMLT
Iron	-	> 55 umol/L	Phone Ward/Clinician	CS/SCS
Magnesium	< 0.5mmol/L	> 2.5 mmol/L	Phone Ward/Clinician	MLT/SMLT
Phenobarbital	-	> 80 ug/ml	Inform Ward/Clinician	CS/SCS
Phenytoin	-	> 40 ug/ml	Phone Ward/Clinician	CS/SCS
Phosphorus	< 0.3 mmol/L	> 4.0mmol/L	Phone Ward/Clinician	MLT/SMLT
Potassium	< 2.5 mmol/L	> 6.5 mmol/L	Phone Ward/Clinician	MLT/SMLT
Sodium	< 120 mmol/L	> 160mmol/l	Phone Ward/Clinician	MLT/SMLT
Urea	-	> 15 mmol/L (if not consistent with patient history)	Phone Ward/Clinician	MLT/SMLT
Valproic acid	-	> 1040 umol/l	Phone Ward/Clinician	CS/SCS

Critical Values for Bacteriology

Specimen	Result	To be phoned to	To be phoned by
CSF	Any positive Gram stain	Ward or treating doctor	MLT/SMLT/Pathologist
	Any clear positive antigen test	Ward or treating doctor	MLT/SMLT/Pathologist
	Any positive culture*	Ward or treating doctor	Pathologist/SMLT/MLT
	Meningococcus Listeria	CDCU	Pathologist/PMLT/SMLT
	Cryptococcal antigen test or Positive India Ink stain	Ward or treating doctor	MLT/SMLT/Pathologist
Blood	Cryptococcal antigen test	Ward or treating doctor	MLT/SMLT/Pathologist
Blood culture	Salmonella Typhi and Paratyphi Meningococcus Listeria	Ward or treating doctor CDCU	Pathologist/PMLT/SMLT
	Any yeast	Ward or treating doctor	MLT/SMLT/Pathologist
Stools	Shigella other than Shigella sonnei	Ward or treating doctor CDCU	Pathologist/SMLT
	Salmonella Typhi and Paratyphi	Ward or treating doctor CDCU	Pathologist/PMLT/SMLT
	Vibrio cholerae	CDCU	Pathologist/PMLT/SMLT
	Clostridium difficile toxin detected	Ward or treating doctor	MLT/SMLT/Pathologist
Urine	Positive Legionella antigen	Ward or treating doctor CDCU	Pathologist/SMLT
Tap water	Coliform and/or E.coli detected	Health Engineering Officer	SMLT
Bottled water	Outside norms	Health Office	SMLT
Food sample	Salmonella	Health Office CDCU	Pathologist/SMLT
Respiratory specimen	AAFB positive and/or TB GeneXpert positive	Ward Chest Clinic CDCU	MLT/SMLT
Non-respiratory specimen	AAFB positive and/or TB GeneXpert positive	Ward Chest Clinic	MLT/SMLT
Any specimen	AAFB and/or TB GeneXpert negative but culture positive	Ward Chest Clinic	MLT/SMLT

* excluding probable contaminants such as coagulase-negative staphylococcus and *Bacillus* sp. Known positive cases need not be phoned.

SMLT refers to the seniormost MLT posted to the bench performing the test

CDCU: Communicable Diseases Control Unit (Tel 2012739)

Critical Issues/Values for Blood Transfusion Service

Specimen	Result	To be phoned to	To be phoned by
Blood requested for Transfusion	Screening for antibody/ies Positive Incompatibility with all blood units crossmatched	Ward or treating doctor Pathologist on call after normal working hours	MLT/SMLT
	Direct Coombs' test Positive/Auto Positive-Least incompatible blood unit to be issued	Ward or treating doctor	MLT/SMLT
	Rare blood group e,g Rh D Negative-blood unit not available in stock at NBTS or other regional Crossmatching	Ward or treating doctor	MLT/SMLT
	Very rare blood group e.g Bombay Blood Group not available	Ward or treating doctor Pathologist on call after normal working hours Ward or treating doctor	MLT/SMLT
Antibody screen for ANC patient	Positive antibody/ies	Ward or treating doctor	MLT/SMLT

Critical Values for Malaria/Parasitology Service

Specimen	Result	To be phoned to	To be phoned by
Blood requested for Malarial parasites	Positive	Ward or treating doctor/CDCU Specialists on call after normal working hours Entomology Unit	MLT/SMLT
Blood requested for Filariasis	Positive	Ward or treating doctor/CDCU Specialists	MLT/SMLT
Urine requested for Schistosomes	Positive	Ward or treating doctor/CDCU Specialists	MLT/SMLT

TURNAROUND TIME

BACTERIOLOGY

SPECIMEN	TESTS PERFORMED	TURN AROUND TIME/HOURS
Urine	<ul style="list-style-type: none"> • Microscopy, Culture • Antibiotic Susceptibility Testing 	24-96
	<ul style="list-style-type: none"> • Legionella Antigen Test • Streptococcal Antigen Test 	Same day/24 Same day/24
Pus swabs, Frank Pus, Fluids, Tissues, Brain abscess, vaginal & Urethral swabs, Eye swabs, Cornea/Corneal swabs, Throat, Rectal& Ear swabs for Neonatal ICU, Throat, Ear, Nose Swabs (ENT)	<ul style="list-style-type: none"> • Gram Stain + Report, Culture • Antibiotic Susceptibility Testing • Zn Stain on fluids, frank pus, brain abscess and tissues • Cell count on ascitic fluids and peritoneal fluids 	48-96
CSF	<ul style="list-style-type: none"> • Gram stain + Report • Cell count • Culture • Soluble antigen test • Test for Cryptococcus antigen/India ink • Sensitivity 	48-96 Note: issue of preliminary report as soon as available
Catheter Tips & other Endotracheal Tips	<ul style="list-style-type: none"> • Culture • Antibiotic Susceptibility Testing 	48-96
Blood bottle (blood culture)	<ul style="list-style-type: none"> • Labelling and loading in apparatus • Identification of micro-organisms • Antibiotic Susceptibility Testing 	24-144 (1-6 days)
Blood	• Anti Streptolysin O Titre- Titration method done in batches	24-120
	• Widal-Titration Method	24-48
	• Brucella – Titration method	48-72
Blood bags	• Culture and identification	48-72
Stools	<ul style="list-style-type: none"> • Culture • Identification • Serotyping • Sensitivity 	48-96
	• Helicobacter Pylori Ag test-Rapid Test Cassette	Same day/24
	• Clostridium Difficile Toxine- Rapid Test Cassette	Same day/24

SPECIMEN	TESTS PERFORMED	TURN AROUND TIME/HOURS
Special Investigations	<ul style="list-style-type: none"> • Identification and sensitivity on specimen sent by Private Laboratories 	48-96
Organisms on Culture plates from Central Health Laboratory and Bacteriology Jeetoo Hospital	<ul style="list-style-type: none"> • Identification by MALDI-TOF Biotyper 	Same day/24
Nails	<ul style="list-style-type: none"> • Culture of Dermatophytes and other pathogenic fungi • Direct microscopy - KOH Mount • Colony Microscopy- Lactophenol Blue Mount 	3 weeks -1 month
Air Sampling (when requested)	<ul style="list-style-type: none"> • Culture and colony count 	48-72

SEL TB LABORATORY

The SEL laboratory operates only during normal working hours

TEST	TURNAROUND TIME
Microscopy for AFB	24hr/ same day
GeneXpert	24hr to 48 hr
Culture for TB	6-8 weeks
Sensitivity for TB	7 weeks after culture positive

BIOCHEMISTRY SECTION

- Tests done in the fast-track units and during emergency service (In Attendance service) include: Plasma glucose, Urea, Electrolytes, Calcium, Creatinine, Amylase, Bilirubin (new born),

The turnaround time is of one hour to 4hr30min.

- For all tests done through a fast track for hospital wards, the turnaround time is on the same day to 2 working days
- For all tests done on a routine basis (for out-patients, Health Centers, private cases), the turnaround time is of 3 working days up to 10 working days
- For HbA_{1c} the turnaround time is 5 to 7 days
- For Protein electrophoresis and Bence Jones Protein, turnaround time is 2 to 3 weeks

For Other miscellaneous tests turnaround time is on the same day.

Turnaround time for Biochemistry 2 tests	Minimum	Maximum
PSA/T/Markers/LDH	2 days	15 days
Hormones	2 days	10 days
Allergy	2 weeks	4 weeks
TFT (+Anti TPO/Tg/Anti TG)	1 week	2 weeks
Drugs	1 week	2 weeks
ACR	1 week	3 weeks
Growth Hormones	1 week	4 weeks
Ferritin (+Vit B12/Folate)	1 week	3 weeks
TSAT	1 month	6 weeks

BLOOD TRANSFUSION SERVICE

ROUTINE	TAT	EMERGENCY	TAT
Crossmatching	Same day	Crossmatching	30 to 45 mins
Type and Screen	Same day	Type and Screen	Same day
ABO /Rh Grouping	Same day: 2 days for ANC/cardiac patient	ABO /Rh Grouping	30 mins
DAT	Same day	DAT	30 mins
IAT (Antibody screen)	Same day		
Rh phenotyping	Same day		
Antigen Screen	Same day		
Antibody ID	Same day		
Auto absorption	2 days		
Elution	2 days		
Antibody Titer	Same day		
Cold Agglutinins	2 days		
Transfusion reaction investigation	1 week		
HLA B27 Typing	2 days		
HLA typing (Molecular)	1 week		
HLA Direct Matching	Same day		

ROUTINE	TAT	EMERGENCY	TAT
Request for Platelets conc	Same day	Request for Platelets conc	30 mins or up to 2 hrs for outstations if requested from NBTS (depending on availability of transport)
Request for FFP/Cryo ppt	Same day	Request for FFP/ Cryo ppt	30 mins or up to 2 hrs for outstations if requested from NBTS (depending on availability of transport)
Request for leuco depleted blood	Same day	Request for leuco depleted blood	60 to 90 mins

HISTOPATHOLOGY RESULTS

The turnaround time of specimen for histopathological exams from receipt of specimen to dispatch of results:

SPECIMEN	TURNAROUND TIME
Biopsies and small specimen	8-10 days
Partial Organs	12-15 days
Whole organs	15-20 days
Bones and calcified specimen (small)	8-10 days (Decalcification or more for Big bony tissue)
Bones and other Bony Tissues (Large)	20-30 Days or more (after Decalcification)

Note: Wards are phoned for improperly filled forms as specimen for Histopathology cannot be returned to wards or discarded

MALARIA/PARASITOLOGY DEPARTMENT

Test	Turnaround time
Pregnancy test	30 minutes
Urine micros (Schistosome)	Same day
Stool microscopy	Same day
Semen analysis	Same day (appointment)
RA latex	2-3 days
Rosewaaler	2-3 days
Malaria	Same day
Filariasis	One week

HAEMATOLOGY DEPARTMENT- TURNAROUND TIMES

ROUTINE	TAT	EMERGENCY (CHL)*	TAT
Hb Venous	15 mins	Hb Venous	15 mins
Full Blood Count	2 hours	Full Blood Count	30 mins
Platelet Count in Citrate Tube	2 hours	ESR (Moka Eye H)	1 hr 15 mins
ESR	3 hours	Prothrombin Time	30 mins
Retics Count	2 hours	APTT	30 mins
Prothrombin Time	2 hours	Fibrinogen Level	1 hr
APTT	2 hours	FDP	45 mins
Fibrinogen Level	2 hours	D Dimer	45 mins
FDP	2 hours		
D Dimer	2 hours	SPECIALISED	
		HbA ₂ Estimation	Batch
SPECIALISED - Thrombophilia Screening		Screening for G6PD deficiency	Same day
APCR (FV Leiden)	Batch-3wks	ANA	1 wk
Protein C	Batch-3wks	Ds-DNA	1 wk
Protein S	Batch-3wks	ENA	Batch
Anti-Thrombin III	Batch-3wks	Anti-Cardiolipin Antibodies	Batch
Lupus Anticoagulant-Screening	1 day	Anti-Phospholipid Antibodies	Batch

ROUTINE	TAT	EMERGENCY (CHL)*	TAT
Lupus Anticoagulant-Confirmation	Batch-1wk	Complement C3	Batch
Sputum for Eosinophils	1 day	Complement C4	Batch
Perl's Stain	1 day		
APT's Test	1 day	HIGHLY SPECIALISED	
HAM's Test	1 day	Bone Marrow Biopsy-staining	2 days
CSF for Blast Cells- Staining	1 day	Bone Marrow Biopsy-Report	7 days
Bronchial Wash for Blast Cells-Staining	1 day	Platelets Function Tests on PFA Analyzer	1 day
Screening for factor Inhibitors	2 days	Coagulation Factors Assay	1 day
Urine Haemosiderin	1 day	Von Willbrand Factor	Batch 1 wk
SPECIALISED		Inhibitor Assay-Bethesda Assay	2 days
Blood film staining/Report	2 days	Haemoglobin H	1 day
Hb Electrophoresis and Quantitation HPLC	Batch 1 wk	HbF/Kleihauer	Batch-1wk
Screening for red cell membrane defects- Osmotic Fragility	2 days	Sickle cells	Batch-1wk

For any test performed in batches, if result is required urgently, please contact the Haematology Department for needful

TURNAROUND TIME FOR TESTS DONE IN VIROLOGY DEPARTMENT

EXCLUDING WEEKENDS AND PUBLIC HOLIDAYS

HIV SEROLOGY LAB			
	Negative	Positive	
HIV	1-2 working days	Known cases	New case
		2-3 working days	1-2 weeks depending upon receipt of 2 nd specimen
CD4/CD8	1-2 working days		
HIV VIRAL LOAD	1 week		

HEPATITIS SECTION		
	TAT-Negative	TAT- Positive
Hepatitis B surface antigen (HBsAg)	3 working days	2-3 weeks
Hepatitis B surface antibodies (HBsAB)	1-2 weeks	
Hepatitis A IgM antibodies (HAV IgM)	1 week	
Hepatitis C virus antibodies	3 working days	2-3 weeks
Hepatitis B surface e antigen (HBeAg)	2 weeks	
Hepatitis B surface e antibodies (HBeAB)	2 weeks	
Hepatitis B viral load	1 week	
Hepatitis C viral load	1 week	

STD SECTION		
	TAT- NEGATIVE	TAT- POSITIVE
VDRL/VDRL+TPHA	1-2 working days	2-3 working days
Cytomegalovirus IgG Antibodies	1-2 weeks	2-3 weeks
Cytomegalovirus IgM Antibodies	1-2 weeks	2-3 weeks
Rubella IgG Antibodies	1-2 weeks	2-3 weeks
Rubella IgM Antibodies	1-2 weeks	2-3 weeks
Toxoplasma IgG Antibodies	1-2 weeks	2-3 weeks
Toxoplasma IgM Antibodies	1-2 weeks	2-3 weeks
Rapid test for Helicobacter Pylori Antibodies	1 week	

VIRUS ISOLATION UNIT	
TESTS	TAT
Leptospirosis antibodies	1-2 working days
Mycoplasma antibodies	1-2 working days
Rotavirus & Adenovirus rapid Ag test	1-2 working days
Norovirus Rapid Ag test	1-2 working days
Epstein Barr Virus IgG	1 week
Herpes simplex Virus (HSV 1 and HSV 2) IgG	1 week
Herpes simplex Virus (HSV1 and HSV 2) IgM	1 week

VIRUS ISOLATION UNIT	
Measles IgM antibodies	1 week
Measles IgG antibodies	2-3 working days
Varicella Zoster Virus (VZV) IgG Antibodies	1 week
Varicella Zoster Virus (VZV) IgM Antibodies	1 week
Parvovirus B19 IgM Antibodies	1 week
Parvovirus B19 IgG Antibodies	1 week
Zika IgG Antibodies	1 week
Zika IgM Antibodies	1 week

MOLECULAR BIOLOGY DEPARTMENT- TURNAROUND TIME

ROUTINE TESTS	TURNAROUND TIMES
SARS-CoV 2 Test	24 HRS
MERS CoV	24-48 hrs
CSF HSV	1 week
INFLUENZA (surveillance)	1 week
EBV	48 hrs
DENGUE/CHIKUNGUNYA	24 hrs
EMERGENCY TESTS	
SARS-COV 2 Test	12 hrs
MERS COV	24-48 hrs
DENGUE/CHIKUNGUNYA	24 hrs



DIRECTORY
LIST OF TESTS IN ALPHABETICAL ORDER

MEDICAL LABORATORY SERVICES LIST OF TESTS (IN ALPHABETICAL ORDER)

Zone: C: CHL **R:** Regional Lab. **P:** Peripheral Lab

Frequency: B: batch **D:** daily **W1:** weekly **WR:** when required **W2:** Twice weekly

Tests highlighted in BOLD are also carried out of Hours

TESTS	Specimen	Collection	Department	Zone C/R/P	Frequency
ABO Grouping	Blood	Plain tube/EDTA	BTS	C/R	D
Activated Protein C Resistance (APCR)	Blood	Tri-sodium Citrate	Haematology	C	D
Adenovirus	Stools	Sterile Container	Virology & Molecular	C	D
Albumin	Blood	Lithium Heparin	Biochemistry I	CR	D
Albumin (spot)	Urine	Plain container	Biochemistry I	C/R	D
Albumin Creatinine Ratio (ACR)	Urine	Plain container	Biochemistry 1	C	W1
Alkali denaturation Test	Blood	EDTA	Haematology	CR	D
Alkaline Phosphatase	Blood	Lithium Heparin	Biochemistry I	CR	D
Allergy Tests	Blood	Plain tube	Biochemistry II	C	B
Alpha fetoprotein (AFP)	Blood	Plain Tube	Biochemistry II	C	B
Amylase	Blood	Lithium Heparin	Biochemistry I	CR	D
Amylase	Urine	Plain container	Biochemistry I	CR	D
Antibodies Identification	Blood	Plain Tube	BTS	C	D
Antibodies Titration	Blood	Plain Tube	BTS	C	D
Antids DNA Antibodies	Blood	Plain Tube	Haematology	C	W1
Anti Streptolysin O Titre	Blood	Plain Tube	Bacteriology	C	D
Anti-ds DNA	Blood	Plain Tube	Haematology	C	W1
Antinuclear antibodies/ S-LE latex Test	Blood	Plain Tube	Haematology	C	W1
Anti-thrombin III test	Blood	Tri-sodium Citrate	Haematology	C	D
AntiThyroid peroxidase (TPO)	Blood	Plain Tube	Biochemistry II	C	B
Apheresis – Platelets/Red cells	Blood	Donor	BTS	C	D
Barr Bodies	Buccal Smears	Patient	Cytology	C	D
Bence Jones Protein	Urine	Plain container	Biochemistry I	CR	W1
Beta HCG	Blood	Plain Tube	Biochemistry II	C	B
Bicarbonate	Blood	Lithium Heparin	Biochemistry I	CR	D
Bile Pigments	Urine	Plain container	Biochemistry I	CR	D
Bile salts	Urine	Plain container	Biochemistry I	CR	D
Bilirubin (Babies)	Blood	Lithium Heparin	Biochemistry I	CR	D

MEDICAL LABORATORY SERVICES LIST OF TESTS (IN ALPHABETICAL ORDER)

Zone: C: CHL **R:** Regional Lab. **P:** Peripheral Lab

Frequency: B: batch **D:** daily **W1:** weekly **WR:** when required **W2:** Twice weekly

Tests highlighted in BOLD are also carried out of Hours

TESTS	Specimen	Collection	Department	Zone C/R/P	Frequency
Bilirubin (Amniotic Fluid)	Amniotic Fluid	Plain Tube	Biochemistry I	CR	D
Bilirubin (Conjugated)	Blood	Lithium Heparin	Biochemistry I	CR	D
Bilirubin (Total)	Blood	Lithium Heparin	Biochemistry I	CRP	D
Bleeding Time	Blood	Patient	Haematology	CR	D
Blood C&S	Blood	Blood Culture Bottle	Bacteriology	C	D
Blood Film Report	Blood	EDTA	Haematology	CRP	D
Blood Gases	Blood	Lithium Heparin	Biochemistry I	SSR	D
Bone Marrow Aspiration Procedure	Bone Marrow	Patient	Haematology	CR	WR
Bone marrow examination	Bone Marrow	EDTA	Haematology	CR	WR
Brucella agglutination test	Blood	Plain Tube	Bacteriology	C	D
Ca 15 – 3	Blood	Plain Tube	Biochemistry II	C	B
Ca 125	Blood	Plain Tube	Biochemistry II	C	B
Ca 19-9	Blood	Plain Tube	Biochemistry II	C	B
Calcium	Blood	Lithium Heparin	Biochemistry I	CRP	D
Calcium for Babies	Blood	Lithium Heparin	Biochemistry I	CR	D
Calcium	Urine	24h Specimen*	Biochemistry I	CR	W1
Carbamazepine	Blood	Plain Tube	Biochemistry II	C	D
Carcino-Embryonic Antigen (CEA)	Blood	Plain Tube	Biochemistry II	C	B
Catheter Tips	Catheter Tips	Tips	Bacteriology	C	D
CD4 & CD8	Blood	EDTA	Virology & Molecular	C	D
Chikungunya By Serology or PCR	Blood	Plain Tube	Virology & Molecular	C	D
Cholesterol Total	Blood	Lithium Heparin	Biochemistry I	CRP	D
Cholesterol-HDL	Blood	Lithium Heparin	Biochemistry I	C	D
Chromatography (amino acid)	Urine	Plain sterile Container	Biochemistry II	C	B

MEDICAL LABORATORY SERVICES

LIST OF TESTS (IN ALPHABETICAL ORDER)

Zone: C: CHL **R:** Regional Lab. **P:** Peripheral Lab

Frequency: B: batch **D:** daily **W1:** weekly **WR:** when required **W2:** Twice weekly

Tests highlighted in BOLD are also carried out of Hours

TESTS	Specimen	Collection	Department	Zone C/R/P	Frequency
Cold Agglutinins Identification	Blood	Plain Tube	BTS	C	D
Coomb's Test	Blood	Plain Tube/EDTA	BTS	CR	D
Cortisol	Blood	Lithium Heparin	Biochemistry II	C	B
<i>Clostridium difficile toxin</i>	Stools	Clean Container	Bacteriology	C	D
C Peptide	Blood	Plain Tube	Biochemistry II	C	B
C-Reactive Protein (CRP)	Blood	Plain / Lit.Heparin	Biochemistry I	CR	D
Creatinine	Blood	Lithium Heparin	Biochemistry I	CRP	D
Creatinine	Urine	24h Specimen	Biochemistry I	CR	D
Creatinine clearance (Blood + 24 hr Urine)	Blood + Urine	Lith. Hep/ Plain	Biochemistry I	C	D
Creatine Kinase (CK)	Blood	Lithium Heparin	Biochemistry I	CR	D
Cross Matching	Blood	Plain Tube/EDTA	BTS	CR	D
Cryoprecipitate Preparation	Blood	Blood Bag	BTS	C	D
CSF (Biochemistry)	CSF	Sterile container	Biochemistry I	CR	D
CSF (Blast Cells)	CSF	Sterile container	Haematology	CR	D
CSF M, C&S	CSF	Sterile Container	Bacteriology	C	D
CSF HSV	CSF	Sterile Container	Virology & Molecular	C	WR
Cyclosporine	Blood	EDTA	Biochemistry I	JNH	B
Cystine screen	Urine	Plain Container	Biochemistry I	C	D
Cytology (CSF for Malignant Cells)	CSF	Sterile Bijoux	Cytology	C	D
Cytology (Fine Needle Aspiration)	FNA	Smears	Cytology	C	D
Cytology (Fine Needle Aspiration)		Patient	Cytology	C	WR
Cytology Gynae	Cervical Smears	Cervical Smears	Cytology	C	D
Cytology Surgical	Sputum, Fluids	Clean container	Cytology	C	D
Cytomegalovirus IgG, IgM (CMV Abs)	Blood	Plain Tube	Virology & Molecular	C	W3
D-Dimers	Blood	Tri-sodium Citrate	Haematology	C	D
Dengue by serology or PCR	Blood	Plain Tube	Virology & Molecular	C	D
Digoxin	Blood	Plain Tube	Biochemistry II	C	D
Ear swab M, C&S	Ear swab	Swab	Bacteriology	C	D
EBV Antibodies	Blood	Plain Tube	Virology & Molecular	C	D

MEDICAL LABORATORY SERVICES LIST OF TESTS (IN ALPHABETICAL ORDER)

Zone: C: CHL R: Regional Lab. P: Peripheral Lab

Frequency: B: batch D: daily W1: weekly WR: when required W2: Twice weekly

Tests highlighted in BOLD are also carried out of Hours

TESTS	Specimen	Collection	Department	Zone C/R/P	Frequency
Electrolytes (Blood) (K, Na, Cl,)	Blood	Lithium Heparin	Biochemistry I	CRP	D
Electrolytes (Urine) (Na, K, Cl)	Urine	Plain Tube	Biochemistry I	CRP	D
Electrophoresis (Haemoglobin)	Blood	EDTA	Haematology	C	W1
Electrophoresis (Protein)	Blood	Plain Tube	Biochemistry I	C	W
Electrophoresis (Protein)	Urine	24h Specimen	Biochemistry II	C	W
Eosinophil Count	Blood	EDTA	Haematology	CR	D
Epstein Bar Virus IgG/IgM	blood	Plain tube/EDTA	Virology & Molecular	C	W1
ESR (Westergren)	Blood	EDTA	Haematology	CR	D
Eye swab M, C&S	Eye swab	Swab	Bacteriology	C	D
Factor assay V, VII, VIII, IX, X	Blood	Tri-sodium Citrate	Haematology	CR	D
FBC (Automated)	Blood	EDTA	Haematology	CR	D
Ferritin	Blood	Plain Tube	Biochemistry II	C	B
Fibrinogen Degradation Product (FDP)	Blood	Tri-sodium Citrate	Haematology	CR	D
Fibrinogen level	Blood	Tri-sodium Citrate	Haematology	CR	D
Filaria	Blood	Blood Film /EDTA	Parasitology	C	D
Filtered Blood	Blood	Plain Tube	BTS	C	D
Five- HIAA Screening	Urine	Plain Sterile Container	Biochemistry II	C	D
Fluids (Pleural etc) For M, C&S	Fluids	Sterile Container	Bacteriology	C	D
Folate	Blood	Plain Tube	Biochemistry II	C	B
Follicle Stimulating Hormone (FSH)	Blood	Plain Tube	Biochemistry II	C	B
Food Bacteriological Analysis	Food	Sterile Container	Bacteriology	C	W ₂
Fresh Frozen Plasma Preparation	Blood	Blood Bag	BTS	C	D
G-6-PD Screening Test	Blood	EDTA	Haematology	CR	D
Gamma GT	Blood	Lithium Heparin	Biochemistry I	CR	D
Gastric Juice Analysis	Gastric Juice	Clean Container	Biochemistry II	C	WR
Gentamycin	Blood	Plain Tube	Biochemistry II	C	D
Glucose (Plasma)	Blood	Fluoride Oxalate/ Fluoride EDTA	Biochemistry I	CRP	D
Glucose (Urine)	Urine	Plain Sterile Container	Biochemistry I	CRP	D

MEDICAL LABORATORY SERVICES

LIST OF TESTS (IN ALPHABETICAL ORDER)

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TESTS	Specimen	Collection	Department	Zone C/R/P	Frequency
Glycated Haemoglobin (Hb A1C)	Blood	EDTA	Biochemistry I	CRP	D
Growth Hormone	Blood	Plain Tube	Biochemistry II	C	B
Ham's Test	Blood	EDTA	Haematology	C	D
Hb (Haemoglobin)	Blood	EDTA	Haematology	CRP	D
Hb A2 estimation	Blood	EDTA	Haematology	CR	D
Hb F	Blood	EDTA	Haematology	CR	D
Hb H	Blood	EDTA	Haematology	CR	D
Hb S	Blood	EDTA	Haematology	CR	D
HCV Viral load	Blood	EDTA	Virology & Molecular	C	W1
HCV Western Blot	Blood	Plain Tube	Virology & Molecular	C	D
Helicobacter pylori antibodies	Blood	Plain Tube	Virology	C	D
Helicobacter antigen in stools	stools	Sterile container	Bacteriology	C	D
Hepatitis A IgM (HAV Ig M)	Blood	Plain Tube	Virology & Molecular	C	W1
Hepatitis B Antibodies (Anti HBs)	Blood	Plain Tube	Virology & Molecular	C	D
Hepatitis B Core antigen	Blood	Plain Tube	Virology & Molecular	C	W1
Hepatitis B E antigen	Blood	Plain Tube	Virology & Molecular	C	W1
Hepatitis B Surface Antigen (Hbs Ag)	Blood	Plain Tube	Virology & Molecular	C	D
Hepatitis B viral load	Blood	Plain tube	Virology & Molecular	c	D
Hepatitis C viral load	Blood	Plain Tube	Virology & Molecular	C	D
Hepatitis C Antibodies (HCV)	Blood	Plain Tube	Virology & Molecular	C	D
Herpes Simplex Virus (HSV ½ IgG/IgM)	blood	Plain Tube/ EDTA	Virology & Molecular	C	W1
HIV	Blood	Plain Tube	Virology & Molecular	C	D
HIV P24 antigen	Blood	Plain Tube	Virology & Molecular	C	D
HIV Viral load	Blood	EDTA	Virology & Molecular	C	W1
HIV Western Blot	Blood	Plain Tube	Virology & Molecular	C	D

MEDICAL LABORATORY SERVICES

LIST OF TESTS (IN ALPHABETICAL ORDER)

Zone: C: CHL R: Regional Lab. P: Peripheral Lab

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Tests highlighted in BOLD are also carried out of Hours

TESTS	Specimen	Collection	Department	Zone C/R/P	Frequency
HLA B27	Blood	Plain Tube	BTS	C	B
HLA Cross matching	Blood	Plain Tube	BTS	C	B
HLA Typing	Blood	Plain Tube	BTS	C	B
Human Chorionic Gonadotropin Hormone (BHCG)	Blood	Plain Tube	Biochemistry II	C	B
Immunophenotyping	Blood	Heparin	Haematology	C	B
Influenza Seasonal and Pandemic	Swab	VTM	Virology & Molecular	C	D
Inhibitors Screening Test	Blood	Tri-sodium Citrate	Haematology	C	B
INR	Blood	Tri-sodium Citrate	Haematology	CR	D
Insulin	Blood	Plain Tube	Biochemistry II	C	B
Iron	Blood	Plain Tube	Biochemistry I	C	B
Ketones	Urine	Plain Container	Biochemistry I	CRP	D
Ketones	Blood	EDTA/heparin	Biochemistry I	CR	D
Legionella antigen	Urine	Clean Container	Bacteriology	C	D
Leptospirosis by Serology and PCR	Blood	Plain Tube	Virology & Molecular	C	D
Intravascular catheter M,C&S	Line Tips	Tips	Bacteriology	C	D
Lithium	Blood	Plain Tube	Biochemistry I	BSH	D
Lupus inhibitor	Blood	Tri-sodium Citrate	Haematology	C	D
Luteinising Hormone (LH)	Blood	Plain Tube	Biochemistry II	C	B
M tuberculosis examination	Sputum etc	Sterile Container	Bacteriology	C	D
Magnesium	Blood	Li Heparin	Biochemistry I	CR	D
Malaria	Blood	Blood /EDTA	Parasitology	C	D
Measles IgM antibodies	Blood	Plain Tube	virology & molecular	C	W1
MERS-COV	SPUTUM	Plain Sterile Container	virology & molecular	C	WR
Methaemoglobin screening	Blood	EDTA	Haematology	C	D
Microalbumin (ACR)	Urine	Plain Sterile Container	Biochemistry I	C	B
Urine Microscopy	Urine	Plain Sterile Container	Biochemistry I	CRP	D
Mycology (hair) M, C&S	Plucked hair	Envelope	Bacteriology	C	D
Mycology (nail) M, C&S	Nail clippings	Envelope	Bacteriology	C	D

MEDICAL LABORATORY SERVICES

LIST OF TESTS (IN ALPHABETICAL ORDER)

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TESTS	Specimen	Collection	Department	Zone C/R/P	Frequency
Mycology (skin) M, C&S	Skin scrapings	Envelope	Bacteriology	C	D
Mycoplasma Antibodies	Blood	Plain Tube	Virology & Molecular	C	D
Myoglobin	Urine	Plain sterile Container	Biochemistry II	C	D
Novovirus Rapid Ag test					
Occult Blood	Stools	Plain Container	Biochemistry I	CRP	D
Mycology (skin) M, C&S	Skin scrapings	Envelope	Bacteriology	C	D
Measles IgG antibodies					
Osmolality	Blood	Lithium Heparin	Biochemistry II	C	D
Osmolality	Urine	Plain Container	Biochemistry II	C	D
Osmotic fragility	Blood	EDTA	Haematology	CR	D
Packed Cells Volume (PCV)	Blood	EDTA	Haematology	CR	D
Parvovirus B19 IgG/IgM Antibodies	blood	Plain Tube/EDTA	Virology & Molecular	C	W1
pH	Urine	Plain Container	Biochemistry I	CRP	D
Phenotyping and Genotyping	Blood	Plain Tube	BTS	C	D
Phenobarbital	Blood	Plain Tube	Biochemistry II	C	B
Phenytoin	Blood	Plain Tube	Biochemistry II	C	D
Phosphorus	Blood	Lithium Heparin	Biochemistry I	CR	D
Pleural/other fluids chemistry	Fluids	Plain container	Biochemistry 1	CR	D
Platelets Concentrate Preparation	Blood	Blood Bag	BTS	C	D
Platelets Count	Blood	EDTA/CITRATED	Haematology	CR	D
Porphyrin (Coproporphyrins / Porphobilinogen)	Urine	Plain Container	Biochemistry II	C	D
Post Mortem Examination	Tissue	Formol Saline	Histology	C	D
Pregnancy Test (Urine)	Urine	Clean container	Parasitology	C	D
Prolactin	Blood	Plain Tube	Biochemistry II	C	B
Prostate Specific Antigen (PSA)	Blood	Plain tube	Biochemistry II	C	B
Protein C	Blood	Tri-sodium Citrate	Haematology	C	D
Protein S	Blood	Tri-sodium Citrate	Haematology	C	D
Prothrombin Time / INR	Blood	Tri-sodium Citrate	Haematology	CR	D
PTTK	Blood	Tri-sodium Citrate	Haematology	CR	D

MEDICAL LABORATORY SERVICES

LIST OF TESTS (IN ALPHABETICAL ORDER)

Zone: C: CHL R: Regional Lab. P: Peripheral Lab

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TESTS	Specimen	Collection	Department	Zone C/R/P	Frequency
PTT-Lupus anticoagulant	Blood	Tri-sodium Citrate	Haematology	C	D
Pus M, C&S	Pus	Sterile container	Bacteriology	C	D
Red Cells Count (RCC)	Blood	EDTA	Haematology	CR	D
Reducing substances	Urine	Plain container	Biochemistry 1	CR	D
Renal Calculi	Calculus/stone	Plain container	Biochemistry I	C	B
Reticulocyte count	Blood	EDTA	Haematology	CR	D
Rhesus (D) Grouping	Blood	Plain Tube	BTS	C	D
Rhesus Phenotyping	Blood	Plain tube	BTS	C	D
Rheumatoid (Rh) Factor (Latex)	Blood	Plain Tube	Parasitology	C	D
Rose-Waaler test	Blood	Plain Tube	Parasitology	C	D
Rota Virus	Stools	Sterile Container	Virology & Molecular	C	D
Rubella virus IgG/IgM Antibodies	Blood	Plain Tube	Virology & Molecular	C	D
SARS-COV 2 Test	Nasophareal swab	VTM/NAT medium	Virology & Molecular	C	D
Schumm's Test (Methalbumin)	Blood	EDTA	Haematology	CR	D
SGOT/ AST	Blood	Lithium Heparin	Biochemistry I	CR	D
SGPT/ ALT	Blood	Lithium Heparin	Biochemistry I	CR	D
Sickling Test/ Haemoglobin S	Blood	EDTA	Haematology	CR	D
Specific gravity	Urine	Plain sterile Container	Biochemistry I	CRP	D
Specimen for histopathology	Tissue	Formol Saline	Histology	C	D
Semen Analysis	Seminal Fluid	Clean Container	Parasitology	C	WR
Sputum M, C&S	Sputum	Sterile Container	Bacteriology	C	D
Stercobilinogen	Stools	Clean Container	Biochemistry II	C	D
Stools M, C&S	Stools	Sterile Container	Bacteriology	C	D
Stools Microcopy for Ova & Protozoa	Stools	Clean Container	Parasitology	C	D
Swabs M, C&S	Swabs	Swabs	Bacteriology	C	D
Sweat Test	Sweat	Plain container	Biochemistry II	C	D
Tacrolimus	Blood	EDTA	Biochemistry II	C	W1
Testosterone	Blood	Plain Tube	Biochemistry II	C	B
Throat swab M, C&S	Throat swab	Swab	Bacteriology	C	D
Thrombin Time	Blood	Tri-sodium Citrate	Haematology	CR	D
Thyroid functions (FT4,FT3, TSH)	Blood	Plain Tube	Biochemistry II	C	B
Thyroglobulin/anti Thyroglobulin	Blood	Plain Tube	Biochemistry II	C	B
TIBC/TSAT	Blood	Plain Tube	Biochemistry II	C	B

MEDICAL LABORATORY SERVICES

LIST OF TESTS (IN ALPHABETICAL ORDER)

Zone: C: CHL **R:** Regional Lab. **P:** Peripheral Lab

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TESTS	Specimen	Collection	Department	Zone C/R/P	Frequency
Total Protein	Blood	Li Hep Tube	Biochemistry I	CR	D
Toxoplasma IgG/IgM Antibodies	Blood	Plain tube	Virology	C	W2
Triglycerides	Blood	Lithium Heparin	Biochemistry I	CRP	D
Urea	Blood	Lithium Heparin	Biochemistry I	CRP	D
Urea	Urine	Plain Container	Biochemistry I	CR	D
Urethral swab M, C&S	Urethral swab	Swab	Bacteriology	C	D
Uric Acid	Blood	Li Hep tube	Biochemistry I	CRP	D
Urine M, C&S	Urine	Sterile Container	Bacteriology	C	D
Urine Microscopy for Schistosomiasis	Urine	Clean Container	Parasitology	C	D
Urobilinogen	Urine	Clean Container	Biochemistry I	CR	D
Vaginal swab M, C&S	Vaginal swab	Swab	Bacteriology	C	D
Valproic acid	Blood	Plain Tube	Biochemistry II	C	D
Vancomycin	Blood	Plain tube	Biochemistry II	C	D
Varicella Zoster Virus (VZV) IgG/IgM antibodies	Blood	Plain Tube	Virology & Molecular	C	D
VDRL + TPHA / VDRL	Blood	Plain Tube	Virology & Molecular	C	D
VIIIC inhibitor (Bethesda Method)	Blood	Tri-sodium Citrate	Haematology	C	B
Virus Isolation	Fluids& Tissues	Sterile Container	Virology & Molecular	C	D
Vitamin B12	Blood	Plain tube	Biochemistry II	C	B
VMA Screen	Urine	Container (with Acid)	Biochemistry II	C	W
Water (Bottled) Analysis	Water	Bottled water	Bacteriology	C	D
Water (Tap) Analysis	Water	Sterile container	Bacteriology	C	D
Weil Felix Agglutination Test	Blood	Plain Tube	Virology & Molecular	C	D
White Cells Count (WCC)	Blood	EDTA	Haematology	CR	D
White Cells Differential Count (DC)	Blood	EDTA	Haematology	CR	D
Widal Test	Blood	Plain Tube	Bacteriology	C	D
Wound swab M, C&S	Wound swab	Swab	Bacteriology	C	D
Zika IgM antibodies	Blood	Plain tube/EDTA	Virology & Molecular	C	WR



DIRECTORY

LIST OF TESTS ACCORDING TO DEPARTMENTS

BACTERIOLOGY	BIOCHEMISTRY (special tests in bold)
Anti Streptolysin O Titre	Alanine Amino Transferase (ALT/SGPT)
Blood C&S	Albumin (strips)
Brucella agglutination test	Albumin
Catheter Tips C&S	Alkaline Phosphatase
<i>Clostridium difficile</i> toxin	Alpha Fetoprotein (AFP)
CSF M,C&S	Amylase (serum&urine)
Ear Swab for M,C&S	Aspartate Amino Transferase (AST/SGOT))
Eye Swab for M,C&S	Bicarbonate
Food microbiological analysis	Bile Pigments
Fluids (Pleural etc) M,C&S	Bile salts
Helicobacter pylori antigens	Bilirubin (Conjugated)
Intravascular catheter for M,C&S	Bilirubin (Total)
Legionella Antigen	Blood Gases
Mycology (nail) for M,C&S	CA125
Mycology (skin) for M,C&S	CA15-3
Mycology (hair) for M,C&S	CA19-9
Pus for M,C&S	Calcium
Sputum for M,C&S	Carbamazepine
Stools for M,C&S	Carcino- Embryonic Antigen (CEA)
Swabs (all) for M,C&S	Chloride
Throat Swab for M,C&S	Cholesterol Total
Urethral Swab for M,C&S	Chromatography Amino acid
Urine for M,C&S	Chromatography sugar
Vaginal Swab for M,C&S	Coproporphyrins
Water (Bottled) microbiological Analysis	Cortisol
Water (Tap) microbiological Analysis	C-Reactive Protein (CRP)
Widal Test	Creatinine
Wound Swab for M,C&S	Creatinine Clearance
Sputum for TB PCR by GeneXpert	Creatinine Kinase (CK)
Cryptococcus antigen in CSF and blood	CSF (cell, sugar, protein, chloride)
Pneumococcus antigen in blood	Cyclosporine

BIOCHEMISTRY (special tests in bold)	BIOCHEMISTRY (special tests in bold)
Cysteine Screen	Phenobarbital
Digoxin	Phenytoin
Dinitro Phenyl Hydrazine Test (DNPH)	Phosphorus
Electrolytes	Pleural fluid biochemistry
Electrophoresis (protein)	Porphobilinogen
Ferric Chloride Test	Porphyrin Screen
Ferritin	Porphyrin Feecal
Follicle Stimulating Hormone(FSH)	Prolactin
Gastric Juice Analysis	Prostate Specific Antigen (PSA)
Gamma Glutamyl Transferase (^γ GT)	Protein
Glucose, Plasma (Fasting/Random) (FBS,RBS)	Protein Bence Jones (BJP)
Glucose (strips)	Reducing substances
Glucose Tolerance Test (OGTT)	Reducing sugars
Glycated haemoglobin (HbA _{1c})	Renal calculi
Growth Hormone (GH)	Specific Gravity
High Density Lipoprotein Cholesterol (HDL)	Stercobilinogen
Human Chorionic Gonadotropin (βHCG)	Sweat Test
Hydroxy-indole Acetic Acid (5-HIAA)	Testosterone
Iron	Triiodo-Thyronine (Free T3)
Ketones	Thyroid Stimulating Hormone (TSH)
Luteinizing Hormone (LH)	Thyroxine (Free T4)
Magnesium	Triglycerides
Microalbumin (Albumin: Creatinine Ratio (ACR)	Urea
Microscopy (Urine)	Uric Acid
Myoglobin	Urine Chemicals (Glucose, Protein)
Biochemistry (special tests in bold)	Urine Pigments
Occult Blood (FIT)	Urobilinogen
Osmolality (Plasma & Urine)	Valproic Acid
Ph	VanylMandelic Acid (VMA Screen)

BIOCHEMISTRY (special tests in bold)	BLOOD TRANSFUSION
Urine Sodium	ABO Grouping
Urine Potassium	Anti bodies Identification
Fat Urine	Anti bodies Titration
Fat Globules	Apheresis – Platelets/Red cells
Allergy: TOTAL IgE	Cold Agglutinins titre
Phadiatop	Coombs' Test
Fx 5	Cross Matching
Specific Allergens	Cryoprecipitate Preparation
TIBC	Filtered Blood
TSAT	Fresh Frozen Plasma Preparation
C-Peptide	HLA B27
Insulin	HLA Cross matching
Tacrolimus	HLA Typing
Folate assay	Genotyping/Phenotype
Vitamin B12 assay	Platelets Concentrate
Thyroglobulin	Rhesus (D) Grouping
Gentamycin	Rhesus phenotyping
Vancomycin	Transfusion reaction investigation
Anti TPO	TTI + NAT testing of blood donors
	Type and Screen

HAEMATOLOGY	HAEMATOLOGY
Activated Protein C Resistance	Platelets Count
Alkali denaturation Test	Protein C
Anti-ds DNA	Protein S
Antinuclear antibodies/ ANF	Prothrombin Time / INR
Anti-thrombin III test	APTT
Bleeding Time	PTT-LA
Blood Film Report	Red Cells Count (RCC)
Bone Marrow Aspiration	Reticulocyte count
Bone Marrow Examination	Schumm's Test
Bone marrow examination	Sickling Test/Heamoglobin S
CSF (Blast Cells)	Thrombin Time
D-Dimers	White Cells Count (WCC)
Electrophoresis (Haemoglobin)	White Cells Differential Count
Eosinophil Count	Platelets Count
ESR (Westergren)	Protein C
Factor, assay V, VII, VIIC, IX, X	Protein S
FBC (Automated)	Prothrombin Time / INR
Fibrinogen Degradation Product	APTT
Fibrinogen level	PTT-LA
G-6-PD Screening Test	Red Cells Count (RCC)
Ham's Test	Reticulocyte count
Hb (Haemoglobin)	Schumm's Test
Hb A2 estimation	Sickling Test/Heamoglobin S
Hb F	Thrombin Time
HbH	White Cells Count (WCC)
HbS	White Cells Differential Count
Inhibitors Screening Test	
INR	
Lupus inhibitor	
Osmotic fragility	
Packed Cells Volume (PCV)	

HISTOPATHOLOGY / CYTOLOGY	IMMUNOHISTOCHEMISTRY
Barr Bodies	Anti- CD30 (Ber-H2)
Cytology(CSF for Malignant Cells)	Anti-CD34 (QBEnd/10)
Cytology(Fine Needle Aspiration)	Anti-CD 45, LCA (RP2/18)
Cytology Gynae	CD56 (MRQ-42)
Cytology Surgical	Anti-CD 79a (SP18)
Post Mortem Examination	Anti-Chromogranin A (LK2H10)
Specimen for Histopathology	Anti-Cytokeratin 5/6 (D5/16b4)
Barr Bodies	Anti-Cytokeratin 7 (SP52)
Cytology(CSF for Malignant Cells)	Anti-Cytokeratin 20(SP33)
Cytology(Fine Needle Aspiration)	Anti-Desmin (DE-R-11)
Cytology Gynae	DOG 1(SP31)
Cytology Surgical	Anti-E-cadherin (36)
Post Mortem Examination	Anti-EMA (E29)
Specimen for Histopathology	Anti-ER (SP1)
IMMUNOHISTOCHEMISTRY	GATA3 (L50-823)
Anti-Pan Keratin (AE1/AE3/PCK26)	Glial Fibrillary Acidic Protein (GFAP) (EP672Y)
Anti-p504s (SP116)	Anti-Hepatocyte Specific Antigen (Hep Par-10)
Ep-CAM/Epithelial Specific Antigen (Ber-EP4)	Anti-HER-2/neu (4B5)
Anti-Bcl-2 (124)	Anti-melanosome (HMB45)
Anti Bcl-6 (GI191E/A8)	Inhibin, alpha (MRQ-63)
Calponin-1 (EP798Y)	Anti-KI 67 (MIB-1) clone (30-9)
Anti-CD 3 (2GV6)	Anti-p53 (DO-7)
Anti-CD 5 (SP19)	Anti-p63 (4A4)
Anti-CD 7 (SP94)	Anti-PAX5 (SP34)
Anti-CD10 (SP 67)	Anti- PAX8 (MRQ-50)
Anti -CD 15 (MMA)	Anti-PR (1E2) Rabbit monoclonal Antibody
Anti-CD 20 (L26)	Anti- S100

IMMUNOHISTOCHEMISTRY	VIROLOGY
Actin Smooth Muscle (1A4)	Adenovirus
Anti-Synaptophysin (SP11)	CD4 & CD8
Anti-Thyroid Transcription Factor-1 (SP141)	Cytomegalovirus IgG, IgM
Anti-Vimentin (V9)	Dengue
Anti- S100 (Polyclonal)	EBV Antibodies
WT1 (6F-H2)	Helicobacter pylori antibodies
HER2 Dual In Situ Hybridization (CISH/SISH)	Hepatitis A IgM (HAV Ig M)
PARASITOLOGY	Hepatitis B Antibodies (Anti HBs)
Filaria	Hepatitis B Surface Antigen (HBs Ag)
Malaria	Hepatitis C Antibodies (HCV)
Pregnancy Test (Urine)	HIV
Sperm Analysis	Leptospirosis
Stools Microcopy (Ova & Protozoa)	Measles
Urine Microscopy for Bilharzia	Mycoplasma Antibodies
Rh latex	PCR – Real Time (HIV, HCV)
Rose Waaler	PCR Viral Load (HIV, HCV)
	Rota Virus
	Rubella virus Antibodies
	Toxoplasma antibodies
	Varicella
	VDRL / VDRL+TPHA /
	Virus Isolation

TELEPHONE DIRECTORY

Victoria Hospital	Switchboard 4020800	Internal	Direct line	Fax No
SONOO Janaki Dr (Mrs) Director Laboratory Services		3371	4257118 Mob: 52575054	4245848
ISSACK Mohamad Iqbal Dr Deputy Director Laboratory Services		3398	4270531	
Dr (Mrs) K.Bhujun Consultant Pathology		3348	4257804	
(Ms) S.Mudhoo Consultant Pathology		3348	4257804	
Dr (Mr) D.Purmanand Consultant Pathology		3384	4275531	
Dr (Mrs) P.Ramputty Consultant Pathology			4132789	
Dr. D Sookmanee, Consultant Pathology		3632	4273359	
Dr(Mrs) R.Swepaul-Sungkur Specialist/Senior Specialist Pathology				
Dr (Ms) N.J.S Fauzee Specialist/Senior Specialist Pathology				
Dr (Mr) I. Hosenie Specialist/Senior Specialist Pathology				
Dr (Mr) S.Bundhun Specialist/Senior Specialist Pathology		3348	4257804	
Dr (Mrs) Shewraj Specialist/Senior Specialist Pathology		3348	4257804	
Dr (Mrs) H.Rambojhun Specialist/Senior Specialist Pathology		3348	4257804	

Central Health Laboratory				
Unit / Section		Internal	Direct line	Fax No
Chief office			425 0593	4242945
Bacteriology	HOD PMLT		4270531 4280368	
Bacteriology	Laboratory	3398		
Bacteriology	Culture media	3413		
Bacteriology	Food section	3397		
Biochemistry	HBS	3499	4255940 4270238	4255940 4270238
Biochemistry 1	PMLT	3448	4247991	
Biochemistry	II	3455	4255989	
Blood Transfusion Service	HOD PMLT	3394	4240650 4244766	4273176
Blood Transfusion Service	X Match	3447	4240644	
Blood Transfusion Service	Donor testing	3456	4240659	
Blood Transfusion Service	HLA			
Blood Transfusion Service	Nurses	3494	4277192	
Blood Transfusion Service	Blood Donor Coordinator		4270711	
Cytology		3632	4273359	
Haematology		3382	4275531	
Histopathology		3383	4242956	
Parasitology	Malaria	3436	4272029	
Parasitology		3469		
Virology	HOD Office		4246375	4273584
Virology	PMLT		4279137	4273584
	Results HIV Virus isolation Hep, STD Mol. Biology	3560 3605 3591 3587		
Computer Room			4245777	
Office for enquiries		3381	4250769	
Stores		3460	4271567	4247979

Dr A. G. Jeetoo Hospital	Switchboard 2031001 2031056	EXT.	Direct	Fax
Biochemistry 1 (routine)		1307		
Biochemistry 2 2 (emergency)		1306		
Haematology		1310		
Parasitology		1311		
X-Match		1303	2123029	
Blood bank		1305		
Reception Bacteriology SEL		1300 1309	2102593 2137785	2137785
PMLT		1301	208 6432	210 5256
SSR National Hospital	Switchboard 2093400 2093500			
Biochemistry		2398/2399		
Haematology		2331		
Parasitology		2337		
X-Match		2335	2458796	
Blood bank		2332		
Reception Pathologist room		2330 2333		
PMLT		2336	243 3729	243 8768
Flacq Hospital	Switchboard 4022400			
Biochemistry1 Biochemistry 2 Biochemistry HbA1C		2197 2179 2046		
Haematology		2202		
Parasitology		2069		
X-Match		2089		
Blood bank		2178		
Reception		2084		
PMLT		2177	4132789	4138336

Jawaharlall Nehru Hospital	Switchboard 6037000	EXT.	Direct	Fax
Biochemistry		1160/1161		
Haematology		1164		
Parasitology		1163		
X-Match		1170		
Blood Bank		1170		
Reception		1166		
Pathologist Room		3413		
PMLT		1168	6277906	6271773
Souillac Hospital	Switchboard 6037100		6255532	
Laboratory		228		
Mahebourg Hospital	Switchboard 6319556		6319556	
Laboratory		285, 288		
Dr Y Cantin CHC Lab	Switchboard 4836683		4836812	
ENT Hospital (laboratory)	Switchboard 6862061	205	6862061	
Rodrigues Hospital	Switchboard 8321500		8321500	8312123
BSH laboratory			4556027	4556026
New Cancer Hospital			4602806	

INSIDE BACKCOVER

