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TABLE OF CONTENTS

CONTENT	PAGE
GENERAL INFORMATION	
Location	3
Scope of services	3
List of referral labs	3
Laboratory directory	4
Operating hours	5
Complaints and concerns	5
Laboratory policy on protection of personnel information	5
Specimen registration	6
Specimen collection	7
Specimen transportation	10
Transporation for COVID-19 Specimen	11
Specimen rejection	14
Criteria for specimen rejection	15
Result reporting and tracing	16
Tracing outsource results	16
Requesting test during LIS downtime	16
Critical result notification	17
LIST OF TEST	
Bacteriology and Mycology	18
Bacterial serology	24
Parasitology	26
Virology	30
Molecular diagnostics	38
Package / Profile	42
APPENDICES	
Appendix 1 - Types of sample containers	44
Appendix 2 - Request forms	51
Appendix 3 - List of outsource test	54
Appendix 4 – E-aduan manual	60

INTRODUCTION

The Medical Microbiology laboratory offers diagnostic, consultative, training and research in diagnostic bacteriology, virology, mycology, parasitology, serology, molecular and mycobacteriology. The services also include tests for screening and monitoring of diseases. The laboratory also participates in hospital wide infection control activities in relation to surveillance, control and prevention of nosocomial infections.

LOCATION

Department of Medical Microbiology, University Malaya Medical Centre provides medical microbiology and parasitology laboratory diagnostic and consultation services to University Malaya Medical Centre and external healthcare facilities. The Department is located at Level 5, *Menara Timur*, University Malaya Medical Centre.

SCOPE OF SERVICES

1. Bacteriology Diagnostic Unit
   To provide routine laboratory diagnostic identification, cultures and sensitivity tests.

2. Virology Diagnostic Unit
   To provide routine laboratory diagnostic identification, cultures, antigen and antibody detection. Tissue culture services are part of the unit, and serves to grow and maintain tissue cultures.

3. Mycology Diagnostic Unit
   To provide routine fungi identification, culture and sensitivity tests.

4. Immunology And Serology Diagnostic Unit
   To provide microbiological serology and immunology tests for diagnostic service.

5. Mycobacteriology Diagnostic Unit
   To provide routine mycobacterium identification, culture and drug susceptibility testing.

6. Advanced Diagnostic Unit
   To provide molecular diagnostic and monitoring assays for infectious diseases.

7. Parasitology Diagnostic Unit
   To provide routine laboratory diagnostic services for serological testing, stool and blood examinations, maggot identification and molecular diagnostic tests.

LIST OF REFERRAL LABORATORY

Where tests cannot be performed in–house, we outsource the tests to various labs. Please refer to Appendix 3 for the list of tests outsourced. The labs were selected based on certain criteria to ensure quality is maintained. The list of our referral labs include:

1. Institute of Medical Research (IMR)
2. Makmal Kesihatan Awam Kebangsaan (MKAK) Sungai Buloh
3. Gribbles Pathology (M) Sdn Bhd
4. Geneflux Biosciences Sdn Bhd
5. Neogenix Laboratoire Sdn Bhd
6. Lablink (M) Sdn. Bhd.
7. Pantai Premier Pathology Sdn. Bhd.

LABORATORY DIRECTORY

Staff / Location	Position	Unit Ext. Number
Clerk/ General office	Administration	2804
Prof Dr Jamal I-Ching Sam	Head of Department	2184
Prof Rina N Karunakaran	Clinical Microbiologist	2774
Prof Madya Dr Nadia binti Atiya	Clinical Microbiologist	2418
Prof Madya Dr Rukumani a/p Velayuthan	Clinical Microbiologist	2980
Dr Nuryana binti Idris	Clinical Microbiologist	2565
Dr Kartini binti Abdul Jabar	Clinical Microbiologist	2418
Dr Tang Soo Nee	Clinical Microbiologist	3083
Dr Izyani binti Md Shariff	Clinical Microbiologist	3266
Dr Amirah binti Amir	Parasitologist	03-7967 4752
Medical Officer Room	Medical Officer	3168
Scientific Officer Room	Scientific Officer	2982
Senior Medical Laboratory Technologist	Administration	2805
Bacteriology Diagnostic Unit		3163
Virology Diagnostic Unit		3039
Mycobacterial Diagnostic Unit		3166
Mycology Diagnostic Unit		4706
Parasitology Diagnostic Unit		3160
Advanced Diagnostic Unit		2191
Media Preparation, Sterilization & Decontamination Room		3167
Referral Laboratory Information		2805
Urgent Samples after office hour	Medical Officer Oncall / Microbiologist Oncall	03-7949 4422

OPERATING HOURS

The Department of Medical Microbiology, University Malaya Medical Centre receives specimens during the following hours

Internal Specimens	
Monday to Friday	24 Hours
Saturday, Sunday and Public Holiday	

External Specimens	
Monday to Friday	8:00 am – 4:00 pm
Saturday, Sunday and Public Holiday	**Closed**

For any urgent test request after office hours, please call the hospital main operator line at 03-7949 4422 to get in contact with the Pathologists/Medical Officers on-call.

COMPLAINT AND CONCERN

Any users wishing to raise a concern make a complaint or give suggestions, please log on to http://aduanpelanggan.ummc.edu.my/aduan_website/ or call 03-7949 2097. Please refer appendix 4 for the guidance.

LABORATORY POLICY ON PROTECTION OF PERSONAL INFORMATION

All personnel shall adhere to security procedures while working in the laboratory including ensuring security of patient information. The laboratory ensures that reports are released **ONLY** to clinical personnel who requested for the examination or clinical personnel who is involved in the management of the patient. Our department does not issu reports directly to patients.

In the rare circumstance when it is ascertained that the patient is seeking a second opinion or consultation that is relevant to his/her medical care, a **DUPLICATE** report may be released after approval by the reporting microbiologist and the circumstance formally recorded.

SPECIMEN REGISTRATION

Correct, legible, complete clinical information is required on all requisitions. Missing or illegible patient and physician information is a significant contributor to delayed reporting or possible rejection.

The following minimum demographic and test order information must be included on all requisitions.

a) Patient Name
Print patient's legal name legibly.

b) Unique Identifier
Provide a unique identifier that can be traced directly back to the patient, specifically their UMMC Patient Registration Number (RN), Malaysian NRIC number, Personal Identification Number (e.g. Military, Refugee, Immigration, Passport, etc.) or Facility Assigned Number. Date of Birth is not considered a unique identifier.

c) Gender & Date of Birth
Many reference ranges are determined by patient gender and/or age.

d) Tests / Examination Required
One requisition may be used to order multiple tests. Certain units/tests require specific requisitions.

e) Specimen Source & Patient History
Indicate specific source and/or site together with patient history.

f) Date & Time of Collection
Date and time must be recorded as well as the name or initials of the collector.

g) Referring (Ordering) Physician
Indicate the name and location of the ordering physician. UMMC physicians are provided with a stamp. When a stamp is not available for use, please provide the physician's full name and contact number..

SPECIMEN COLLECTION

SPECIMEN TYPE / TEST	COLLECTION GUIDELINES	OTHER COMMENTS
Abscess (aspirate or swab)	1. Remove surface exudate if present by wiping the open abscess with sterile saline or 70% alcohol. 2. Sample the leading edge of the open abscess. Sample must be acquired using aseptic technique. 3. A closed abscess should be aspirated with a needle and syringe after sterilizing the skin with iodine, chlorhexidine preparation or isopropyl alcohol wipes. 4. Sampling of the skin surface area can introduce colonizing bacteria that is not involved in the infectious process. 5. Aspirates in anaerobic transport tubes are acceptable for aerobic & anaerobic bacterial	1. Specimen should be transported as soon as possible. 2. Specify the location of abcess for optimal processing and provide all other pertinent information for example surgical infection, trauma,bite wound and etc.
Blood culture	1. Disinfect rubber stopper on top of the culture bottle using 70% isopropyl alcohol, wait one minute (60 seconds). 2. Disinfect the palpated venipuncture site using 70% alcohol swab by using a back and forth friction motion to cleanse the skin, cleanse for 15 seconds over a 4 cm x 4 cm area. 3. Allow to dry (**DO NOT** re-palpate vein). 4. Collect blood using needle and syringe or butterfly vacutainer system. Note: Bottle adaptors must be used when using the butterfly vacutainer system.	1. All blood cultures should be transported as soon as possible at room temperature. 2. **DO NOT** refrigerate the blood cultures.
Catheter	1. Remove the catheter aseptically and cut at least a 2 inch segment from the tip. 2. Place segment in a sterile container.	Transport as soon as possible to prevent drying out.
Cerebrospinal fluid	Sample volume should be collected minumum about 1-2 ml.	1. Transport as soon as possible. 2. Notify laboratory if an anaerobic culture is also needed.
Eye (Conjunctiva)	1. Sample eye using a pre-moistened swab with sterile saline. 2. Roll the swab over the conjunctiva. 3. Place swab in Amies transport medium.	Transport as soon as possible to prevent drying out as small amount of material is collected.
Feaces	1. Sample should be collected directly in a stool container or using the Cary Blair swab medium 2. If there is a delay in the transportation of sample, the use of Cary-Blair medium is recommended	For detection toxin of *Clostridium difficile,* sample should be sent as soon as possible. If there is delay within 24 hour, kept in 2-8°C.

SPECIMEN TYPE / TEST	COLLECTION GUIDELINES	OTHER COMMENTS
Fluid **(Pericardial, Peritoneal, pleural, synovial)**	1. Sample collected at least 2-5 ml in sterile container for aerobic and anaerobic culture	Transport as soon as possible at room temperature
Genital Tract **(Cervical, urethral)**	1. Remove mucus and secretions from the cervical os. 2. By using a new swab sample the endocervical canal. 3. Collect material expressed from the urethra on a sterile wire swab	Transport as soon as possible at room temperature
Nose	Sample is collected by inserting premoistend swab 1-2 cm into the nares and rotating the swab in nasal mucosa.	Generally used to detect carriage of *Staphylococcus aures*
Sputum **(Expectorated)**	1. Sample should be collected under the direct supervision of a nurse or physician. 2. Have the patient rinse or gargle with water to remove superficial flora. 3. Instruct the patient to cough deeply to produce lower respiratory secretions. 4. Collect in sterile container.	1. Presence of epithelial cells is indicative of contamination with oral flora. 2. Contaminated specimen is unacceptable for routine bacterial culture.
Sputum – Induced	1. Have the patient rinse the mouth with water after brushing the gums and tongue. 2. Using a nebulizer, have the patient inhale aprroximately 25 mL of 3-10% sterile saline solution. 3. Collect the induced specimen in a sterile container.	For induced sputum, sample will be processed even with the presence of epithelial cells.
Tissues and Biopsies	1. Sample is collected in a sterile container. 2. Transport as soon as possible 3. **DO NOT** use containers that have bacteriostatic saline or formalin.	1. Specify the type of tissue 2. Indicate the specific pathogen sought if it's other than routine bacteria.
Urine **(Midstream)**	**Women:** Instruct women to hold the labia apart, discard the first portion of voided urine and collect a midstream portion in a sterile container with boric acid. **Men:** Instruct men to retract the foreskin, discard the first portion of voided urine and collect a midstream portion in a sterile container with boric acid. Collect first-voided urine for *C.trachomatis* and *N.gonorrhoeae*	Cleansing before voiding may not necessarily improve the quality of the specimen. Keep refrigerated and transport to laboratory promptly.

SPECIMEN TYPE / TEST	COLLECTION GUIDELINES	OTHER COMMENTS
Urine **(Catheterized)**	Discard the first portion of urine, which likely to be contaminated with urethral flora and organisms that have colonized an indwelling catheter.	Transport as for midstream specimen. Catheterization may result in an iatrogenic urinary infection.
Urine **(Suprapubic aspirate)**	Urine is generally sterile, although transient colonization of the bladder may coccur. Transport aspirated urine in sterile container with boric acid.	This is the only type of urine specimen acceptable for anaerobic culture.
Wound **(Abscess and skin lesion)**	Decontaminate the open lesion first. Aspirate if posibble. If swabs must be used, prepare 2 swabs, 1 for staining and 1 for culture. Open or superfacial wounds are not suitable for anaerobic culturing. Identify and note down type and location of wound.	Transport as soon as possible at room temperature

SPECIMEN TRANSPORTATION

Specimens should be transported to the laboratory promptly.

1) **Cerebrospinal Fluid (CSF)**

   Cerebrospinal fluid (CSF) specimens should be transported at ambient temperature to the laboratory as soon as possible following the completion of the collection procedure. CSF for microbiology testing should never be refrigerated before or during transportion; as some organisms are fastidious and temperature sensitive, they may become non-viable.

2) **Serous Fluids**
   It is also recommended that pleural, pericardial, and peritoneal fluids be transported to the laboratory at ambient temperature. To preserve the integrity of these specimens the laboratory should be in receipt of these specimens as soon as possible otherwise, cell lysis, cellular degradation, and bacterial growth could occur and possibly affect the test results. Specimen should be refrigerated at 4 °C without a fixative.

3) **Synovial Fluids**
   Synovial fluid specimens may be transported at room temperature.

4) **BAL**
   Bronchoalveolar lavage (BAL) samples should be kept at room temperature and transported to the laboratory immediately after collection. Analysis of cell number, viability, and differential count should be performed within three hours. Preliminary tests demonstrate a deterioration of cellular characteristics after approximately six hours.
   Specimens that cannot be processed within 36 hours should be discarded.

5) **Urine**
   Urine should be transported to the laboratory immediately. If there is a delay, specimens may be refrigerated at 2 to 8 °C for up to 24 hours as it may still yield valid culture information. More than 24 hours, urine samples will be rejected.

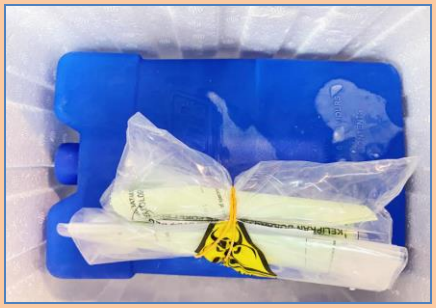
TRANSPORTATION FOR COVID-19 SPECIMEN

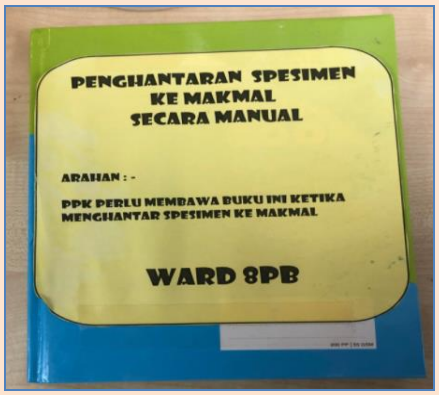
The objective of this procedure is to describe the necessary step by step processes relevant to transporting, receiving and handling of specimens submitted to the Department of Medical Microbiology, UMMC from all wards and clinics in UMMC.

The aim of this procedure is to ensure specimen integrity and overall quality specimen; and superior lab test results are being produced by Department of Medical Microbiology. This procedure is in compliance with the World Health Organization (WHO), Guidance on regulations for the transport of infectious substances 2019-2020.

Procedure for triple packaging:

LAYER	PROCEDURE	PICTURE
First layer	Specimen tube • Label the tube with patient's **ID**. • Secure the cap with a wrap using parafilm or masking tape. • Decontaminate by wiping the surface with 70% alcohol.	
Second layer	Leak-proof sealed biohazard plastic bag • Place the specimen into a leak-proof sealed biohazard bag. • Decontaminate by wiping the surface with 70% alcohol.	  

LAYER	PROCEDURE	PICTURE
Third layer	Leak-proof sealed biohazard plastic bag • The first bag is placed into the second leak-proof sealed biohazard plastic bag. • Label with patient's **ID**. • Decontaminate by wiping the surface with 70% alcohol.	 
Request form (IF EMR NOT AVAILABLE)	• Specify either Covid-19 positive/ PUI/ SARI/ILI/OT screening cases/healthcare worker on top right of the form. • Place the request form and two units of patient's label ID into leak-proof sealed biohazard bag. • Tie with rubber band	 
Polystyrene box	Use polystyrene box (or dedicated box) to transport the specimen to Department of Medical Microbiology. • Put in ice pack or coolant into polystyrene box to maintain temperature of 2 - 8 °C. • Decontaminate the polystyrene box before transport	

LAYER	PROCEDURE	PICTURE
		
Log book	• All sent specimens shall be documented in the log book. • Affix patient's label ID in the log book. • The specimen receiving staff must sign in upon receiving sample.	

REFERENCES:

1. World Health Organization, Guidance on regulations for the transport of infectious substances 2019 – 2020; https://www.who.int/ihr/publications/WHO-WHE-CPI-2019.20/en/

SPECIMEN REJECTION

The laboratory reserves the right to refuse improperly labelled specimens. The laboratory will take the necessary measures to maintain specimen integrity during the process of following up on the receipt of an improperly identified specimen. The laboratory recognizes that, in certain cases where the specimen is less common and involves an invasive procedure or could not otherwise be easily recollected, it may be acceptable to apply an exception to specimen rejection. Exceptions are applied using strict and explicit criteria in accordance with established procedures.

Generally, improperly identified specimens are not discarded until the collection site or the responsible requestor unit is notified. The high number of specimens received by the laboratory also makes it impossible to positively identify specimens that are not clearly labelled in accordance with specimen identification (labelling) criteria.

Rejection Criteria/*Kriteria penolakan*:

Different label on form and container *Label pada borang dan bekas spesimen berbeza*		Double request of test *Permintaan ujian berganda*	
Form not properly filled *Borang tidak lengkap*		Illigeble patient data *Data pesakit tidak jelas/tidak terperinci*	
Improper transport condition *Cara penghantaran tidak sesuai*		Incorrect specimen tube/container *Salah tiub/bekas spesimen*	
Insufficient sample sent *Sampel dihantar tidak mencukupi*		Leaking specimen *Spesimen bocor*	
No date/time of sampling *Tiada tarikh/masa pensampelan*		No diagnosis *Tiada diagnosis*	
No doctor's name/signature *Tiada nama /tandatangan doktor*		No patient label on form or specimen container *Tiada label pesakit pada borang atau bekas spesimen*	
No relevant clinical information *Tiada maklumat klinikal yang berkaitan*		No sample receive *Tiada sampel diterima*	
No test request *Tiada permintaan ujian*		Overnight/delayed sample *Sampel semalaman/ lewat dihantar*	
Request not clear *Permintaan ujian tidak jelas*		Sample condition unsuitable *Keadaan sampel tidak sesuai*	
Test had been cancelled by clinician/requester *Ujian telah dibatalkan oleh doktor/pemohon*		Test not offered *Ujian tidak ditawarkan*	
Tube broken *Tiub pecah*		Other : *Lain –lain :*	

Name of laboratory staff/*Nama Staf Makmal* :

CRITERIA FOR SPECIMEN REJECTION

1) **Unlabelled Specimens/ Incorrectly Labelled (Mislabelled) Specimens**
   i. Common specimen types (blood, urine, swabs, sputum, stool, etc.) which can be easily recollected and cannot with certainty be identified, will require recollection.
   ii. Specimens which are less common and more difficult to recollect (CSF, fluids, tissues, etc.) will require the person who collected them to come to the laboratory to identify the specimen and sign a waiver assuming responsibility for the identification of the specimen.
   iii. If the person responsible for collecting the specimen is unable with certainty to identify the specimen, the appropriate Clinician or designate and ordering physician will be notified.
   iv. Specimens which have names misspelled but have two other unique identifiers that match perfectly will have a notation/memo accompanying the patient report. Procedures ordered will be performed.

2) **Duplicate specimens**
   i. Except for sterile body fluids other than urine, other duplicate specimens received on the same day will not be processed**.**

3) **Leaking containers**
   i. A specimen is unacceptable if the outside of the container is grossly contaminated with leaked specimen.

4) **Contaminated specimen**
   i. Visible presence of specimen material other than the specified specimen shall be considered contaminants and the laboratory may require further details.

5) **Unacceptable specimen**
   i. Urine specimens kept up till 24 hours are unacceptable unless collected into containers with preservative or refrigerated.
   ii. Saliva is not acceptable in place of sputum.
   iii. Unsuitable for the procedure requested (saliva for sputum test, urine for blood tests)

6) **Delayed transportation**
   i. If the specimen has been in transit too long for a valid result, the specimen will be rejected.
   ii. Unless refrigerated, all urine specimens should be transported within 1/2 hour of them being taken.
   iii. Unless refrigerated, all respiratory specimens should be transported within 2 hours of them being taken.
   iv. Evidence of refrigeration should be obvious on receipt.
   v. Document the delay in transportation if the specimen has to be processed.

7) **Incorrect / Inappropriate transport containers or Preservatives**
   i. Specimens received in an incorrect container or without appropriate preservative or anti-coagulants, which would invalidate the results, will require recollection.
   ii. Sterile containers should be used where appropriate. A sterile screw capped universal container is appropriate for transportation of most specimens.
   iii. Transport medium for transportation of swabs should only be uncapped when swabs are to be inserted.
   iv. Samples for molecular testing should be sent to the laboratory within the stipulated time.

8) **Inappropriate test request or order**
   i. The test request form should include:
      - Name of patient
      - Age, sex and race
      - Registration number
      - Location (Ward / polyclinic / RUKA / etc).
      - Description of specimen source
      - Full name, signature and official stamp of requesting physician
      - Date and time of specimen collection
      - Diagnosis

   ii. Failure to provide the above mentioned details could cause a test request to be rejected unless another properly filled request form is sent.

RESULT REPORTING AND TRACING

1) Result Reporting

All results requested via the Electronic Medical Request (EMR) can be viewed in the iPesakit. For outsourced tests, results can be viewed in eDocument folder. For external results, results will be printed out and send to the respective institution by email or dispatched via porter.

2) Result Tracing

Any inquiry regarding result, kindly call the **RESPECTIVE** unit i.e. Bacteriology, Mycology, Mycobacteriology, Virology, Advanced Diagnostic or Senior Medical Lab Technologist. Result tracing will only be entertained if the result has exceeded its turnaround time (TAT) or for Human Immunodeficiency Virus (HIV) test results. Please refer to each test's'TAT in respective unit section.

TRACING OUTSOURCE RESULTS

Any inquiry regarding result, kindly call Senior Medical Lab Technologist. Results will be uploaded in iPesakit. Please refer to Appendix 4, Procedure to trace outsource laboratory reports.

REQUESTING TEST DURING LIS DOWNTIME

LIS (Laboratory Information System) downtime is a condition where the LIS in the laboratory cannot be used to perform the lab processes in which LIS assisted in result transfer. All samples will need to be registered, barcoded, processes and validated manually. Since the processes is laborious, delay of sample processing and turn around time will occur during the downtime. If any urgent test required during downtime, please contact Microbiologist/Medical Officer on-call. Please refer appendix 2 for manual request form.

CRITICAL RESULT NOTIFICATION

All critical results shall be informed to respective ward or clinic once the result is ready. Refer to list below for the critical result that shall be informed.

TEST	CRITICAL FINDING
Cerebrospinal fluid Culture and Sensitivity	Microscopy result (Normal or abnormal)
Cerebrospinal fluid antigen test	Positive rapid antigen test (Cryptococcus)
Sterile body fluid (brain abscess, eye/vitreous humour, joint fluid, pleural fluid , peritoneal fluid and ascetic fluid)	Positive result from Gram Stain
Blood culture	Positive result from gram stain or / and culture
Malaria parasite on blood film	Presence of malaria parasite

Critical Value Notification Policy

1) Only first time critical value will be reported
2) The authorised receiver shall only be:
    a. Medical Officer
    b. Postgraduate Medical Officer
    c. Nurse (SN & JM)
    d. Specialist
3) Result shall be reported according to the location specified on the form/request. It is the responsibility of the requester to inform the subsequent ward where the patient was transferred.
4) If location is not specified, result shall not be informed.
5) The first person who receives the notification shall accept and take the call even though the patient is not under his/her care. The same applies in the event the patient has transferred to other location.
6) The waiting time shall be until the ringing ends. Lab shall make second attempt after 5 to 10 minutes after the first call. Only 2 call attempts shall be made for each notification

TEST NAME: ACID FAST BACILLI – DIRECT SMEAR AND CULTURE				
CODE	**Sample**	**Container**	**Volume**	**TAT**
TB	Sputum	Sterile Universal container	≥ 5 mL	**Direct smear – 24 hours** **Culture – 8weeks**
		Note: **<u>At least three single specimens</u> should be collected within 8 to 24 hours intervals (<u>with at least one specimen obtained in the early morning</u>).**		
	BAL, tracheal secretion, bronchial secretion/washing, gastric lavage/aspirate/washing	Sterile Universal container	≥ 5 mL	**Direct smear – 24 hours** **Culture – 8weeks**
	Blood	Plain Blood Tube or SterileUniversal container	5 mL	
	Cerebrospinal fluid	CSF Sterile container	1 mL	
	Urine	Sterile Universal container **Note:** **Specimen obtained in the early morning**	> 20 mL	
	Stool	Stool container	-	**Direct smear – 24 hours** **Culture – 8weeks**
	Swab	Plain swab with Amies transportmedium	-	
	Synovial fluid, CSF, ocular fluids (aqueous, vitreous, subretinal), corneal scrapping, bone marrow aspirate, tissue, bone biopsy, pericardial fluid and pleural fluid	Sterile Universal container	As collected	
***Note: Send immediately to laboratory. If delay of more than 2 hours, refrigerate the sample at 2°C to 8°C and send to laboratory within 24 hours.** **Preliminary result will be produced within 1 week for *Mycobacterium tuberculosis* culture and sensitivity.**				

TEST NAME: BLOOD CULTURE AND SENSITIVITY				
CODE	**SAMPLE**	**Container**	**Volume**	**TAT**
AERO **PAED** **SBEA** **SBEP**	BLOOD	Adult: - Aerobic (green) - Anaerobic (orange)	8 - 10 mL	**Negative :** **- 6 days / 3 weeks** (infective endocarditis) **Positive:** **5 days (from the time it becomes positive)**
		Pediatric - Aerobic (pink) - Anaerobic (orange)	1 – 3 mL	
		*Note: For newborn, volume of blood in infants and younger children depends on age and weight of child with the range within 0.5 – 5 ml. If insufficient volume for anaerobic culture, then just sent in Pediatric aerobic bottle.		
***Note : Preliminary result will be produced within 24 hours for culture and sensitivity.**				

TEST NAME: BODY FLUID CULTURE AND SENSITIVITY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
SWAB	Body fluid such as peritoneal, pus, aspirate	Sterile Universal container	As collected	**5 days**
Note: Please keep samples at 2°C to 8°C (refrigerator) if there is a delay in sending to the laboratory. **Preliminary result will be produced within 24 hours for culture and sensitivity.**				

TEST NAME: CEREBROSPINAL FLUID CULTURE AND SENSITIVITY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
CSF	Cerebrospinal fluid	Sterile 7 mL container	As collected	**3 days**
Note: Please send immediately to the laboratory. **Preliminary result will be produced within 24 hours for culture and sensitivity.**				

TEST NAME: CLOSTRIDIUM DIFFICILE CULTURE AND TOXIN				
CODE	**Sample**	**Container**	**Volume**	**TAT**
CDTC	Stool	Stool container	Not more than half bottle	**4 days**
Note: Send specimen immediately to lab. Please use a separate request form from routine stool culture and sensitivity. Labeled as URGENT! If any delay in transporting, store sample at 2°C to 8°C and send to lab within 24 hours for optimum result. Sample may be refrigerated at 2°C to 8°C for up to 24 to 72 hours. **Preliminary results will be produced within 24 hours for culture and sensitivity.**				

TEST NAME: CLOSTRIDIUM DIFFICILE TOXIN				
CODE	**Sample**	**Container**	**Volume**	**TAT**
CDT	Stool	Stool container	Not more than half bottle	**1 day**
Note: Send specimen immediately to lab. Please use a separate request form from routine stool culture and sensitivity. Labeled as URGENT! If any delay in transporting, store sample at 2°C to 8°C and send to lab within 24 hours for optimum result. Sample may be refrigerated at 2°C to 8°C for up to 24 to 72 hours				

TEST NAME: CRYPTOCOCCUS DETECTION				
CODE	**Sample**	**Container**	**Volume**	**TAT**
CSF	Cerebrospinal fluid	Sterile 7 mL container	As collected	**3 days**
Note: Please send immediately to the laboratory. **Preliminary result will be produced within 24 hours for culture and sensitivity.**				

TEST NAME: EAR SWAB CULTURE AND SENSITIVITY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
SWAB	Ear Swab	Plain swab with Amies transportmedium with charcoal	-	**5 days**
Note: Please keep samples in room temperature if there is a delay in sending to the laboratory. Preliminary result will be produced within 24 hours for culture and sensitivity.				

TEST NAME: EYE SWAB CULTURE AND SENSITIVITY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
SWAB	Conjunctiva swab	Plain swab with Amies transportmedium with charcoal	-	**5 days**
	Conjunctiva, corneal scrapping	Direct inoculation onto blood agar, chocolate agar, sabouraud dextroseand Mac Conkey agar. **Note:** **Inoculate on agar at bedside, then make a smear on a glass slide and send promptly to lab. Alternatively, send swab in Amies transport medium.**	-	**5 days**
Note: Please keep samples in room temperature if there is a delay in sending to the laboratory. Preliminary result will be produced within 24 hours for culture and sensitivity.				

TEST NAME: FUNGAL BLOOD CULTURE AND SENSITIVITY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
FUGB	Blood	Adult - Aerobic (green)	5 - 10 ml	**Negative –30 days**
		Pediatric – Aerobic (pink)	1 -3 mL	
Note: Please keep samples at room temperature if there is a delay in sending to the laboratory. Preliminary result will be produced within 24 hours for culture and sensitivity.				

TEST NAME: FUNGAL CULTURE AND SENSITIVITY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
FUG	Skin scraping, nail clipping, hair	Skin scraping, nail clipping, hair	5 small pieces	**4 weeks**
		Note: Specimen should be wrapped with blackpaper.		
	CSF	CSF Sterile container	0.5 – 1.0 ml	
	Sputum, tracheal secretion, NPS, BAL	Sterile Universal container	3 - 5 ml	
	Nasal swab, throatswab	Plain swab with Amies transportmedium	-	
	Fresh tissue	Sterile Universal container	-	
	Pleural fluid, peritonealfluid, bone marrow aspirate, ascitic fluid	Sterile container	1 ml	
	Urine	Urine bottle	15 - 20 ml	
	Stool	Stool container	-	
	Corneal scraping	SDA agar plate	-	
Note: Please keep samples in 2°C to 8°C (refrigerator) if there is a delay in sending to the laboratory. Preliminary result will be produced within 1 week for fungal culture.				

TEST NAME: GENITAL TRACT CULTURE AND SENSITIVITY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
STD	High vaginal swab, urethral swab	Swab with Amies transport medium with charcoal	-	**5 days**
		Swab for Neisseria - Please keep samples at room temperature if there is a delay in sending to the laboratory.		
	Secretions, tissues	Sterile Universal container	As collected	**5 days**
Note: Please keep samples in 2°C to 8°C (refrigerator) if there is a delay in sending to the laboratory. Preliminary result will be produced within 24 hours for culture and sensitivity.				

TEST NAME: RESPIRATORY CULTURE AND SENSITIVITY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
RESP	Sputum, tracheal secretion / aspirate, NPS	Sterile Universal container	As collected	**5 days**
	Throat swab	Plain swab with Amies transport medium	-	**5 days**
	Nasal swab	Plain swab with Amies transport medium	-	**5 days**
	Pernasal swab (whooping cough)	Wire swab with Amies transport medium with charcoal	-	**7 days**
	Pleural fluid / BAL / tissues	Universal container	As collected	**5 days**
Note : Preliminary result will be produced within 24 hours for culture and sensitivity.				

TEST NAME: SLIT SKIN SMEAR				
CODE	**Sample**	**Container**	**Volume**	**TAT**
LEPRO	**Skin**	**Plain Slide**	**-**	**3 days**

TEST NAME : STERILITY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HI	TPN, antibiotic solution, contact lens, contact lens solution, attest tube	Appropriate container	-	**4 days**
	Settle plate	Blood Agar plate	-	**4 days**
	Plasma, blood packed cell, plasma, platelet, FFP	Sterile Universal container	10 ml	**4 days**
	Swab from bone bank	Plain swab with Amies transport medium	-	**4 days**
	Milk from kitchen	Milk bottle/ sterile container	60 to 100 ml	**4 days**
*** Note: Please keep samples at room temperature if there is a delay in sending to the laboratory. Preliminary result will be produced within 24 hours for culture and sensitivity.**				

TEST NAME: STOOL CULTURE AND SENSITIVITY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
STOOL	Stool	Plain swab with Cary Blair Medium	-	**5 days**
		Note: Please indicate if vibrio cholera is suspected.Transportation in alkaline peptone water (APW) is recommended for suspected cholera cases if delay in transportation is expected. Selenite broth transportation is recommended for suspected salmonella cases.		
	Rectal swab	Plain swab	-	**4 days**
Note: Please keep samples at room temperature if there is a delay in sending to the laboratory. Preliminary result will be produced within 24 hours for culture and sensitivity.				

TEST NAME: TIPS CULTURE AND SENSITIVITY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
SWAB	Drainage tube tip, catheter tips	Sterile Universal container	-	**5 days**
		Note: Routine culture of drainage tube tips/ catheter tips are not encouraged.		
	Intravascular catheter Tips	Sterile Universal container	-	**5 days**
Note: Please keep samples at 2°C to 8°C (refrigerator) if there is a delay in sending to the laboratory. Preliminary result will be produced within 24 hours for culture and sensitivity.				

TEST NAME: TISSUE CULTURE AND SENSITIVITY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
SWAB	Tissue, bone	Sterile Universal container	As collected	**5 days**
Note: Please keep samples at 2°C to 8°C (refrigerator) if there is a delay in sending to the laboratory. Preliminary result will be produced within 24 hours for culture and sensitivity.				

TEST NAME: URINE CULTURE AND SENSITIVITY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
URINE	Urine (MSU), nephrostomy urine, bladder tap, catheter urine	Urine container	15 – 20 mL	3 days
		Note: Specimen send in urine container with boric acid can be kept at room temperature and sent to lab within 24 hours. CBD (Foley's catheter) tips are not recommended to be sent for culture as growth frequently represents distal urethral flora. Urine from continuous bladder drainage (CBD) bags should not be sent for culture.		
Note: Please keep samples in 2°C to 8°C (refrigerator) if there is a delay in sending to the laboratory Preliminary result will be produced within 24 hours for culture and sensitivity.				

TEST NAME: BRUCELLA ANTIBODY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
BRUC1 **BRUC2** **BRUC3**	Blood	Plain blood tube	3 - 5 mL	**7 working days**
Note: Please keep samples at 2°C to 8°C (refrigerator) if there is a delay in sending to the laboratory. **For Bacterial serology assays: Convalescent specimen should be taken ≥ 2 weeks from the acute specimen.**				

TEST NAME: CHLAMYDIA IgG & IgM				
CODE	**Sample**	**Container**	**Volume**	**TAT**
CHAB1 **CHAB2** **CHAB3**	Blood	Plain blood tube	3 - 5 mL	**7 working days**
Note: Please keep samples at 2°C to 8°C (refrigerator) if there is a delay in sending to the laboratory. **For Bacterial serology assays: Convalescent specimen should be taken ≥ 2 weeks from the acute specimen.**				

TEST NAME: CRYPTOCOCCUS NEOFORMANS ANTIGEN				
CODE	**Sample Type**	**Container**	**Volume**	**TAT**
CRYP	Blood	Plain or EDTA tube	1 – 5 mL	**1 working day**
	CSF antigen	CSF Sterile container	At least 0.5 mL	
	CSF culture			**30 days**
Note: Please keep samples at 2°C to 8°C (refrigerator) if there is a delay in sending to the laboratory				

TEST NAME: LATENT TUBERCULOSIS INFECTION (TSPOT TB-IGRA)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
LTBI	Blood	Heparin tube	Adult 6 mL Child 2-9 year 4 mL Chlid < 2 years 2 mL	**3 working days**
Note: Blood sample not more than 24 hours. Do not refrigerate/freeze sample				

TEST NAME: LEGIONELLA IgG & TOTAL ANTIBODY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
LEGI1 **LEGI2** **LEGI3**	Blood	Plain blood tube	3 - 5 mL	**7 working days**
Note : **Please keep samples at 2°C to 8°C (refrigerator) if there is a delay in sending to the laboratory.** **For Bacterial serology assays: Convalescent specimen should be taken ≥ 2 weeks from the acute specimen.**				

TEST NAME: LEPTOSPIRA IgM ANTIBODY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VLEPS	Blood	Plain blood tube	3 - 5 mL	**4 working days**
Note : Please keep samples at 2°C to 8°C (refrigerator) if there is a delay in sending to the laboratory. **Note: For bacterial serology assays: Convalescent specimen should be taken ≥ 2 weeks from the acute specimen.**				

TEST NAME: *PNEUMOCYSTIS JIROVECII* (PCP)				
CODE	**Sample Type**	**Container**	**Volume**	**TAT**
PCP	Induced Sputum, BAL,Tracheal secretion	Sterile Universal container	3 mL	**7 Working days**
Note: Please keep samples at 2°C to 8°C (refrigerator) if there is a delay in sending to the laboratory.				

TEST NAME: RAPID PLASMA REAGIN TEST				
CODE	**Sample**	**Container**	**Volume**	**TAT**
RPR	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: TREPONEMA PALLIDUM TOTAL ANTIBODIES				
CODE	**Sample**	**Container**	**Volume**	**TAT**
TPPA	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: ACANTHAMOEBA CULTURE				
CODE	**Sample**	**Container**	**Volume**	**TAT**
ACAN	Corneal scrapping /biospy	Sterile universal container	As collected	**14 working days**
	Eye swab / Eye wash	Sterile universal container		
	Contact lens	Sterile universal container		
	Contact lens solution	Sterile universal container		
	Other fluid	Sterile universal container		
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: TYPHUS ANTIBODY (IF)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
TYIF1 **TYIF2** **TYIF3**	Blood	Plain blood tube	3 - 5 mL	**7 working days**
Note : **Please keep samples at 2°C to 8°C (refrigerator) if there is a delay in sending to the laboratory.** **For Bacterial serology assays: Convalescent specimen should be taken ≥ 2 weeks from the acute specimen.**				

TEST NAME: VDRL				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VDRL	CSF	CSF Sterile container	1 to 2 mL	**7 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: IDENTIFICATION OF DIPTERAN LARVAE				
CODE	**Sample**	**Container**	**Volume**	**TAT**
PMAGT	Tissue	Sterile universal container	As collected	**1 ½ to 2 months**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: IDENTIFICATION OF ECTOPARASITES / HELMINTHS				
CODE	**Sample**	**Container**	**Volume**	**TAT**
PMAGT	Tissue	Sterile universal container	As collected	**3 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: LEISHMANIA DONOVANI				
CODE	**Sample**	**Container**	**Volume**	**TAT**
PBLE	Blood	EDTA blood tube	3 – 5 mL	**1 working day**
	Bone Marrow	Sterile universal container	1 mL	**2 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: PARASITES DETECTION				
CODE	**Sample**	**Container**	**Volume**	**TAT**
USCH	Urine	Sterile universal container	As collected	**1 working day**
	High vaginal swab/Low vaginal swab	Plain swab		
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: MALARIA DETECTION				
CODE	**Sample**	**Container**	**Volume**	**TAT**
MALA	Blood	EDTA blood tube	3 to 5 mL	**Direct smear – 2 hours**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: MICROFILARIAE DETECTION				
CODE	**Sample**	**Container**	**Volume**	**TAT**
FILA	Blood	EDTA blood tube	3 to 5 mL	**2 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: STOOL FEME				
CODE	**Sample**	**Container**	**Volume**	**TAT**
PARAS	Stool	Stool container	As collected	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

SEROLOGY

TEST NAME: AMOEBIASIS IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
SAMO	Blood	Plain blood tube	3 to 5 mL	**7 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: CYSTICERCOSIS IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
SCYS	Blood	Plain blood tube	3 to 5 mL	**7 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: ECHINOCOCOSIS IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
SECH	Blood	Plain blood tube	3 to 5 mL	**7 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: FILARIASIS IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
SFIL	Blood	Plain blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: LEISHMANIASIS IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
SLEI	Blood	Plain blood tube	3 to 5 mL	**7 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: SCHISTOSOMIASIS IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
SSCH	Blood	Plain blood tube	3 to 5 mL	**7 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: STRONGYLOIDIASIS IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
SSTR	Blood	Plain blood tube	3 to 5 mL	**7 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: TOXOCARIASIS IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
STOC	Blood	Plain blood tube	3 to 5 mL	**7 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

ANTIGEN DETECTION AND CULTURE

TEST NAME: CYTOMEGALOVIRUS ANTIGEN (IF)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VADC	Broncho alveolarlavage (BAL)	Sterile Universal container	-	**2 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: CYTOMEGALOVIRUS (CULTURE)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VCMV	Broncho alveolar lavage (BAL), Urine	Sterile Universal container	-	**14 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: ENTEROVIRUS (CULTURE)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VI	Throat swab / rectal swab / vesicle swab	Flocked swab with Virustransport medium	**-**	**30 days**
	Stool	Stool container	**-**	**30 days**
	Biopsy, CSF	Sterile Universal container / CSF Sterile container	**-**	**30 days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: HERPES SIMPLEX VIRUS 1/2 ANTIGEN (IF)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VADH	Vesicle scrapping	Sterile flocked swab	-	**2 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: HERPES SIMPLEX VIRUS 1/2 (CULTURE)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VI	Vesicle swab	Flocked swab with Virus transport medium	**-**	**14 working days**
	CSF	CSF sterile container	-	**14 working days**
	Biopsy	Sterile universal container		
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: RESPIRATORY VIRUSES ANTIGEN (IF)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VADR	Nasopharyngeal secretion, tracheal secretion, broncho alveolar lavage (BAL)	Sterile Universal container	As collected	**2 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: RESPIRATORY VIRUSES (CULTURE)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VI	Nasopharyngeal secretion, tracheal secretion, broncho alveolar lavage (BAL)	Sterile Universal container	As collected	**14 working days**
	Throat swab	Flocked swab with virus transportmedium	-	**14 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: ROTAVIRUS ANTIGEN				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VROTA	Stool	Stool container	-	**2 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: VARICELLA ZOSTER VIRUS ANTIGEN (IF)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VADZ	Vesicle scrapping	Sterile flocked swab	-	**2 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: VARICELLA ZOSTER VIRUS (CULTURE)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VVZV	Vesicle swab	Flocked swab with virus transport medium	-	**14 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

VIRAL SEROLOGY

TEST NAME: CHIKUNGUNYA ANTIBODY SEROLOGY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VCHIK	Blood	Plain / EDTA blood tube	3 to 5 mL	**7 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: CYTOMEGALOVIRUS IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
CMVG	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: CYTOMEGALOVIRUS IgM				
CODE	**Sample**	**Container**	**Volume**	**TAT**
CMVM	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: DENGUE IgG & IgM				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VDEN	Blood	Plain / EDTA blood tube	3 to 5 mL	**4 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: DENGUE NS1 Ag/IgG/IgM (ANTIGEN/ANTIBODY)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VDEND	Blood	Plain / EDTA blood tube	3 to 5 mL	**2 hours**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: EPSTEIN – BARR VIRUS VCA IgM				
CODE	**Sample**	**Container**	**Volume**	**TAT**
EBIMM	Blood	Plain / EDTA blood tube	3 to 5 mL	**4 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: EPSTEIN – BARR VIRUS VCA IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
EBIMG	Blood	Plain / EDTA blood tube	3 to 5 mL	**4 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: HEPATITIS A – HAV IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HAVG	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: HEPATITIS A – HAV IgM				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HAVM	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: HEPATITIS B – Anti-HBs				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HBSAB	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: HEPATITIS B – HBsAg				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HBSAG	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: HEPATITIS B – HBsAg Quantification				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HBAGQ	Blood	Plain / EDTA blood tube	3 to 5 mL	**7 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: HEPATITIS B – HBeAg				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HBEAG	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: HEPATITIS B – HBeAb				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HBEAB	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: HEPATITIS B – Anti-HBc IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
CORAB	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: HEPATITIS B – Anti-HBc IgM				
CODE	**Sample**	**Container**	**Volume**	**TAT**
COREM	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: HEPATITIS C – Anti-HCV				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HCV3	Blood	Plain / EDTA blood tube	3 to 5 ml	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: HERPES SIMPLEX 1/2 IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VHSG	Blood	Plain / EDTA blood tube	3 to 5 mL	**4 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: HERPES SIMPLEX 1/2 IgM				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VHSM	Blood	Plain / EDTA blood tube	3 to 5 ml	**4 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: HIV Ag/Ab				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HIVC	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: JAPANESE B ENCEPHALITIS IgM				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VJEM	Blood	Plain / EDTA blood tube	3 to 5 mL	**7 working days**
VJEMC	CSF	CSF Sterile container	0.5 to 1 mL	
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: MEASLES IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VMEG	Blood	Plain / EDTA blood tube	3 to 5 mL	**4 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: MEASLES IgM				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VMEM	Blood	Plain / EDTA blood tube	3 to 5 mL	**4 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: MUMPS IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VMUG	Blood	Plain / EDTA blood tube	3 to 5 mL	**4 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: MUMPS IgM				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VMUM	Blood	Plain / EDTA blood tube	3 to 5 mL	**4 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: PARVO VIRUS B19 SEROLOGY (IgG and IgM)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VPB19	Blood	Plain / EDTA blood tube	3 to 5 mL	**4 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: RUBELLA IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
RIGG	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: RUBELLA IgM				
CODE	**Sample**	**Container**	**Volume**	**TAT**
RIGM	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: SARS-CoV-2 RAPID ANTIBODY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
COVGM	Blood	Plain / EDTA blood tube	3 to 5 mL	**4 hours**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: SARS-CoV-2 RAPID ANTIGEN				
CODE	**Sample**	**Container**	**Volume**	**TAT**
COVAG	Nasophargeal swab, nasal swab	Flexible FLOQswab with breaking point 80 -100mm	-	**4 hours**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: TOXOPLASMA IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
TIGG	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: TOXOPLASMA IgM				
CODE	**Sample**	**Container**	**Volume**	**TAT**
TIGM	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: VARICELLA ZOSTER IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VVZG	Blood	Plain / EDTA blood tube	3 to 5 mL	**4 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: VARICELLA ZOSTER IgM				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VVZM	Blood	Plain / EDTA blood tube	3 to 5 mL	**4 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: BK VIRUS DNA				
CODE	**Sample**	**Container**	**Volume**	**TAT**
BKVMT	Blood	2 tubes of EDTA blood tube	3 to 5 mL	**7 working days**
Note : Sample must be sent to the lab within 6 hours after sample collection				

TEST NAME: CHLAMYDIA TRACHOMATIS AND NEISSERIA GONORRHOEAE PCR (CT/NG)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
CNPCR	Urine (female & male)	Sterile Universal container	5 mL	**1 working day**
		Female urine: Store at 4°C for up to 8 days, or 15°C - 30°C for24 hrs **Male urine: Store at 4°C for up to 8 days, or 15°C - 30°C for 3days**		
	Endocervical swabPharyngeal swab Vaginal swab Extragenital sampleeg: throat swab, rectal swab	Xpert Vaginal / EndocervicalSpecimen Collection Kit	-	**1 working day**
		Store sample at 2°C - 30°C, stable up to 60 days and transportat 2°C - 30°C to the laboratory.		

TEST NAME: CMV DNA VIRAL LOAD				
CODE	**Sample**	**Container**	**Volume**	**TAT**
CMVMT	Blood	2 tubes of EDTA blood tube	3 to 5 mL	**7 working days**
	Tissue	Sterile Universal Container	Min 2 cm	
Note : Sample must be sent to the lab within 6 hours after sample collection				

TEST NAME: HBV DNA VIRAL LOAD				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HBVMT	Blood	2 tubes of Plain / EDTA blood tube	3 to 5 mL	**7 working days**
Note: Please keep all samples for molecular tests at 4°C if there is a delay in sending to the laboratory. Blood samples must be kept in an upright position and send to the laboratory without shaking the samples.				

TEST NAME: HEPATITIS C VIRUS GENOTYPING				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HCVGE	Blood	2 tubes of Plain / EDTA blood tube	3 - 5 mL each	**7 working days**
Note: Please keep all samples for molecular tests at 4°C if there is a delay in sending to the laboratory. Blood samples must be kept in an upright position and send to the laboratory without shaking the samples.				

TEST NAME: HEPATITIS C VIRUS VIRAL LOAD (QUANTITATIVE)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HCVT	Blood	2 tubes of Plain / EDTA blood tube	3 - 5 mL each	**7 working days**
Note: Please keep all samples for molecular tests at 4°C if there is a delay in sending to the laboratory. Blood samples must be kept in an upright position and send to the laboratory without shaking the samples.				

TEST NAME: HEPATITIS C VIRUS RNA (QUALITATIVE)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HCVL	Blood	2 tubes of Plain / EDTA blood tube	3 - 5 mL each	**7 working days**
Note: Please keep all samples for molecular tests at 4°C if there is a delay in sending to the laboratory. Blood samples must be kept in an upright position and send to the laboratory without shaking the samples.				

TEST NAME: HIV RNA –VIRAL LOAD				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HIVMT	Blood	2 tubes of EDTA blood tube	3 to 5 ml	**7 working days**
Note: Sample must be sent to the lab within 4 hours after sample collection				

TEST NAME: HIV DRUG RESISTANT – 2 GENES				
CODE	**Sample**	**Container**	**Volume**	**TAT**
DRA1	Blood	2 tubes of EDTA blood tube	3 to 5 ml	**14 working days**
Note: Sample must be sent to the lab within 4 hours after sample collection				

TEST NAME: HIV DRUG RESISTANT – 3 GENES				
CODE	**Sample**	**Container**	**Volume**	**TAT**
DRA2	Blood	2 tubes of EDTA blood tube	3 to 5 ml	**14 working days**
Note: Sample must be sent to the lab within 4 hours after sample collection				

TEST NAME: HUMAN PAPILLOMAVIRUS DNA				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HPVPCR	Cervical swab, liquid based cytology specimen	Dry tube swab, Thinprep or SurePath	-	**7 working days**

TEST NAME: MALARIA PCR				
CODE	**Sample**	**Container**	**Volume**	**TAT**
PMALA	Blood	EDTA blood tube	3 – 5 mL	**7 working days**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: RAPID DETECTION OF INFLUENZA A & B RESPIRATORY SYNCYTIAL VIRUS (RSV) PCR				
CODE	**Sample**	**Container**	**Volume**	**TAT**
FRPCR	Nasopharyngeal swab, nasal swab, throat swab, nasal aspirate/wash specimens	UTM-RT transport medium for: Viruses, Chlamydia, Mycoplasma & Ureaplasma	3 – 5 mL	**1 working day**
Note : Sample can be stored up for to 24 hours at 2°C - 30°C or up to 7 days at 2°C - 8°C. Transport to laboratory at 2°C - 8°C.				

TEST NAME: RESPIRATORY PANEL WITH SARS-CoV-2				
CODE	**Sample**	**Container**	**Volume**	**TAT**
BVRVP	Nasopharyngeal swab, nasal swab, throat swab, nasal aspirate/wash specimens	UTM-RT transport medium for: Viruses, Chlamydia, Mycoplasma & Ureaplasma	3 – 5 mL	**2 hours**
Note : Sample can be stored up for to 24 hours at 2°C - 30°C or up to 7 days at 2°C - 8°C. Transport to laboratory at 2°C - 8°C.				

TEST NAME: SARS-CoV-2 RT-PCR				
CODE	**Sample**	**Container**	**Volume**	**TAT**
VNCOV	Nasopharyngeal swab,nasal swab, throat swab,nasal aspirate/wash specimens	Virus transport medium (VTM)	3 – 5 mL	**1 working day**
Note : Sample can be stored up for to 24 hours at 2°C - 30°C or up to 7 days at 2°C - 8°C. Transport to laboratory at 2°C - 8°C.				

TEST NAME: SARS-CoV-2 RAPID RT-PCR				
CODE	**Sample**	**Container**	**Volume**	**TAT**
RNCOV	Nasopharyngeal swab,nasal swab	Virus transport medium (VTM)	3 – 5 mL	**2 hours**
Note : Sample can be stored up for to 24 hours at 2°C - 30°C or up to 7 days at 2°C - 8°C. Transport to laboratory at 2°C - 8°C.				

TEST NAME: TB PCR				
CODE	**Sample**	**Container**	**Volume**	**TAT**
TBXPE	Validated specimen types: Sputum (induced /expectorated)	Sterile Universal Container	≥ 1 mL	**3 working days**
	Non-validated specimentypes: - BAL - gastric lavage / aspirate - Lymph nodes - Fresh tissue (without preservatives)	Sterile Universal Container	As collected	**3 working days**
	- CSF	CSF Sterile Container	≥ 1 mL	
Note: Send immediately to laboratory. If delay, samples should be kept at 2°C to 8°C (refrigerator) for7 days or maximum of 35°C for 3 days.				

TEST NAME: CMV AND BK VIRUS DNA				
CODE	**Sample**	**Container**	**Volume**	**TAT**
CMVMT	Blood	2 tubes of EDTA blood tube	3 to 5 mL	**7 working days**
Note : Sample must be sent to the lab within 6 hours after sample collection				

TEST NAME: HEPATITIS B POST VACCINATION HBsAg and HBsAb				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HEPBS	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: HEPATITIS SCREENING PACKAGE (I) HBsAg, HBsAb and Anti-HAV IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HEABS	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: HEPATITIS SCREENING PACKAGE (II) HBsAg, HBsAb, Anti-HCV and Anti-HAV IgG				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HEPP	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory				

TEST NAME: BLOOD BORNE VIRUS SCREEN (I) HBsAg, HBsAb, Anti-HCV and HIV Ag/Ab				
CODE	**Sample**	**Container**	**Volume**	**TAT**
IFS1	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: BLOOD BORNE VIRUS SCREEN (II) HBsAg, HBsAb, HIV Ag/Ab, Treponema Pallidum Total Antibodies and RPR				
CODE	**Sample**	**Container**	**Volume**	**TAT**
IFS2	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: HEPATITIS B CARRIER HBsAg, HBeAg and Anti-HBe				
CODE	**Sample**	**Container**	**Volume**	**TAT**
HB1	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: SYPHILIS SCREEN Treponema pallidum Total Antibodies				
CODE	**Sample**	**Container**	**Volume**	**TAT**
TPPA	Blood	Plain / EDTA blood tube	3 to 5 mL	**1 working day**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

TEST NAME: AFB CULTURE AND SENSITIVITY Sputum X1, sputum X2 and sputum X3				
CODE	**Sample**	**Container**	**Volume**	**TAT**
TB	Sputum	Sterile Universal Container	5 to 10 mL	**Direct smear – 24 hours** **Culture – 8 weeks**
Note: Please keep all samples at 4°C if there is a delay in sending to the laboratory.				

APPENDIX 1:

Table 1: Sample collection containers for microbiological specimen collection.

<table>
<tr>
<td>
</td>
<td>Sterile Universal Container

Body fluid
Biopsy tissue
Sputum
BAL

Tip
Sample for TB PCR
Urine for viral culture</td>
</tr>
<tr>
<td></td>
<td>Urine Container

Sterile Plastic Container with 2% Boric Acid
Only for urine Culture and Sensitivity</td>
</tr>
<tr>
<td>
</td>
<td>Stool Container
(Sterile Plastic Container with Spatula Brown Cap)

Rotavirus

Clostridium difficile toxin and culture

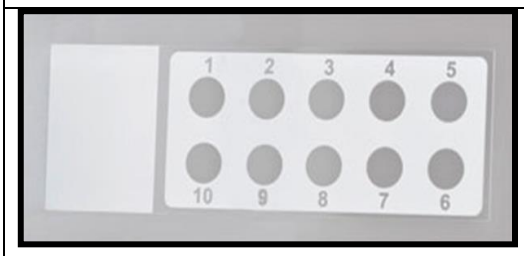
Parasitology FEME</td>
</tr>
</table>

	**STERILE CONTAINER (CSF)** Bacteriology culture and sensitivity Tuberculosis culture and sensitivity Virus culture PCR
	**PLAIN TUBE** Blood collection for serological test Bacteria serology Virus serology Parasitology serology
	**EDTA TUBE** Blood collection for molecular and serological test Blood Films for Microscopy Parasite (BFMP)



LITHIUM HEPARIN TUBE

Blood collection -SPOT.TB (IGRA) for latent tuberculosis infection (LTBI) detection



TEFLON COATED SLIDE

Virus antigen test

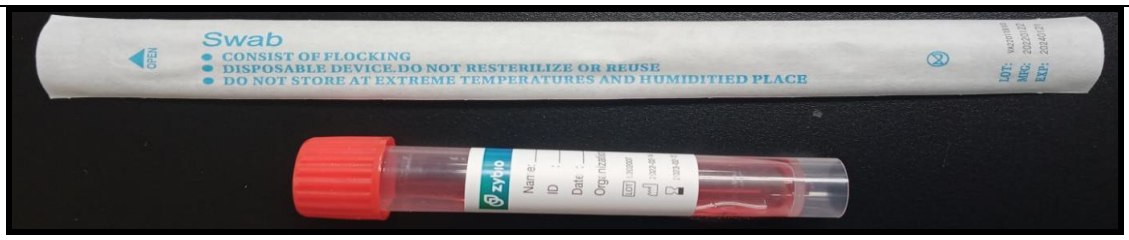
HSV & VZV Scraping



STERILE PLAIN SWAB

Rayon swab with plastic shaft

Eye swab for Chlamydia Antigen detection



FLOCKED SWAB & VIRUS TRANSPORT MEDIUM (VTM)

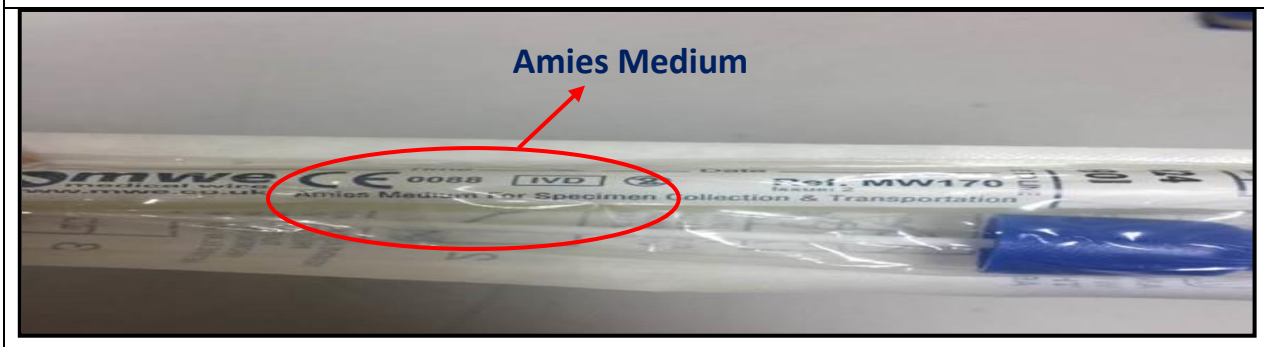
A solid molded plastic applicator shaft with a tip

Virus culture

SARS-CoV-2 RT-PCR

SARS-CoV-2 RTK-Ag

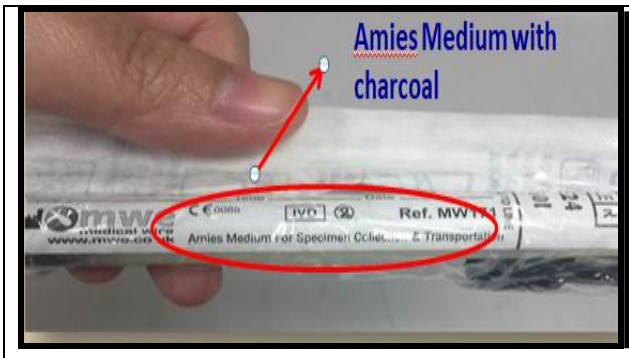
Virus PCR



STERILE SWAB IN AMIES TRANSPORT MEDIUM

Rayon swab with plastic shaft

General bacteriology for culture and sensitivity



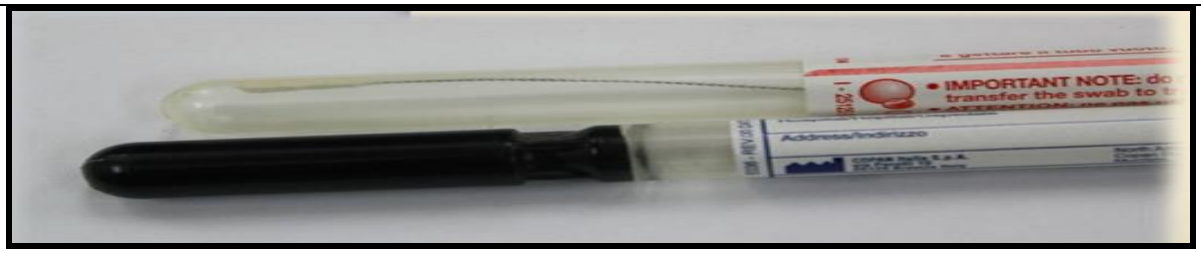


STERILE SWAB IN AMIES TRANSPORT MEDIUM WITH CHARCOAL

Rayon swab with plastic shaft

Genital specimen for culture and sensitivity

Eye (conjunctival) culture and sensitivity

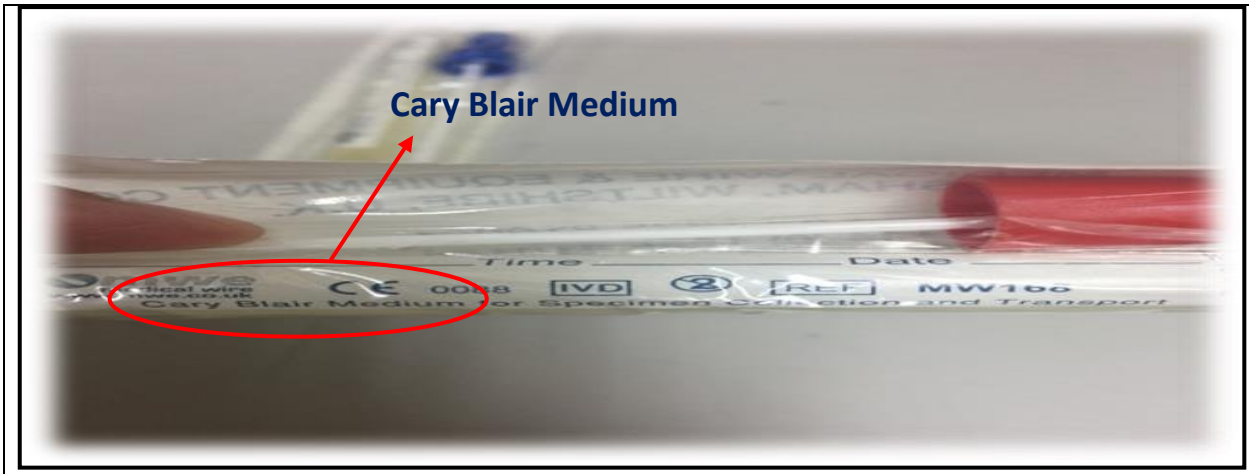


STERILE WIRE SWAB IN AMIES TRANSPORT MEDIUM WITH CHARCOAL

Fine flexible wire with rayon

Pernasal Swab for whopping cough

Genital male swab (urethral / penile) for Bacteriology culture and sensitivity



STERILE SWAB WITH CARY BLAIR MEDIUM

Rayon swab with plastic shaft

Stool culture and sensitivity

Clostridum difficile toxin



STERILE FLOCK SWAB

Rayon swab with plastic shaft

Vaginal swab specimen for Human papilloma virus PCR testing



WHITE PACK WITH RED TOP CONTAINING LIQUID TRANSPORT MEDIUM AND A SWAB (GENEXPERT VAGINAL/ENDOCERVICAL SPECIMEN COLLECTION KIT)

For vaginal swab rectal swab, pharynx swab, eye swab specimens

Used for *Chlamydia trachomatis*/*Neisseria gonorrhoeae* PCR testing

APPENDIX 2:

Below is the manual request form use in Medical Microbiology Laboratory

1) Bacteriology request form (BK-MIS-114-E01 & BK-MIS-113-E01)



PUSAT PERUBATAN, UNIVERSITI MALAYA

BK-MIS-114-E01

BACTERIOLOGY REPORT

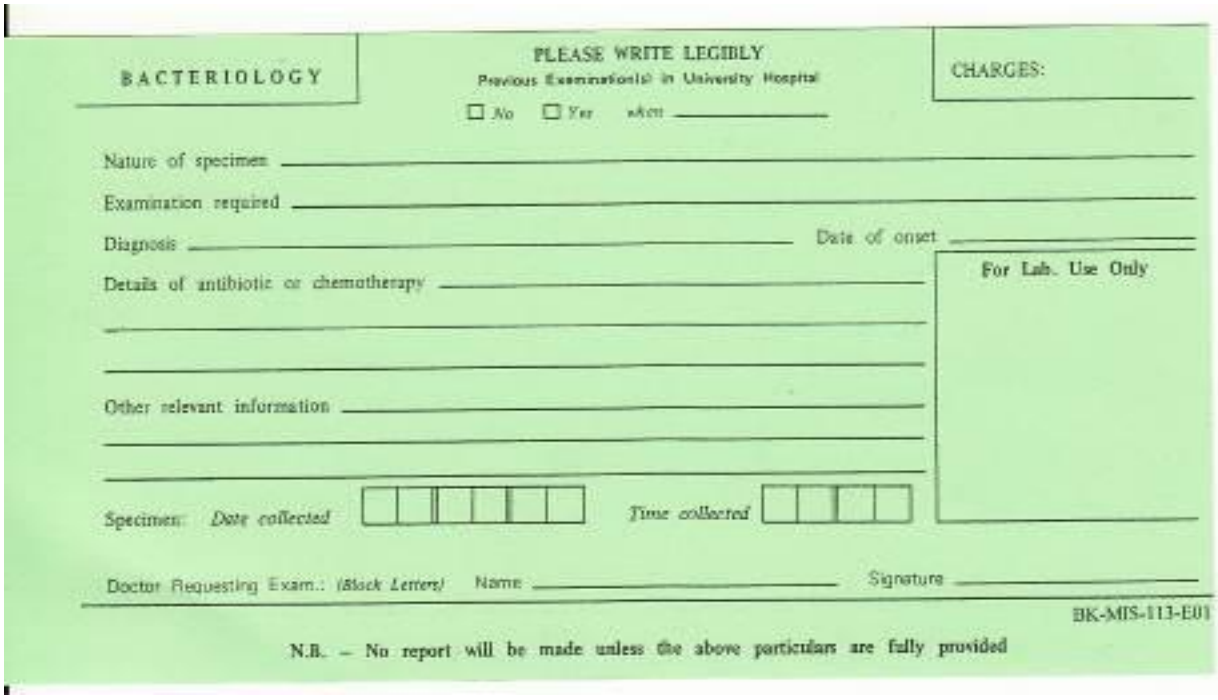
R.N.
Name
Sex
Age
Occ:
Unit

Taken on: .....

Received on: .....

Nature of specimen:

BACTERIOLOGY | Date | Signature



BACTERIOLOGY

PLEASE WRITE LEGIBLY

Previous Examination(s) in University Hospital

☐ No ☐ Yes when _____

CHARGES:

Nature of specimen _____

Examination required _____

Diagnosis _____ Date of onset _____

Details of antibiotic or chemotherapy _____

For Lab. Use Only

Other relevant information _____

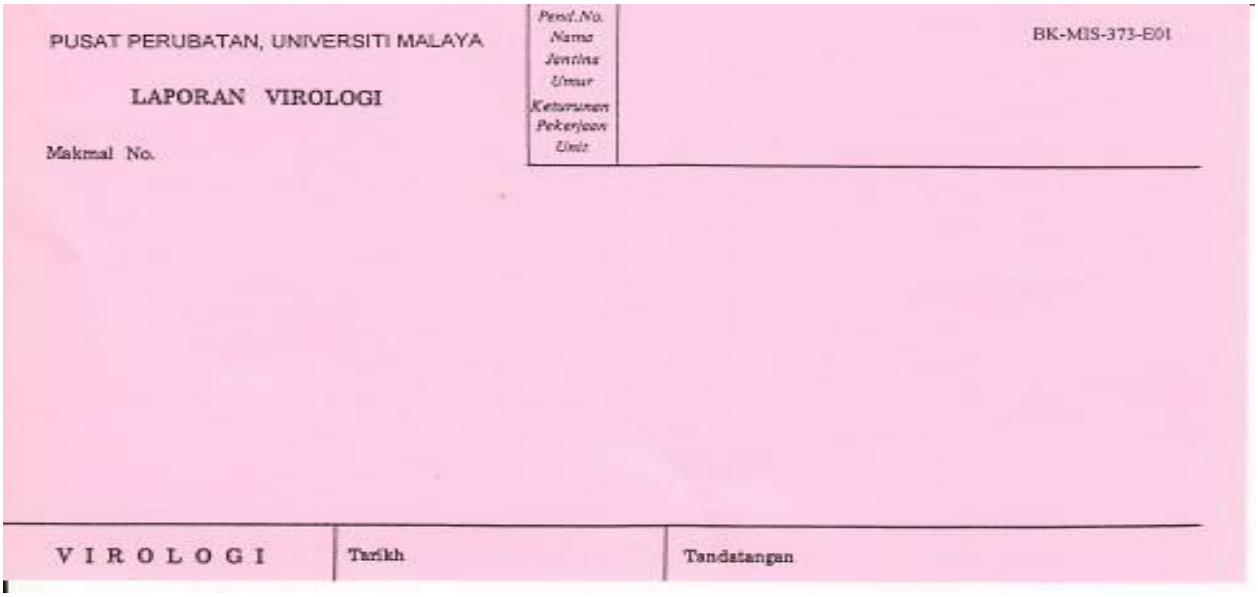
Specimen: *Date collected* [ ][ ][ ][ ][ ][ ] *Time collected* [ ][ ][ ][ ]

Doctor Requesting Exam.: *(Block Letters)* Name _____ Signature _____

BK-MIS-113-E01

N.B. – No report will be made unless the above particulars are fully provided

2) Virology request form (BK-MIS-373-E01 & BK-MIS-372-E01)



PUSAT PERUBATAN, UNIVERSITI MALAYA

LAPORAN VIROLOGI

Makmal No.

Pesk.No.
Nama
Jantina
Umur
Kerurunan
Pekerjaan
Unit

BK-MIS-373-E01

VIROLOGI	Tarikh	Tandatangan



VIROLOGI

PEMERIKSAAN TERDAHULU: ☐ Tidak ☐ Ya : Tarikh _____ Tempat _____

Diagnosis _____ Tarikh mula _____

Pengimunan : nyatakan jenisnya dan tarikh dos terakhir —

☐ Polio _____ ☐ Demam Selsema _____ ☐ Cacar _____

☐ Sakit Campak _____ ☐ Lain-Lain _____

Maklumat Klinikal: Demam: ☐ Ada ☐ Tiada; Ruam: ☐ Ada ☐ Tiada; Meningitis: ☐ Ada ☐ Tiada; Lumpuh: ☐ Ada ☐ Tiada; Bulbar: ☐ Ada ☐ Tiada

Saluran yang terlibat: Pernafasan: ☐ Ya ☐ Tidak; Gastrointestin: ☐ Ya ☐ Tidak

Membawa Maut: _____

Terapi, jika ada _____

Pemeriksaan yang perlu _____

Jenis spesimen _____ Tarikh _____

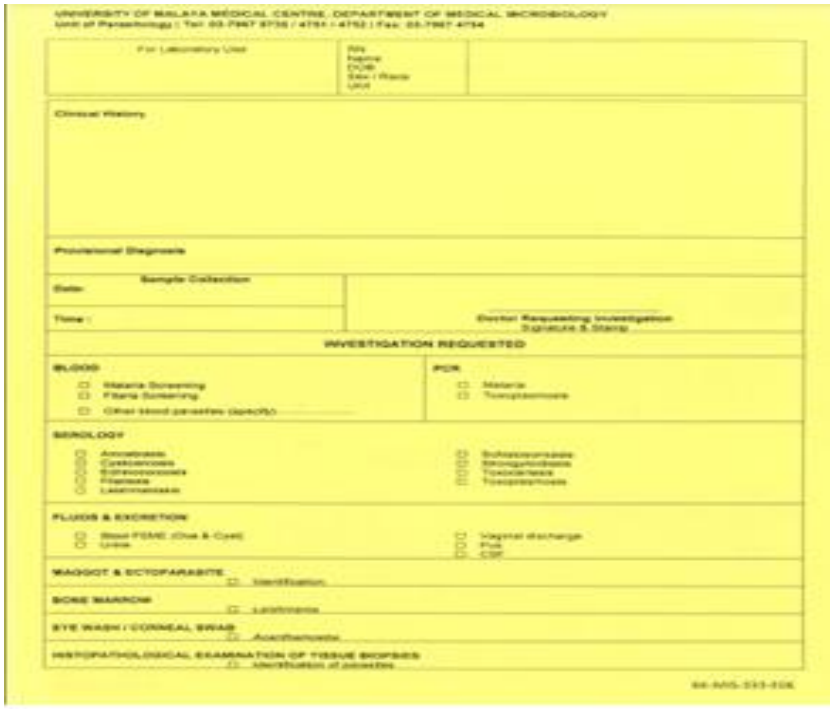
Jika serum, nyatakan: ☐ akut ☐ konvalesens Jam _____

Tarikh ..... Doktor Merawat ..... Tandatangan .....

BK-MIS-372-E01

PERHATIAN — Laporan hanya akan dibuat jika butir-butir di atas disediakan sepenuhnya

3) Parasitology request form (BK-MIS-333-E06)



UNIVERSITY OF MALAYA MEDICAL CENTRE, DEPARTMENT OF MEDICAL MICROBIOLOGY

For Laboratory Use

Clinical History

Provisional Diagnosis

Sample Collection

Date:

Time :

Doctor Requesting Investigation
Signature & Stamp

INVESTIGATION REQUESTED

BLOOD

- Malaria Screening
- Filaria Screening
- Other blood parasites (specify)

PCR

- Malaria
- Toxoplasmosis

SEROLOGY

- Amoebiasis
- Cysticercosis
- Echinococcosis
- Filariasis
- Leishmaniasis
- Schistosomiasis
- Strongyloidiasis
- Toxocariasis
- Toxoplasmosis

FLUIDS & EXCRETION

- Stool FEME (Ova & Cyst)
- Urine
- Vaginal discharge
- Pus
- CSF

MAGGOT & ECTOPARASITE

- Identification

BONE MARROW

- Leishmania

EYE WASH / CORNEAL SWAB

- Acanthamoeba

HISTOPATHOLOGICAL EXAMINATION OF TISSUE BIOPSIES

- Identification of parasites

BK-MIS-333-E06



PARASITOLOGY REPORT

RESULTS

REMARKS / ADDITIONAL REQUEST

Clinical Parasitologist
Signature & Stamp

Date:

For any enquiries regarding diagnosis and results, please call the number(s) below
Clinical Parasitologist : 03-7967 4751 / 4752
Parasitology Lab : 03-7967 5735

BK-MIS-333-E06

APPENDIX 3 :

List of tests send to referral laboratory

REFERRAL LABORATORIES	TESTS OFFERED
Institute for Medical Research	Verification of Antibiotic resistance other than Carbapenem Resistance Enterobactericeae Detection of Burkholderia pseudomallei IgM (meliodosis) HIV-1 RNA RT PCR for babies
Makmal Kesihatan Awam Kebangsaan (MKAK) Sungai Buloh	Parvovirus B19 PCR
Gribbles Pathology (M) Sdn Bhd	Helicobacter pylori IgG serology Quantiferon TB Gold
Geneflux Biosciences Sdn Bhd	EBV DNA viral load BK / JC viral load
Neogenix Laboratories Sdn Bhd	TB PCR Quantiferon TB Gold CMV quantiferon assay Quantiferon monitor assay STI-7 panel STI Genital Ulcer Panel STI Combo Panel (STI-13) Toxoplasma gondii Detection and Quantitation Assay
Lablink (M) Sdn. Bhd.	Bacterial Antigen Screen Drug susceptibility testing for non-tuberculosis *Mycobacterium* (NTM) Meningitis Viral Pathogen Panel
Pantai Premier Pathology Sdn. Bhd.	Quantitative covid-19 IgG antibody test (SCOVG)

INSTITUTE FOR MEDICAL RESEARCH (IMR)

TEST NAME:	VERIFICATION OF ANTIBIOTIC RESISTANCE OTHER THAN CARBAPENEM RESISTANCE ENTEROBACTERICEAE			
CODE	**Sample**	**Container**	**Volume**	**TAT**
COLI	Bacterial culture	Culture media which support the growth	Pure isolate	**7 working days**
Note: Transport in ambient temperature.				

TEST NAME:	DETECTION OF *Burkholderia pseudomallei* IgM (MELIODOSIS)			
CODE	**Sample**	**Container**	**Volume**	**TAT**
MLDSE	Serum	Sterile plain tube	2 – 3 ml	**5 working days**
Note: Transport in ambient temperature, if delayed keep at 2-8 ºC.				

TEST NAME:	HIV-1 RNA RT PCR FOR BABIES (0-18 MONTHS)			
CODE	**Sample**	**Container**	**Volume**	**TAT**
HIVPC	Blood, Plasma	EDTA tube	2.5 ml	**5 working days**
Note: Transport in ice.				

MAKMAL KESIHATAN AWAM KEBANGSAAN (MKAK) SUNGAI BULOH

TEST NAME:	PARVOVIRUS B19			
CODE	**Sample**	**Container**	**Volume**	**TAT**
PVPCR	Serum	Plain tube with serum seperator	1 – 3 ml	**5 working days**
	CSF	Sterile screw capped container	1 ml	
Note: Transport in 2-8 ºC.				

GRIBBLES PATHOLOGY (M) SDN BHD

TEST NAME:	*Helicobacter pylori* IgG SEROLOGY			
CODE	**Sample**	**Container**	**Volume**	**TAT**
HLBAB	Serum	Plain /gel tube	8 ml	**2 working days**
Note: Transport in 4-8 ºC.				

TEST NAME:	QUANTIFERON TB GOLD			
CODE	**Sample**	**Container**	**Volume**	**TAT**
QTBGP	Blood	Special collection kit	8 ml	**3 working days**
Note: Transport in 4-8 ºC.				

TEST NAME:	BACTERIAL ANTIGEN SCREEN			
CODE	**Sample**	**Container**	**Volume**	**TAT**
CSFLA	CSF /Urine	Sterile container	3 ml	**10 working days**
Note: Transport in 4-8 ºC.				

GENEFLUX BIOSCIENCES SDN BHD

TEST NAME:	EBV DNA VIRAL LOAD			
CODE	**Sample**	**Container**	**Volume**	**TAT**
EBPCR	Blood, Plasma	EDTA tube	5 ml	**3 working days**
Note: Transport in 4-8 ºC.				

TEST NAME:	BK / JC VIRAL LOAD			
CODE	**Sample**	**Container**	**Volume**	**TAT**
BKJCP	Urine	Sterile container	3 ml	**3 working days**
	CSF	Sterile container	1 ml	
Note: Transport in 4-8 ºC.				

NEOGENIX LABORATORIES SDN BHD

TEST NAME:	TUBERCULOSIS/NTM PCR			
CODE	**Sample**	**Container**	**Volume**	**TAT**
MBTB	Biopsy	Sterile container	Minimum 2 cm	**3 working days**
	Peritoneal fluid		10 ml	
	Pericardial fluid		10 ml	
	Pleural fluid		10 ml	
	Tracheal wash		10 ml	
	Pus from abscess		10 ml	
Note: Transport in 4-8 ºC.				

TEST NAME:	QUANTIFERON TB GOLD			
CODE	**Sample**	**Container**	**Volume**	**TAT**
QTBGP	Heparinized blood	2 Heparin tubes	6 ml each tube	**3 working days**
Note: Transport in 4-8 ºC.				

TEST NAME:	CMV QUANTIFERON ASSAY			
CODE	**Sample**	**Container**	**Volume**	**TAT**
QCMV	Heparinized blood	Heparin tube	5 ml	**5 working days**
Note: Do not refrigerate /freeze sample.				

TEST NAME:	QUANTIFERON MONITOR ASSAY			
CODE	**Sample**	**Container**	**Volume**	**TAT**
QMA	Heparinized blood	Heparin tube	5 ml	**5 working days**
Note: Do not refrigerate /freeze sample.				

TEST NAME: STI-7 PANEL *Chlamydia trachomatis, Neisseria gonorrhoeae, Trichomonas vaginalis, Mycoplasma hominis, Mycoplasma urealyticum, Ureaplasma urealyticum, Ureaplasma parvum*				
CODE	**Sample**	**Container**	**Volume**	**TAT**
STI	Swab specimen (urethral, vaginal and cervical)	Flocked swab with universal transport medium	-	**3 working days**
	Urine	Sterile container	4 ml	
Note: Transport in 4-8 ºC.				

TEST NAME: STI GENITAL ULCER PANEL **Herpes simplex virus 1, Herpes simplex virus 2, *Haemophilis ducreyi, Treponema pallidum, Lymphogranuloma venereum*, Cytomegalovirus, Varicella-zoster virus**				
CODE	**Sample**	**Container**	**Volume**	**TAT**
STIGU	Swab specimen (urethral, vaginal and cervical)	Flocked swab with universal transport medium	-	**3 working days**
	Urine	Sterile container	4 ml	
Note: Transport in 4-8 ºC.				

TEST NAME: *Toxoplasma gondii* DETECTION AND QUANTITATION ASSAY				
CODE	**Sample**	**Container**	**Volume**	**TAT**
TOXOP	CSF	Sterile container	3 ml	**4 working days**
Note: Transport in 4-8 ºC.				

LABLINK (M) SDN. BHD.

TEST NAME: MENINGITIS VIRAL PATHOGEN PANEL **Cytomegalovirus, Enterovirus, Herpes simplex 1, Herpes simplex 2, , Parechovirus, Human herpesvirus 6, Human herpesvirus 7,Varicella-zoster virus, Adenovirus, Parvovirus B19, Epstein –Barr virus, Mumps virus**				
CODE	**Sample**	**Container**	**Volume**	**TAT**
CSFMP	CSF	Sterile container	2 ml	**3 working days**
Note: Transport in 4-8 ºC.				

TEST NAME: DRUG SUSCEPTIBILITY TESTING FOR NON-TUBERCULOSIS MYCOBACTERIUM (NTM)				
CODE	**Sample**	**Container**	**Volume**	**TAT**
CNTM	Culture isolates – solid medium	Screw capped container	Visible growth on the egg-based slope (> 20 colonies). Pure culture on solid medium.	**14 working days**
Note: Transport in ambient temperature.				

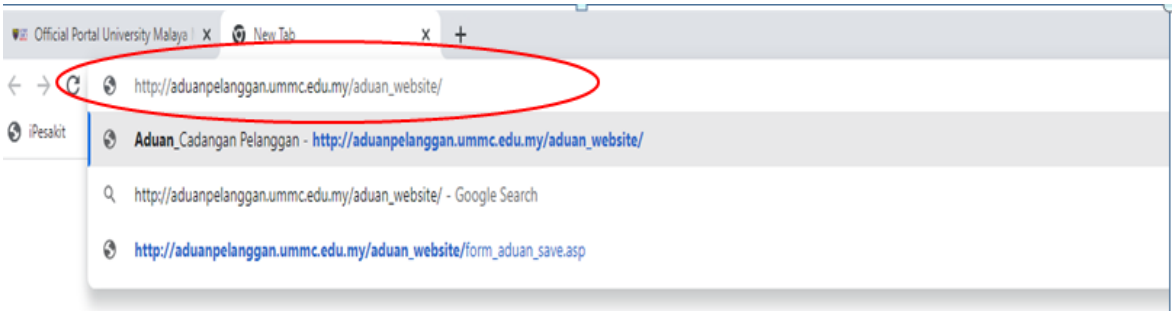
PANTAI PREMIER PATHOLOGY SDN. BHD.

TEST NAME:	QUANTITATIVE COVID-19 IgG ANTIBODY TEST (SCOVG)			
CODE	**Sample**	**Container**	**Volume**	**TAT**
CVIGG	Blood	Plain tube	5 ml	**3 working days**
Note: Transport in 4-8 ºC.				

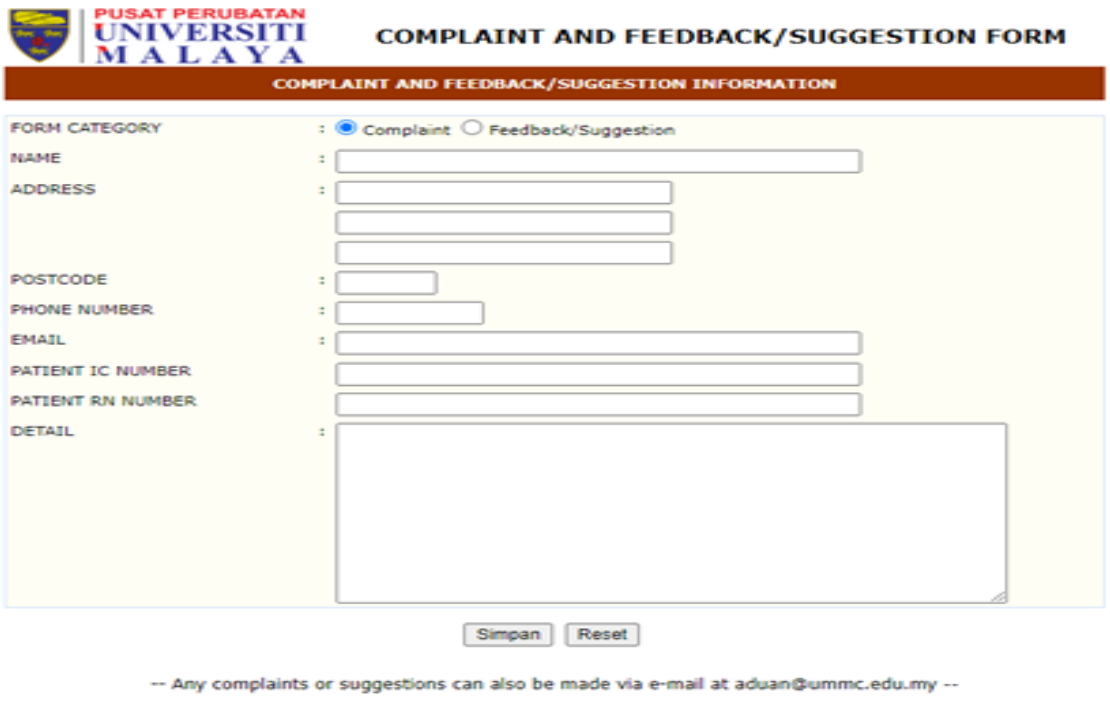
APPENDIX 4 :

Procedure of *e-manual* aduan

1) Type URL http://aduanpelanggan.ummc.edu.my/aduan_website/ into the web search site.



2) Please choose either to make Complaint or to give Feedback/Suggestion.



3) Fill up your details and enquiry.
4) Click '*Simpan*' to submit.

AMENDMENT AND REVIEW RECORD

NO	DATE OF REVIEW (DATE/ MONTH/YEAR)	AMENDMENT MADE (IF ANY)	REVIEWED BY (FULL NAME)	APPROVED BY (FULL NAME)