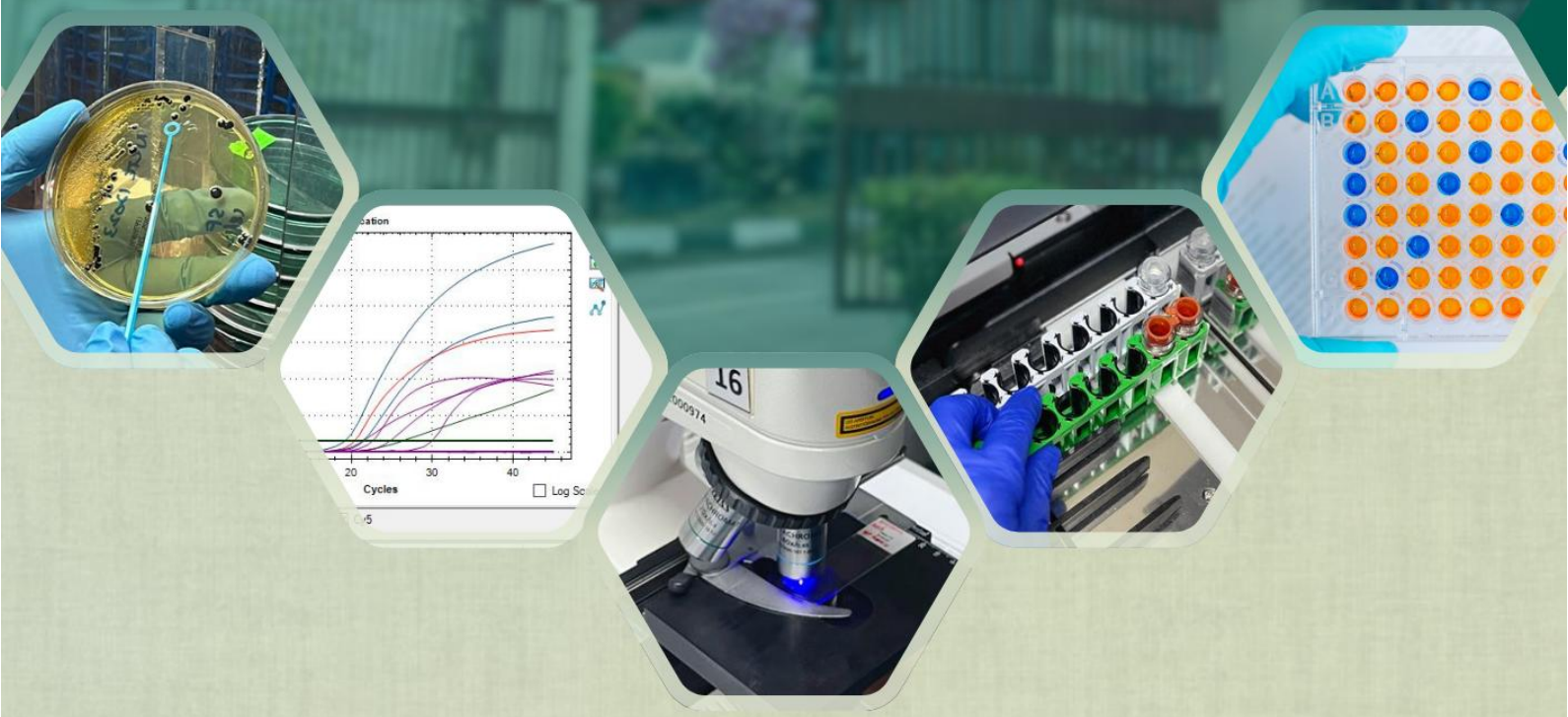
# IPOH PUBLIC HEALTH LABORATORY

# DISEASE SECTION




# HANDBOOK OF LABORATORY SERVICES

# 2026

**Kami Sedia Membantu**

**Penyayang • Profesionalisme • Kerja Berpasukan**

# CONTENT



## LIST OF CONTENTS


| | | PAGE |
|---|---|---|
| **OBJECTIVES OF THE MINISTRY OF HEALTH** | | 1 |
| **VISION & MISSION OF THE MINISTRY OF HEALTH** | | 1 |
| **OBJECTIVES OF THE DISEASE SECTION OF IPOH PUBLIC HEALTH LABORATORY (IPOH PHL)** | | 2 |
| 1.0 | Introduction | 3 |
| | - General workflow for Handling of Specimen in Disease Section, Ipoh Public Health Laboratory. | 4 |
| 2.0 | Laboratory Services | 5 |
| 3.0 | Operating Hours | 6 |
| 4.0 | Location & Contact Details | 6 |
| | 4.1 Laboratories in Disease Section of Ipoh PHL | 6 |
| 5.0 | Comments, Compliments and Complaints | 6 |
| | 5.1 List of Officers in Disease Section of Ipoh PHL | 7 |
| 6.0 | Request Form | 8 |
| 7.0 | Specimen Receiving | 8 |
| | 7.1 Specimen Rejection Criteria | 9 |
| | 7.2 Procedure for Rejection of Specimen | 9 |
| | 7.3 Transport of Specimen | 10 |
| | 7.4 Verbal Add-On Request | 10 |
| | 7.5 Urgent Request Test | 10 |
| | 7.6 Reporting of Result | 10 |
| | 7.7 Revised Result | 10 |
| | 7.8 Examination Delay | 10 |

**LIST OF CONTENTS** **PAGE**


8.0 Specimen Collection Container 11

8.1 General Specimen Collection and Handling Guidelines 11

8.2 Laboratory Request Form 11

8.3 Specimen Collection 11

8.4 Specimen Labelling 12

8.5 Specimen Handling 12

9.0 Blood Specimen Collection 12

9.1 Blood Collection Tube 12

9.2 Order of Draw for Multiple Tube Collections 13

9.3 Tube Mixing (Inversions) 13

9.3.1 Recommended Mixing Technique 13

9.4 Serum 13

9.5 Blood Collection Problem 14

9.6 Dried blood spot 14

9.7 Giemsa-stained blood film for malaria parasite (BFMP) 14

10.0 Non-Blood Specimen Collection 15

10.1 Respiratory Specimen 15

10.1.1 Throat Swab 15

10.1.2 Nasopharyngeal Swab 15

10.1.3 Nasopharyngeal Aspirates (NPA) / Nasopharyngeal Secretion 15

10.1.4 Sputum 16

10.2 Body Fluids 16

**LIST OF CONTENTS** **PAGE**


10.3 Urine 16

10.3.1 Midstream Urine 16

10.3.1.1 Adult Male 16

10.3.1.1 Adult Female 16

10.3.1.1 Infant and Young Children 17

10.4 Stool / Rectal Swab 17

10.5 Eye/Ear/Genital/Pus Swab 17

10.5.1 Eye Swab 17

10.5.2 Ear Swab 17

10.5.3 Urethral Discharge Swab for Sexually Transmitted Infection (Male) 18

10.5.4 Pus/Pus Swab 18

10.6 Skin Biopsy/Lesions /Vesicle Swab 18

10.6.1 Skin Lesions/Vesicle Swab 18

11.0 Environmental and Non-Clinical Specimen 19

11.1 Untreated water sampling for *Leptospira* 19

11.2 Soil sampling for *Leptospira* 19

11.3 Water sampling for *Legionella* 20

11.4 Soil sampling for *Burkholderia pseudomallei* 20

11.5 Water sampling for *Burkholderia pseudomallei* 20

11.6 Isolate (*Escherichia coli*, *Salmonella spp*. & *Shigella spp.*) 20

11.7 Water Sampling for AGE environment 21

12.0 Basic Triple Packaging System 22

**Figure 1**: Example of presentation of basic triple packaging 23

## LIST OF CONTENTS


| | PAGE |
|---|---|
| 13.0 Packing Instruction P650 (Category B Infectious Substance Requirement) | 24 |
| **Figure 2:** Example of triple packaging materials that may be used to comply with P650 for Category B infectious substances. | 25 |
| **REFERENCE** | 25 |
| **List of Test Available in Disease Section Ipoh Public Health Laboratory** | 26 - 33 |
| **Reference Ranges for Analyzer Beckman Coulter AU480** | 34 - 35 |
| **Urine Iodine Concentration (IDD)** | 36 |
| **Forms** | 37 - 52 |
| **Appendix 1:** | |
| Flow Chart and Guideline of Specimen Transportation to Ipoh Public Health Laboratory | 53 |
| **Complaint Form / Suggestions** | 54 |

# OBJECTIVES

# VISION

# &

# MISSION

## OBJECTIVES OF THE MINISTRY OF HEALTH

To assist an individual in achieving and sustaining as well as maintaining a certain level of health status and to further facilitate them in leading a productive lifestyle-economically and socially. This could be materialized by introducing or providing promotional and preventive approaches, other than an efficient treatment and rehabilitation services, which is suitable and effective, whilst priorities are given to the less fortunate groups.

### VISION

A nation working together for better health.

### MISSION

The mission of the Ministry of Health is to lead and work in partnership:

I. To facilitate and support the people to:

- Attain fully their potential in health
- Appreciate health as a valuable asset
- Take individual responsibility and positive action for their health

II. To ensure a high-quality health system that is:

- Customer centered
- Equitable
- Affordable
- Efficient
- Technologically appropriate
- Environmentally adaptable
- Innovative

III. With emphasis on:

- Professionalism, caring and team work value
- Respect for human dignity
- Community participation

## OBJECTIVES OF THE DISEASE SECTION OF IPOH PUBLIC HEALTH LABORATORY

- **GENERAL OBJECTIVE**

  The objective of the Disease Section, Ipoh Public Health Laboratory is to provide laboratory services as a component of the surveillance and monitoring of diseases.

- **SPECIFIC OBJECTIVES**

  1. Provide laboratory services for the investigation of infectiousdisease outbreaks.
  2. Provide laboratory services in the process of monitoring and surveillance of all public health related diseases.
  3. Provide training and human resource development in the technicalaspects of the laboratory.
  4. Provide laboratory services for all research and developmentactivities related to public health.

## 1.0 INTRODUCTION

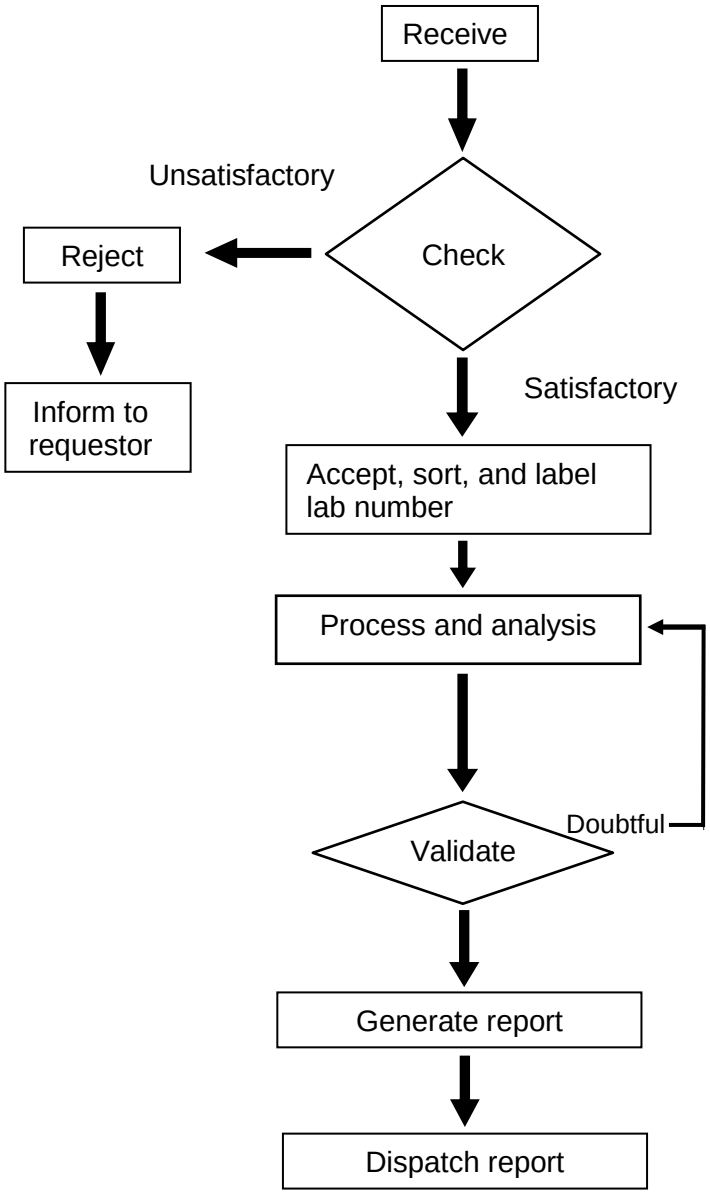
The Disease Section of the Ipoh Public Health Laboratory (IPHL) consists of the Tuberculosis Unit, Bacteriology Unit, Serology Unit, Molecular Biology Unit, Parasitology Unit, and Biochemistry Unit. The Ipoh Public Health Laboratory (IPHL) commenced its operations in November 1998 and has since expanded its scope of services with the introduction of various new laboratory tests over the years.

Laboratory investigation services provided by the Disease Section of IPHL cater to all health clinics, District Health Offices, and hospitals throughout the states of Perak, Perlis, Kedah, and Pulau Pinang. In addition, the Disease Section is actively involved in the provision of training and continuous professional education for departments under the Ministry of Health Malaysia, including the Perak State Health Department, hospitals, and District Health Offices. The section also participates in health-related programs organized by external agencies.

The objectives of this Laboratory Handbook are to promote the laboratory services offered by IPHL and to provide comprehensive and relevant information, including the list of tests available, patient preparation requirements, specimen preparation and collection procedures, and relevant contact telephone numbers.

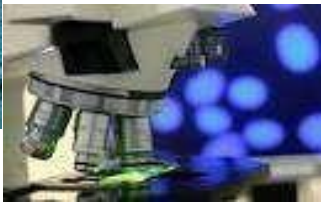
It is hoped that this Laboratory Handbook will serve as a useful reference and assist laboratory users in the effective and appropriate utilization of the services provided by IPHL.

**General workflow for handling of specimen in Disease Section, Ipoh Public Health Laboratory**



# LABORATORY SERVICE





## 2.0 LABORATORY SERVICES

- √ Provide fast, efficient, accurate, reliable laboratory analysis services that meet the clients' standards and requirements.
- √ Provide efficient counter services and customer-friendly.
- √ Be prepared to receive specimens for analysis during outbreaks and crisis.
- √ Provide administrative management services professionally.
- √ Laboratory Turn Around Time (Disease section) as below:

| TESTS | LABORATORY TURN AROUND TIME (LTAT) |
|---|---|
| **Biochemistry Tests** | |
| i) Routine Biochemistry | 1-3 working days |
| ii) Cholinesterase (surveillance) | 7 working days |
| iii) Urine IDD | 25 working days |
| iv) Adenosine Deaminase (ADA) | 4 working days |
| **Serology / Virology Tests** | |
| i) Surveillance | 7 days |
| ii) Outbreak | 1-3 days |
| **Molecular Biology Tests** | |
| i) Surveillance | 7 working days |
| ii) Outbreak | 1-3 days |
| iii) Diagnostic | 3-5 working days |
| **Bacteriology Tests** | |
| i) *Salmonella Serotyping Tests* | 14 working days |
| ii) PCR Diarrheagenic *Escherichia coli* | 14 working days |
| iii) PCR for d-Tartrate Fermentation gene in *Salmonella Paratyphi B* | 14 working days after serotyped *Salmonella Paratyphi B* |
| iv) Culture & Sensitivity Tests | 3-7 days |
| v) Microscopic Agglutination Test (*Leptospira*) MAT | 10 working days |
| vi) Detection of *Leptospira* in environmental water/ soil | 21 working days |
| vii) Detection of Pathogenic *Leptospira* in clinical specimens (PCR) | 7 working days |
| viii) Detection of *Burkholderia pseudomallei* in environmental water/ soil | 14 working days |
| ix) Detection of *Bordetella pertussis* in clinical specimens | 48 hours |
| x) Environmental *Legionella* Culture | 14 working days |
| **Tuberculosis Tests** | |
| i) *Mycobacterium tuberculosis* Culture Tests | 8 weeks |
| ii) Identification Tests (ID) | 5 days from the date of positive culture |
| iii) MTB Sensitivity Tests (DST) | 35 days from the date of ID positive |
| iv) TB PCR | 7 working days |
| v) MDR-TB Investigation | 7 working days |
| vi) Latent TB Investigation - IGRA (Interferon Gamma Release Assay) | 3-21 working days |
| vii) Rapid molecular TB (M10) | 24 Hours (working days) |
| **Parasitology Tests** | |
| i) qPCR Malaria | 3-7 working days |
| ii) Rechecking for BFMP | 1 month |

# LOCATION
# &
# CONTACTS



## 3.0 OPERATING HOURS

**Office hours**

Monday to Friday: 8.00am to 5.00pm
Outbreak Service Hours (24-hour service)

*Please visit our web site at https://jknperak.moh.gov.my/mkai/v2/
(Jadual On-Call>Download) for the current on-call personnel in-charge.

Customers should inform the on-call personnel prior sending the specimens by calling.

## 4.0 LOCATION AND CONTACT DETAILS

Address : Makmal Kesihatan Awam Ipoh,
Kementerian Kesihatan Malaysia,
Jalan Jelapang,
30020, Ipoh,
Perak Darul Ridzuan.

Phone : 05-5287829/30/32/33/34

Email : mkai@moh.gov.my

Website : https://jknperak.moh.gov.my/mkai/v2/

### 4.1 Laboratories in Disease Section of Ipoh PHL:

| UNIT | EXTENSION |
|---|---|
| Tuberculosis | 2027 / 2028 / 2029 / 2043 |
| Serology/ Virology | 2023 |
| Bacteriology | 2019 |
| Biochemistry | 2031 |
| Molecular Biology / Genome Sequencing & Bioinformatics | 2034 / 2024 |
| Parasitology | 3023 / 3024 |

## 5.0 COMMENTS, COMPLIMENTS & COMPLAINTS

The Ipoh Public Health Laboratory is committed to offer high quality services that meet and respond to the needs of all service users.

Please contact us at 05-528 7829/30/32/33/34 or scan the QR code provided on page 54 if you have any complaints regarding our laboratory services.

## 5.1 List of Officers in Disease Section of Ipoh PHL:

| UNIT | NAME | POSITION | EXT. | EMAIL |
|---|---|---|---|---|
| **Disease** | Dr Julina binti Abdul Aziz | Clinical Microbiologist UD14 | 1005 | julina.abdaziz @moh.gov.my |
| **Disease** | Dr Raja Muhammad bin Raja Omar | Public Health Specialist UD14 | 1014 | dr.rajamuhammad @moh.gov.my |
| **HEAD OF DISEASE SECTION** | Farah Wahida binti Zainal Abidin | Science Officer (Microbiology) C13 (M) | 2026 | farahwahidaza @moh.gov.my |
| **HEAD OF UNIT** Tuberculosis/ Bacteriology/ Parasitology | Tan Teik Pei | Science Officer (Microbiology) C12 (M) | 2032 | tanteikpei @moh.gov.my |
| Tuberculosis | Sakthivel a/l Narainsamy | Science Officer (Microbiology) C10 | 2017 | sakthivel @moh.gov.my |
| | Hema Nair a/p Manian | Science Officer (Microbiology) C10 | 2039 | hema_nair @moh.gov.my |
| Bacteriology | - | - | - | - |
| Parasitology | Nazratul Shiha binti Mat Isa | Science Officer (Microbiology) C10 | 2033 | nshiha @moh.gov.my |
| **HEAD OF UNIT** Biochemistry | Kam Boon Lai | Science Officer (Biochemistry) C12 | 2018 | blkam @moh.gov.my |
| Biochemistry | Ku Syaridatul Irma binti Ku Ismail | Science Officer (Biochemistry) C9 | 2038 | syaridatulirma @moh.gov.my |
| **HEAD OF UNIT** Virology | Muhammad Hasyim Chew bin Abdullah | Science Officer (Microbiology) C12 | 1017 | hasyim77 @moh.gov.my |
| Molecular Biology | Nur Diyana binti Mastor | Science Officer (Microbiology) C10 | 2017 | nur.diyana @moh .gov.my |
| Serology | Yusnita Alwia binti Yusof | Science Officer (Microbiology) C10 (M) | 2038 | yusnitaalwia @moh.gov.my |
| Nucleic Acid Sequencing and Bioinformatics | Hetty Nadia binti Muhamad Nazir | Science Officer (Microbiology) C10 | 2038 | hetty.nadia @moh.gov.my |
| Molecular Biology | Afeeq bin Azlee | Science Officer (Microbiology) C9 | 2020 | afeeq.azlee @moh.gov.my |
| Molecular Biology | Lingeswari a/p K Somasundram | Science Officer (Microbiology) C9 | 2020 | lingeswari.ks @moh.gov.my |
| Molecular Biology | Noor Humairah binti Shahidan | Science Officer (Microbiology) C9 | 2020 | humairah.shahidan @moh.gov.my |

# GENERAL OPERATING POLICIES

## 6.0 REQUEST FORM

Ipoh Public Health Laboratory (IPHL) provides request form to be completed out for all specimens. The requestor has to complete it all the information needed by the laboratoryfor processing specimen correctly. All patient's personal information is treated with the strictest confidentiality.

There is different request form available for;

a. Primary Health Care
b. Regional and National laboratory

The following information is essential for specimen processing;

**a. Patient's detail:**
Name, identity card (IC), gender, age, date of birth and patient registration number

**b. Patient location:**
Hospital ward, clinic, District Health office and place of occurrence

**c. Patient clinical summary:**
Clinical manifestation, clinical diagnosis and day onset fever

**d. Test request:**
Request must specify the test required

**e. Specimen:**
Specify type of specimen

**f. Collection date and time**:
To determine time interval between collection and receipt/processing of the specimen

**g. Requestor and contact details**:
Name, signature, email, phone number, and official stamp

## 7.0 SPECIMEN RECEIVING

All specimens submitted to the laboratory for testing must be in satisfactory condition and properly labeled with adequate information that ensures the specimen is traceable to the patient and the accompanying request form. The following specimen labeling information shall be included;

- Patient's name
- Patient's ID - Identity Card (IC)
- Date of collection
- Type of Specimen

Request forms shall be clearly and completely filled.

Unsatisfactory specimens that may compromise the quality of test results or pose a safety hazard will not be processed, with the exception of clinically critical specimens such as (e.g., cerebrospinal fluid).

Details of the unsatisfactory condition will be documented in the final report.

### 7.1 Specimen Rejection Criteria

The following common criteria are unacceptable for testing:

**a. Test Request Form**

- Request form was not included with the specimen
- No patient's name / IC number / RN
- Patient's name / IC number / RN on the request form differs from the specimen
- No requestor address
- Test request is not specified
- No date or time of specimen collection
- Request form was damaged / contaminated due to leaked specimen
- The form is torn, and the information is unclear
- No signature and stamp from requestor
- Incomplete information
- Incorrect form

**b. Specimen**

- Specimen was not included with request form
- Specimen spilled / leaking / broken
- Incorrect specimen container
- Specimen is unsuitable for analysis
- Specimen is insufficient for analysis
- Blood clotted / hemolyzed due to ratio specimen with anticoagulant / incorrect media
- Patient's name / IC number / RN on the specimen differs from the request form
- The information on the specimen is illegible
- Specimen was contaminated due to spill from another specimen
- Specimen delivery temperature is unsuitable
- No label / patient information on specimen

**c. Others**

- Test was not offered
- Incorrect specimen delivery method
- Specimen collection time exceeds the acceptable period for testing
- Outsourced to another laboratory
- Clear swab
- Not a sentinel specimen

### 7.2 Procedure for Rejection of Specimen

The laboratory procedure for rejection is as follows:

a. The laboratory staff will fill up the rejection form.
b. The laboratory staff will inform to requestor about the reason of rejection.
c. Record the date and time of rejection and requestor name.
d. Rejected specimen will be stored in chiller at 2-8°C **(if the rejection is because of the request form).**
e. Client will be contacted to send a new request form within 24 hours.
f. If laboratory did not receive the new request form within 24 hours, the specimen will be discarded.

### 7.3 Transport of Specimen

All specimens must be treated as hazardous and should be dispatched to the laboratory as soon as possible after collection.

**Note**: Flow Chart and Guideline of Specimen Transportation to **Ipoh Public Health Laboratory.** Please refer **Appendix 1**.

### 7.4 Verbal Add-on Request

Verbal add-on test can be requested within 24 hours provided there is adequate volume and stability of the primary sample has been maintained.

### 7.5 Urgent Request Test

An urgent request is when the client requires the result of routine test as soon as possible and the result is critical for immediate management of the patient. The test will be performed immediately and the result will be released as soon as possible.

**Procedure:**

a. Client must discuss with the laboratory concerned verbally before sending the urgent request.
b. All urgent requests must be followed by the request form.
c. The request form should indicate clearly as 'URGENT' (stamped/in writing). The specimen will be processed as soon as possible.
d. Results will be informed to the client as soon as possible depending on the test method.

### 7.6 Reporting of Result

7.6.1 All examination results are treated with the strictest confidentiality. The reports are available via:
   a. Web-based system for the authorized user (SIMKA)
   b. Hard copies
   c. By telephone for urgent test result

7.6.2 Any deviation (e.g. Change of test method) that could impact on the examination result will be informed to the requestor.

7.6.3 Any reference to referral laboratory or consultant will be notified.

### 7.7 Revised Result

Revised result is a result that has been amended and will be informed immediately to the requestor by phone. The time and date of amended results will be indicated on the report.

### 7.8 Examination Delay

In the event of examination delay (>TAT), requestors will be notified by verbal/electronic communication. Hard copy of notification will be dispatched if extended delay is expected.

## 8.0 SPECIMEN COLLECTION CONTAINER

List of specimen collection container provided in Ipoh Public Health Laboratory:

| Images of container | Specimen | Container | Test | Volume | Laboratory used |
|---|---|---|---|---|---|
|  | Rectal swab | Cary Blair | Culture & Sensitivity | NA | Sent the specimen in room temperature. |
|   | Throat swab, rectal swab, etc. | Viral Transport Media (VTM) | PCR | 3ml | Please use Dacron swab for specimen collection. Avoid using cotton swabs as they could interfere with the PCR test. |

**Note:** Please contact the laboratory for requesting the specimen container.

### 8.1 General Specimen Collection and Handling Guidelines

Several essential steps are required for a successful specimen collection:

a. Identify the patient.
b. Complete the request form, including requested tests, patient information, and clinical summary.
c. The clinical specimen must be material from the actual infection site and collected aseptically.
d. Label the collection container properly and placed it into a biohazard plastic bag.
e. Collect the specimen in the appropriate specimen container with the necessary volume and with appropriate mixing if required.
f. Close the container tightly and seal with parafilm if necessary to avoid leakage during transportation.
g. The specimen must be transported in cold chain at 4-8°C.
h. Promptly send the specimens with the request form to the laboratory.

### 8.2 Laboratory Request Form

Complete the test request form as described in section 6.0 on page 8.

### 8.3 Specimen Collection

The specimen should be collected properly to avoid the poor outcome of the laboratory results. Improper collection of the specimen may lead to:

- Delays in reporting test results
- Unnecessary re-draws or re-tests
- Incorrect diagnosis / treatment

### 8.4 Specimen Labeling

Please ensure that specimens are properly labeled with adequate information that ensures the specimen is traceable to the patient and accompanying request form. The information labeling should include:

- Patient's name
- Patient's ID – Identity Card (IC)
- Date of the collection
- Type of specimen

### 8.5 Specimen Handling

- Urgent request specimen is indicated as **"URGENT"** on the request form.
- All specimens must be treated as hazardous.

## 9.0 BLOOD SPECIMEN COLLECTION

### 9.1 Blood Collection Tube

The following directory identifies the blood collection tubes with color-coding tube tops for a sampling of different types of tests:

| BLOOD COLLECTION TUBES | TUBE STOPPER COLOR | |
|---|---|---|
| Serum Separating Gel Tube | Yellow/Gold |  |
| NaF/NaEDTA/ Potassium Oxalate Tubes | Grey |  |
| EDTA Tubes | Lavender |  |
| QuantiFERON tubes | Grey - Nil<br>Green - TB1<br>Yellow - TB2<br>Purple - Mitogen |  |

## 9.2 Order of Draw for Multiple Tube Collections

Blood must be drawn in a specific order to avoid cross-contamination of additive between tubes. Clinical and Laboratory Standard Institute (CLSI) recommends the order as follow:

First : Blood Culture Tube
Second : Coagulation Tube (Light Blue)
Third : Plain (Red top) or SSTII clot activator, gel separator tubes (Gold/Yellow top)
Fourth : Additive Tube in the order

- Heparin (Green top)
- EDTA (Lavender top)
- Oxalate/Fluoride (Grey top)

Needle for transferring blood from one tube to another tube should not be in contact with the additive or anticoagulant inside the tube. Blood taken must be adequate and able to fill into the designated level of the tube. This ensures proper mixing of the blood with the anticoagulant.

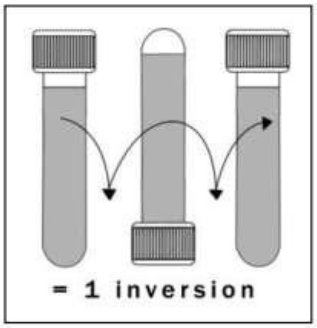
All additive tubes should be filled to their stated volumes and gently inverted as soon as possible after filling so that the additives mix evenly throughout the specimen**.**

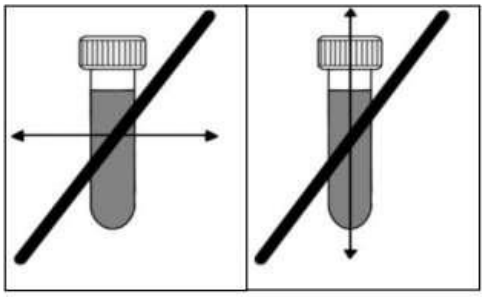
## 9.3 Tube Mixing (Inversions)

### 9.3.1 Recommended Mixing Technique

Immediately after drawing, hold the tube upright, gently invert 180° and back with the recommended number of inversion times.

Do not vigorously shake the tubes.



Rocking, shaking and jiggling of tube are not acceptable. This could cause sample to be lysed (breaking of red blood cells).

## 9.4 Serum

a. Draw 3-5ml blood into a plain tube with/without gel (No anticoagulants or preservatives).
b. Allow to clot at ambient temperature for a minimum of 30 minutes.
c. Centrifuge at 3000 ~ 3,800 rpm for 10 ~ 15 minutes.
d. Aliquot the serum into another transfer tube when using a tube without gel.
e. For a tube with gel, please send the original tube.
f. If using transfer tube, seal the tube with parafilm prior to transportation (optional).

### 9.5 Blood Collection Problem

| Problems | Common Causes | Consequences |
|---|---|---|
| Hemolysis | • Forcing blood specimen through aneedle into the tube<br>• Air leakage around the needle or loss of vacuum in the tube<br>• Removing the needle from the vein with the tube still engaged.<br>• Vigorous mixing of tube and frothing of specimen<br>• Drawing blood from a hematoma<br>• Drawing plunger back too forcefully in the syringe<br>• Probing a traumatic venipuncture<br>• The long delay in specimen transit<br>• Long exposure to heat | • Erroneous results<br>• Interferences in colorimetric assays<br>• Activates clotting factors<br>• Red cell parameters altered in FBC<br>• Falsely elevated potassium, magnesium and calcium levels |
| Clot in anticoagulated blood | • Difficult venipuncture<br>• Specimens not mixed well | • Inaccurate coagulation results<br>• False results for assays requiring whole blood specimens |
| Lipemic Specimens | • Specimen took immediately after fatty meals<br>• Patients with hypertriglyceridemia | • Optical interference with many assays<br>• Low sodium<br>• Elevated hemoglobin |

### 9.6 Dried blood spot

a. Label the filter paper tally according to the form.
b. Pipette 40 – 50 µL of blood from the collection tube and drop it onto the filter paper.
c. Prepare two to three blood spots.
d. Allow the spots to dry at room temperature.
e. Place the dried filter paper in a plastic sip-lock.
f. Transport at room temperature.

### 9.7 Giemsa-stained blood film for malaria parasite (BFMP)

a. After examination, place the Giemsa-stained BFMP into the slide casing.
b. Place the slide casing in a plastic zip-lock.
c. Transport at room temperature.

## 10.0 NON - BLOOD SPECIMEN COLLECTION

### 10.1 Respiratory Specimen

#### 10.1.1 Throat swab

a. Use polyester/cotton swab (for C&S) or Dacron (for PCR).
b. Depress the tongue with a tongue depressor.
c. Swab the inflamed area of the throat, pharynx or tonsils with a sterile swab taking care to collect the pus or piece of membrane. Avoid touching the cheeks, tongue, uvula or lips.
d. Place the swab for Bacteriology testing in Amies transport medium (with or without charcoal).
e. Place the swab for Virology testing in Viral Transport Media (VTM).

#### 10.1.2 Nasopharyngeal Swab

a. Use polyester/cotton swab (for C&S) or Dacron (for PCR).
b. Hold back the patient's head slightly and insert the swab straight into the nostril.
c. Insert the swab to least 5-6cm in length (for adults) to ensure that itreaches the posterior pharynx.
d. Leave the swab in place for few seconds, rotate and withdraw slowly.
e. Repeat the same procedure on the other nostril using new swab.
f. For Bacteriology Culture and Sensitivity testing, place the swab in Amies transport medium with charcoal or without charcoal. The specimen shall be transported at ambient temperature.
g. For ***Bordetella pertussis*** Genome Detection, place swab in a sterile container with sterile saline or Amies Transport Medium (without charcoal). The specimen shall be transported at 4-8°C.
h. Place swab in Viral Transport Media (VTM) for Virology testing. The specimen shall be transported at 4-8°C.

#### 10.1.3 Nasopharyngeal Aspirates (NPA)/Nasopharyngeal Secretion

a. Insert a small catheter through the nares to the back of the nose.
b. Gently suction as the catheter is withdrawn slowly.
c. Collect in the sterile screw-capped container.
d. Ensure that the container is sealed securely to prevent leakage.
e. The specimen shall be transported at 4-8°C (for both Bacteriology and Virology testing).

#### 10.1.4 Sputum

a. Collect the sputum early in the morning.

b. Use a wide-mouthed container for collection.

c. Instruct the patient to inhale deeply 2-3 times, cough up deeply from the chest and spit the sputum into the container by bringing it closer to the mouth.

d. Make sure the sputum specimen is of good quality (2-3ml of thick and purulent sputum).

### 10.2 Body Fluids

**10.2.1** Collect the specimen (pleural, pericardial, peritoneal, synovial, amniotic fluid, etc.) according to the Clinical Practice Guidelines (CPG) and transfer 2 to 5ml specimen into a sterile screw-capped container.

#### 10.2.2 Cerebrospinal Fluid (CSF)

a. Collect CSF before antimicrobial therapy is started.

b. Collect 1-3ml in sterile screw-capped container (Bijou bottle or Cryovial).

c. Do not use urine container.

### 10.3 Urine (Midstream)

#### 10.3.1 Adult Male

a. Give the patient a sterile urine container.

b. Instruct the patient to wash hands with soap and water before collection of urine specimen.

c. Cleanse the glands penis with soapy water and rinse with water.

d. Pass the few millimeters of urine to flush out the bacteria from the urethra, and then collect the mid-stream urine (MSU) in sterile urine container.

#### 10.3.2 Adult Female

a. Give the patient a sterile urine container.

b. Instruct the patient to wash hands with soap and water before collection of urine specimen.

c. Cleanse the area around the urethral opening with clean water, dry the area, and collect the urine with the labia held apart.

d. Discard the first portion of the stream and collect MSU in sterile urine container (without preservative).

#### 10.3.3 Infant and young children

a. Instruct the child to drink water.
b. Clean the external genitalia.
c. Encourage the child to urinate and collect the MSU in sterile urine container.
   - Urine collection bag can be used to collect urine.
   - If is not possible to send the urine specimen to Ipoh PHL within 2-4 hours, boric acid must be added, except for virology testing.

### 10.4 Stool/Rectal Swab

a. Use polyester/cotton swab (for C&S) or Dacron (for PCR).
b. Collect bean size of stool into stool screw-capped container.
c. Collect rectal swab if fresh stool collection is not possible. Ensure that the swabshows some fecal staining.
d. Place the swab for Bacteriology testing in Cary Blair transport medium.
e. Place the swab for Virology testing in Viral Transport Media (VTM).

### 10.5 Eye/Ear/Genital/Pus Swab

#### 10.5.1 Eye swab

a. Use polyester/cotton swab (for C&S) or Dacron (for PCR).
b. Clean skin around the eye using a sterile moistened swab to remove pus and discharge.
c. Use a separate swab for each eye for specimen collection.
d. Place the swab for Bacteriology testing in Amies transport medium (with or without charcoal).
e. Place the swab for Virology testing in Viral Transport Media (VTM).

#### 10.5.2 Ear Swab

a. Use polyester/cotton swab (for C&S) or Dacron (for PCR).
b. Do not apply any antibiotic drops 3 hours prior to specimen collection.
c. Swab the external ear canal by using a sterile swab.
d. Place the swab for Bacteriology testing in Amies transport medium (with or without charcoal).
e. Place the swab for Virology testing in Viral Transport Media (VTM).

### 10.5.3 Urethral Discharge Swab for Sexually Transmitted Infection (Male)

a. Clean the foreskin of the penis using sterile moistened swab.
b. Collect the exudates with a sterile swab and inoculate into the Amies transport medium with/without charcoal or Stuart transport medium.
c. If a discharge cannot be obtained, use a sterile swab to collect material from about 2cm inside the urethra.

### 10.5.4 Pus/Pus Swab

a. Use polyester/cotton swab (for C&S) or Dacron (for PCR).
b. Clean the skin around the specimen collection area using a sterile swab.
c. Collect pus in sterile screw-capped container or if minimal pus is available,use a sterile swab.
d. Place the swab in Amies transport media with/without charcoal or Stuart Transport Media.

## 10.6 Skin Biopsy/Lesions/Vesicle Swabs

### 10.6.1 Skin lesions/Vesicle swab

a. Use polyester/cotton swab (for C&S) or Dacron (for PCR).
b. Examine the body part and choose the largest vesicle (representative lesion).
c. Clean the area around the lesion gently with a normal saline-soaked cotton swab.
d. Rupture the vesicle carefully with a hypodermic needle.
e. Swab the vesicular fluid from the ruptured vesicle quickly or use the swabto squeeze out the vesicular fluid.
f. Place the swab in VTM.
g. Send the specimen to the laboratory as soon as possible.

*__Note__: Specimens intended for PCR testing must be collected using a Dacron swab only. Cotton or wooden swabs must not be used, as they may inhibit PCR amplification and compromise test accuracy.

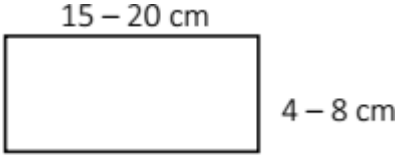
## 11.0 ENVIRONMENTAL AND NON-CLINICAL SPECIMEN

### 11.1 Untreated Water Sampling for *Leptospira*

a. Select appropriate water sampling areas, such as:
   i. Bodies of water such as lakes/ wells/ rivers/ waterfalls etc.
   ii. Water in a shaded area.
   iii. Water in an area with the presence of animals (i.e. paw print marks).
   iv. Water in between stones or cracks on the stone.
   v. Water samples were taken one foot below the water surface.
b. Record temperature and pH (compulsory) in the test request form.
c. Sterilize the collection bucket/pail by pouring 70% alcohol. Let it dry.
d. Lower the bucket into the river/ well/ pond/ lake and ensure that the connecting rope/string does not touch the inner part of the bucket.
e. Draw up a bucket with caution when it is full.
f. Fill 100 ml (minimum) of the collected untreated water into sterile universal samples bag (e.g. Whirl-Pak bags).
g. Label accordingly and put it into the cooler box following a vertical arrangement.
h. Wash the bucket with clean water after use, sterilize with 70% ethanol and dry it.
i. Repeat procedures for sampling in other areas.

### 11.2 Soil Sampling for *Leptospira*

a. Select the land area for sampling with a distance of fewer than 5 meters from a river/pond/ lake.
b. The appropriate soil sampling areas are
   i. Wetland area soil.
   ii. Shaded area soil.
   iii. The soil in an area with the presence of animals (i.e.: paw print marks).
c. Sterilize the respective tools by pouring 70% alcohol. Let it dry.
d. A soil sample size of 15 – 20 cm X 4 – 8cm should be taken in the area after all the loose surface materials are removed.




e. Place 100 g (minimum) of soil into a sterile universal sample bag(e.g. Whirl-Pak).
f. Record temperature and pH in the test request form.

**11.3 Water Sampling for *Legionella***

a. Collect water from a central air conditioning cooling tower or other similartypes of water sources.
b. Water samples must be collected before dosing with a biocide.
c. If dosing has been carried out, take water samples at least 3 days after the dosing.
d. Ensure that the central air conditioning system is operating and water from the cooling tower is circulated through the system for at least one hour before the collection of samples.
e. Do not collect samples near the take-up water inlet.
f. Do not stir up sediments in the cooling tower.
g. Take 1000 ml of water for each sample in sterile containers.

***Note:** Please notify the laboratory at least 3 days before sending the samples.

**11.4 Soil Sampling for *Burkholderia pseudomallei***

a. Use a spade, a small gardening shovel or a scoop.
b. Sterilize the tools by pouring 70% alcohol. Let it dry.
c. Collect a 100g (minimum) of moist soil samples from a depth of 30cm during the dry season or surface soil during the rainy season.
d. Put the soil sample in a sterile universal sample bag (e.g. Whirl-Pak).
e. Label the sample accordingly and record the site sampled.

**11.5 Water Sampling for *Burkholderia pseudomallei***

a. Sterilize the tools by pouring 70% alcohol. Let it dry.
b. Collect 100ml of stagnant water (from a suspected contaminated pool of water) into a sterile universal sample bag.
c. Label the sample accordingly and record the site sampled.

**11.6 Isolate (*Escherichia coli, Salmonella spp. & Shigella spp.*)**

a. Please send pure isolate for serotyping.
b. Sent isolate in nutrient slant to prevent drying.
c. Label the slant accordingly.
d. Transport sample at ambient temperature.

### 11.7 Water Sampling for AGE environment

a. Request 50ml sterile Falcon tube from MKAI according to sample number.
b. Label the tube with sample ID number, type of sample, sampling location and date of sample collection accordingly.
c. Wear gloves to prevent contamination. Avoid touching the inside of the bottle and the cap.
d. Collect at least 30ml of water from the representative locations. For the tap water, remove any aerators and run cold water for 2-5 minutes to clear stagnant water in the pipes. For environmental sources (pool and pond), submerge the bottle to collect a sample, avoiding surface scum or bottom sediment where possible.
e. Disinfect the external Falcon tube with 70% alcohol.
f. Place the Falcon tube into a biohazard plastic bag and store sample in a cooler with ice packs immediately after collection at 4 – 8°C.
g. Fill in the Borang Permohonan Penyiasatan / Pemantauan Sampel Persekitaran. (MKAK/BPENV/02 Rev1), place it outside the cool box and transport at the laboratory as soon as possible.

## 12.0 BASIC TRIPLE PACKAGING SYSTEM

Proper packaging of the specimen is crucial in avoiding leakage during transportation and ensuring the specimen arrives at the destination undamaged, without any potential for environmental release. Basic triple layer packaging system is essential for all modes of transportation of clinical specimens. This system comprises of three individual layers:

### 12.1 Primary receptacle

a. Primary receptacle is the carrier (e.g. tube, vial and bottle) that carry the specimen.
b. The carrier must be watertight and leak proof. The cap should be correctly and securely sealed. The primary receptacles are advisable to transport in upright position.
c. It must be legibly labeled as to its contents.
d. If the specimens contain liquid or semi-liquid substances, the primary receptacles must be wrapped in adequate absorbent material (e.g. gauze, cotton and super-absorbent packets) to absorb all the leaked liquid in the event of breakage or leakage.

### 12.2 Secondary receptacle

a. It is the container which the primary receptacle and the surrounding absorbent materials are placed in.
b. A secondary receptacle must be watertight and leak proof (e.g. disposable zip-lock biohazard plastic bags, screw cap plastic and canisters) in order to enclose and protect the primary receptacle.
c. Several individually wrapped primary receptacles may be placed in single secondary receptacle. It is important that the individually wrapped primary receptacles securely sealed to prevent contact among them.

### 12.3 Third Packaging

a. A third, outer layer packaging is where the secondary receptacle placed.
b. It must be rigid in order to protect the secondary receptacles from physical damage while in transit.
c. It must therefore be a suitable strength for the weight, size and composition of the inner packages to be protected.
d. Specimen laboratory request forms, and other types of information that identify or describe the specimens should be placed in protective cover and placed between the secondary receptacle and third layer packaging. If needed, these documents may be taped to the secondary packaging.

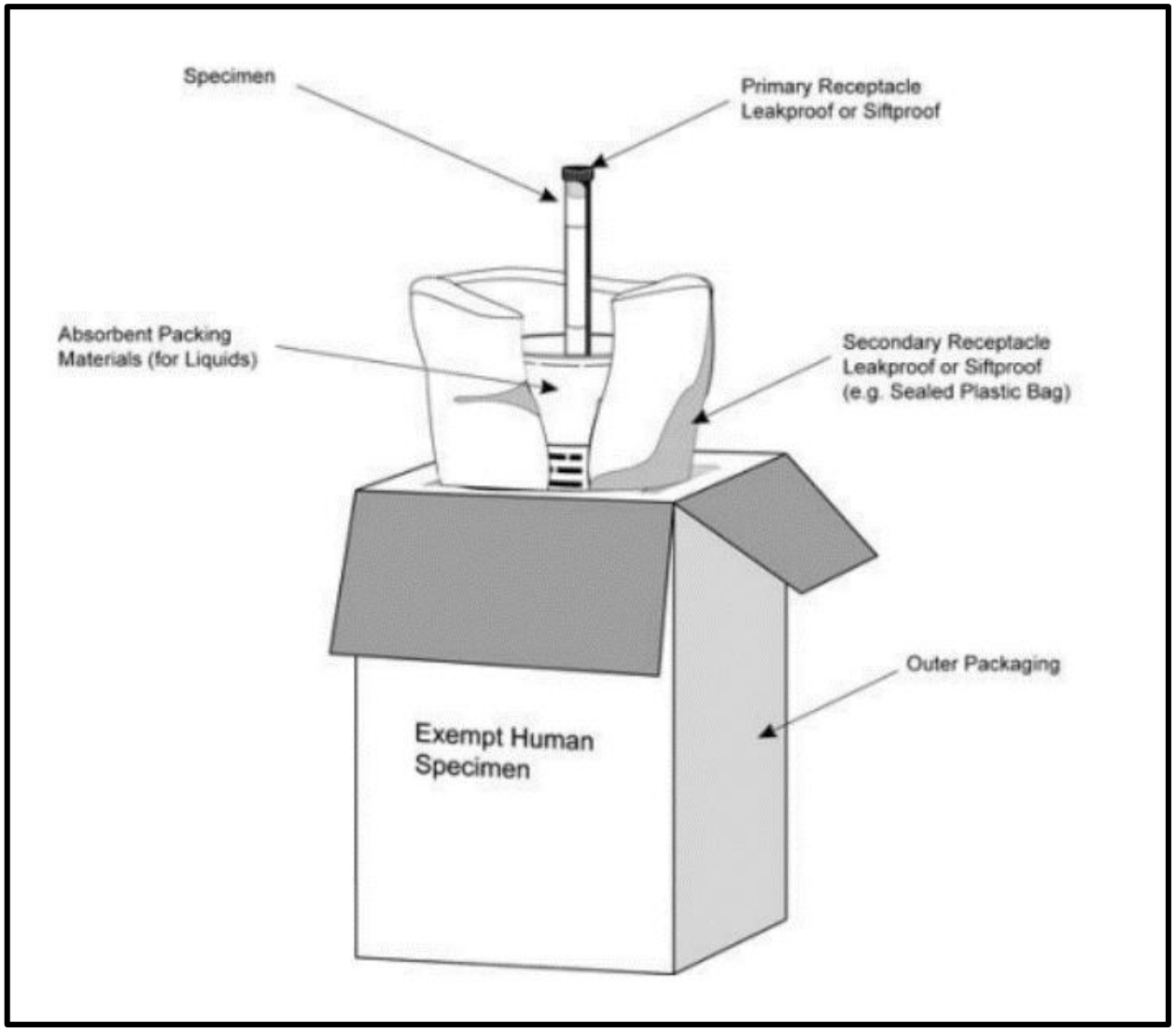



**Figure 1: Example of presentation of basic triple packaging**

*Source: Guidelines for the safe transport of clinical specimens and infectious substances in Malaysia 2023*
(MOH/P/PAK/528.23(GU)-e)

## 13.0 PACKING INSTRUCTION P650 (CATEGORY B INFECTIOUS SUBSTANCE REQUIREMENTS)

Packing Instruction P650 explains how to safely package Category B infectious substances (UN 3373) for transport. When packed according to P650, these substances are safe to ship by air, road, rail, or sea.

### Packaging Requirements (Simple Overview)

- Packaging must follow the triple packaging system:
  - Primary container – leak-proof
  - Secondary container – leak-proof
  - Outer packaging – strong and protective
- P650-compliant packaging can be obtained from many suppliers. Always follow the supplier's instructions carefully to ensure correct packing and sealing.
- There is no official list of approved suppliers. You can find suitable suppliers by searching online for "UN 3373 packaging" or "Category B infectious substance packaging." Courier or logistics companies may also provide guidance.

### Quantity Limits

- Air transport (passenger or cargo aircraft):
  - Maximum 1 litre per primary container
  - Maximum 4 litres per outer package
  - Cooling materials (e.g. dry ice or liquid nitrogen) are not included in this limit
- Surface transport (road, rail, sea):
  - No quantity limit per package

### Additional P650 Requirements

- For surface transport, either the secondary or outer packaging must be rigid
- For air transport, the outer packaging must always be rigid
- The complete package must pass a 1.2 m drop test
- Either the primary or secondary container must withstand internal pressure of 95 kPa (0.95 bar) without leaking

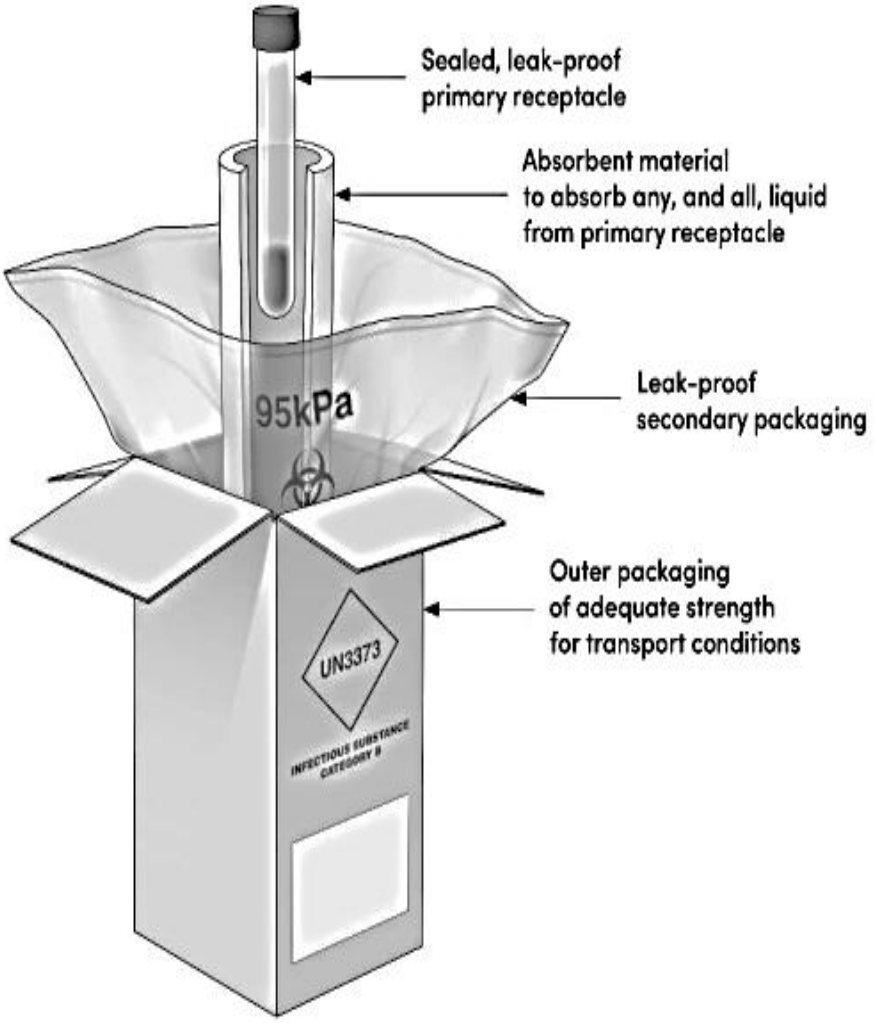



**Figure 2: Example of triple packaging materials that may be used to comply with P650 for Category B infectious substances.**

**Note**: Any detail or further information please refer to Guidelines for the safe transport of clinical specimens and infectious substances in Malaysia 2023 or contact Ipoh Public Health Laboratory.

**REFERENCE**

1. Guidelines for the safe transport of clinical specimens and infectious substances in Malaysia 2023.
2. WHO Guidance on regulations for the Transport of Infectious Substances 2021 – 2022.

# TESTS AVAILABLE

## (DISEASE SECTION)

**TUBERCULOSIS UNIT**

| No | Test | Specimen | Container | Volume | Transport Media | Transportation & Storage | Lab Schedule | TAT | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Culture for *Mycobacterium tuberculosis* – using solid method (LJ) | Sputum | Sterile screw capped container | 3-5 ml | NA | Specimen should be sent immediately after collection. If there is a delay, keep specimen in cold temperature (4-8°C) and send specimen within 48 hours to avoid contamination. Protect specimen from heat and transport specimen in 4-8°C | Mon-Fri<br>Contact on-call person if beyond office hours/ public holidays | 8 weeks (Negative Culture)<br>ID: 5 days from culture positive<br>DST: 35 days from date of positive ID | |
| | | Bronchialwashing | | 2-5 ml | | | | | ID of *Mycobacterium tuberculosis* using ICA method.<br>ID of Non-tuberculous mycobacteria (NTM) is performed by MKAK Sg. Buloh |
| | | Pus | | NA | | | | | |
| | | Urine | | 3-5 ml | | | | | |
| | | Other body fluids (pleural, synovial, CSF etc.) | | 2-5 ml | | | | | |
| | | Tissue (Add 2-5ml sterile saline/ distilled water to avoid drying) | | NA | | | | | |
| | | Gastric Lavage If there is delay, neutralize specimen by adding 1.5ml sterile 40% anhydrous disodium phosphate ($Na_2HPO_4$) for every 35-40 ml specimens. Store neutralized specimen at 4-8°C and send to MKA Ipoh in cold box | | 2-5 ml | | | | | DST *Mycobacterium tuberculosis* using liquid method (MGIT) |
| 2 | MDR TB Investigation (PCR) | Sputum | Sterile screw capped container | 2-5 ml | NA | | Mon-Fri | 7 Working days | Request endorsed by specialist |
| 3 | TB PCR for *Mycobacterium tuberculosis* | Sputum | Sterile screw capped container | | | | Mon-Fri | 7 Working days | TB PCR of Non-tuberculous mycobacteria (NTM) is performed by MKAK Sg. Buloh |
| | | Bronchial Washing | | | | | | | |
| | | CSF | | | | | | | |
| | | Urine | | | | | | | |
| | | Body Fluids | | | | | | | |
| | | Tissue (paraffin embedded tissue not accepted) | | | Add 2-5 ml sterile saline to prevent desiccation (without preservatives) | | | | |
| | | Whole Blood | EDTA | | | | | | |
| 4 | Rapid Molecular TB (M10) | Sputum | Sterile screw capped container | 1-4 ml | NA | | Mon-Thurs (Before 4PM) | 24 Working hours | |
| 5 | Latent TB Investigation - IGRA (Interferon Gamma Release Assay) | Whole Blood | Quanti FERON-Gold Plus Tubes | 1 ml each tube | NA | Refer Remarks | Mon-Thurs<br>(test perform in batches)<br>Inform TB Unit before collect specimen. | 3-21 Working days | Special collection, incubationand centrifugation procedures must be followed. Contact TB Unit for further information. |

**BACTERIOLOGY UNIT**

| No | Test | Specimen | Container | Volume | Transport Media | Transportation & Storage | Lab Schedule | TAT | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | **Culture & Sensitivity**<br>Bacterial enteric pathogens including:<br>*a) Aeromonas spp.*<br>*b) Campylobacter spp*<br>*c) Escherichia coli (EPEC)*<br>*d) Escherichia coli (O157)*<br>*e) Plesiomonas shigelloides*<br>*f) Salmonella spp.*<br>*g) Salmonella typhi*<br>*h) Shigella spp.*<br>*i) Vibrio cholerae*<br>*j) Vibrio spp.*<br>*k) Yersinia enterocolitica*<br>*l) Listeria monocytogenes*<br>*m) Staphylococcus aureus*<br>*n) Bacillus spp.* | Stool / Rectal swab<br>**Note**: 4cm depth with faecal stained | NA | NA | Carry Blair transport medium | Specimen shouldbe sent immediately after collection.<br>If there is a delay, keep specimen in Room Temperature and send specimen within 24 hours.<br>**Note:**<br>Culture for *Campylobacter* spp. is not done if reach laboratory more than 6 hours after collection/ no mention of time collection. | Mon-Fri<br>Contact on-call person if beyond office hours/ public holidays | 3-7 days | Outbreak samples & Contact Investigation |
| 2 | **Culture & Sensitivity**<br>Respiratory bacterial pathogensincluding<br>*a) Haemophilus influenzae*<br>*b) Klebsiella pneumoniae*<br>*c) Neisseria meningitidis*<br>*d) Streptococcus pneumoniae*<br>*e) Streptococcus pyogenes* | Nasal swab/ throat swab | | | Amies transport medium | | Contact Bacteriology unit for appointment | | |
| | | Sputum | Sterile container | | NA | | | | |
| 3 | **Culture & Sensitivity**<br>*Corynebacterium Diphtheria* | Throat swab (preferably from sites with evidence of membrane) | NA | | Amies transport medium | | | | |
| 4 | **Culture & Sensitivity**<br>a) *Haemophilus influenzae*<br>b) *Neisseria meningitidis* | Nasal swab/ throat swab | | | Amies with charcoal transport medium | | | | |

| No | Test | Specimen | Container | Volume | Transport Media | Transportation & Storage | Lab Schedule | TAT | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 5 | **Culture & Sensitivity**<br>Eye bacterial pathogens | Eye swab | NA | NA | Amies (with/ without charcoal)/ Stuart transport media | Specimen shouldbe sent immediately after collection.<br><br>If there is a delay, keep specimen in Room Temperature and send specimen within 48 hours. | Contact Bacteriology unit for appointment | 3-7 days | Outbreak samples & Contact Investigation |
| 6 | **Culture & Sensitivity**<br>Genital bacterial pathogens | Cervical swab/ urethral swab/ vaginal swab | NA | NA | Amies (with/ without charcoal)/ Stuart transport media | | | | |
| 7 | **Culture & Sensitivity**<br>Skin bacterial pathogens | Skin/pus swab | NA | NA | Amies/ Stuart transport media | | | | |
| 8 | **Culture & Sensitivity**<br>Ear bacterial pathogens | Ear swab | NA | NA | Amies/ Stuart transport media | | | | |
| 9 | **Culture & Sensitivity**<br>Urine bacterial pathogens | Urine | Sterile container | NA | NA | Transport specimen at 4-8°Cto reach laboratory within 6 hours after collection | | | |
| 10 | **Leptospira**<br>Detection of Leptospira in environment samples by culture, followed by PCR if Leptospira-like organisms are detected. | Water/Soil | Sterile container | min (100 ml or 100g) | NA | Transport sample at **room temperature** to reach laboratory within 24 hours after collection. | Mon-Fri<br><br>Contact Bacteriology unit for appointment | 21 working days | According to schedule or outbreak samples. |
| 11 | **Leptospira**<br>Microscopic Agglutination Test for Leptospira (MAT) | serum | Plain tube | 1ml | NA | Transport specimen at 4-8 °C to reach laboratory within 24 hours after collection | Mon-Fri | 10 working days | Please include Rapid ELISA kit result.<br>Please call before sending.<br><br>Please note if there is 2nd specimen. |
| 12 | **Leptospira**<br>PCR for Leptospira | Blood | EDTA | 3ml | NA | Transport specimen at4-8 °C to reach laboratory within 24 hours after collection | Mon-Fri<br><br>Contact Bacteriology unit for appointment | 7 working days | |

| No | Test | Specimen | Container | Volume | Transport Media | Transportation & Storage | Lab Schedule | TAT | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 13 | **Serotyping**<br>a) *Salmonella spp.*<br>b) *Shigella spp.* | a) *Salmonella spp.* isolate<br>b) *Shigella spp.* isolate | NA | NA | Nutrient slant | Transport specimen at room temperature. | Mon-Fri | 14 working days | Please use printed ELBIS system request Form/ Per-Pat 301/ Laboratory Based Surveillance Notification Forms. |
| 14 | **Typing**<br>PCR Diarrheagenic *Escherichia coli* | E. coli isolate | | | | | | | |
| 15 | PCR for d-Tartrate Fermentation gene in *Salmonella Paratyphi B* | *Salmonella Paratyphi B* isolate | | | | | | 14 working days after serotyped *Salmonella Paratyphi B* | |
| 16 | Detection of *Legionella pneumophila* in environment by culture | Water/Slime from cooling tower | Sterile container | 1000 ml (water)<br>5 ml - 10 ml (slime) | NA | Transport sample at 4-8 °C to reach laboratory within 24 hours after collection | Contact Bacteriology unit for appointment | 14 workingdays | Inform laboratory at least 3 days before sending. |
| 17 | Detection of *Burkholderia pseudomallei* in environment by culture | Water/soil | Sterile container | min (100 ml or 100 g) | NA | Transport sample at room temperature (in a dark container) to reach laboratory within 24 hours after collection | | | |
| 18 | PCR for *Bordetella pertussis* | Nasopharyn-geal aspirate (NPA) | Sterile container | NA | NA | Transport sample at 4-8 °C to reach laboratory with-in 24 hours after collection | | 48 hours | Inform laboratory before sending. |
| | | Nasopharyn-geal swab (NPS) | NA | | Dacron swab in Amies transport media without charcoal/ VTM | | | | |

**PARASITOLOGY UNIT**

| No | Test | Specimen | Container | Volume | Transport Media | Transportation & Storage | Lab Schedule | TAT | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Rechecking for BFMP | Giemsa-stained BFMP | Slide casing | NA | NA | Room temperature | Mon - Fri | 1 month | |
| 2 | qPCR Malaria | Whole blood | EDTA tube | 2 ml | NA | Transport specimen at room temperature to reach lab within 24 hours | Mon - Fri | 3 - 7 working days | 4-8 °C if by post |
| | | Dried blood spot | Plastic zip lock | NA | | Room temperature | | | |
| | | Blood smear (BFMP) | Slide casing | | | | | | |

**MOLECULAR BIOLOGY UNIT**

| No | Test | Specimen | Container | Volume | Transport Media | Transportation & Storage | Lab Schedule | TAT | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | RT-qPCR Respiratory Viruses | Combine OPS & NPS | NA | 3ml | VTM | Specimens are to be sent immediately to the lab Transport specimen at 4-8 °C to reach laboratory within 24 hours after collection | i) Surveillance: Mon - Fri<br>ii) Outbreak: Mon - Sun<br>iii) Diagnostic: Mon - Fri | i) Surveillance: 7 working days<br>ii) Outbreak: 1-3 days<br>iii) Diagnostic: 3-5 working days | |
| | | Sputum | Sterile container | | NA | | | | Seal the sterile container with parafilm to avoid leak during transportation to lab. |
| | | Nasopharyngeal aspirate | | | | | | | |
| | | Bronchial alveolar | | | | | | | |
| | | Tracheal aspirate | | | | | | | |
| 2 | RT-qPCR Dengue Virus Serotype Surveillance (DVSS) | Serum | Plain tube with gel | 3-5ml | NA | | | | |
| | | Plasma | EDTA | 1-3ml | | | | | |
| 3 | RT-qPCR Flavivirus Surveillance | Serum | Plain tube with gel | 3-5ml | NA | | | | |
| | | Plasma | EDTA | 1-3ml | | | | | |
| 4 | RT-qPCR Enteric viruses | Rectal Swab | NA | 3ml | VTM | | | | |
| | | Fresh stool | Sterile container | Bean size | NA | | | | |
| | | Water environment | Sterile Falcon Tube | 30ml | | | | | Please use *borang* **MKAK/BP/ENV/ 02 Rev 1** |
| 5 | RT-qPCR Enterovirus (HFMD) | Mouth Ulcer Swab | NA | 3ml | VTM | | | | |
| | | Vesicle Swab | | | | | | | |
| | | Rectal swab | | | | | | | |
| | | Fresh stool | Sterile container | Bean size | NA | | | | |
| | | CSF | Sterile screw-capped container (Bijou bottle or Cryovial) | 1ml | NA | | | | |
| | | Throat swab | NA | 3ml | VTM | | | | |
| 6 | RT-qPCR Measles / Rubella | Throat swab | NA | 3ml | VTM | | | | Please use *borang* "**Measle-Borang Permohonan dan Keputusan Ujian Makmal MSLF: 02/Rev2024** |
| | | Urine | Sterile screw-capped container | 10ml (early morning first void) | NA | | | | |
| | | Nasopharyngeal aspirate | | 1 – 3ml | NA | | | | |
| | | Tracheal aspirate | | | | | | | |
| 7 | RT-qPCR Conjunctivitis | Eye swab | NA | 3ml | VTM | | | | |
| 8 | RT-qPCR for Chikungunya | Serum | Plain tube with gel | 3-5 ml | NA | | | | |
| 9 | RT-qPCR Zika virus | Serum | Plain tube with gel | 3-5 ml | NA | | | | |
| | | Urine | Sterile container | 15-20 ml | NA | | | | |
| 10 | RT-qPCR Avian Flu H7N9, H5, H9 | Combine OPS & NPS | NA | 3 ml | VTM | | | | Both serum and urine are required. |
| 11 | RT-qPCR Varicella Zoster virus (Chickenpox) | Vesicle swab | NA | 3 ml | VTM | | | Outbreak: 1-3 days | Please use *borang* **Borang Permohonan Ujian Makmal (Spesimen Klinikal) MKAK-BPU-U01/Rev2018** |
| | | Lesion scab / crust | Sterile container | NA | NA | | | | |
| 12 | RT-qPCR Mumps virus | Oropharyngeal Swab | NA | 3 ml | VTM | | | | |
| | | Buccal swab | | | | | | | |
| | | Saliva | Sterile container | 3-5 ml | NA | | | | |

| No | Test | Specimen | Container | Volume | Transport Media | Transportation & Storage | Lab Schedule | TAT | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 13 | RT-qPCR Viral Hemorrhagic Fever | Serum | Plain tube with gel | 3-5 ml | NA | Specimens are to be sent immediately to the lab Transport specimen at 4-8 °C to reach laboratory within 24 hours after collection | i) Surveillance: Mon - Fri<br>ii) Outbreak: Mon - Sun<br>iii) Diagnostic: Mon - Fri | i) Surveillance: 7 working days<br>ii) Outbreak: 1-3 days<br>iii) Diagnostic: 3-5 working days | |
| | | CSF | Sterile screw-capped container (Bijou bottle or Cryovial) | 1-2 ml | NA | | | | |
| | | Plasma | EDTA | 1-3 ml | NA | | | | |
| 14 | qPCR Monkeypox Virus panel | Lesion fluid swab | NA | 3 ml | VTM | Transport specimen at 2-8 °C to reach laboratory as soon as possible after collection | | 48 hours | Inform laboratory before sending. |
| | | Nasopharyngeal swab (NPS) | | | | | | | |
| | | Tonsillar tissue swab | | | | | | | |
| | | Lesion scab / crust | Sterile container | NA | NA | | | | |
| 15 | RT-qPCR MERS-CoV | Combine OPS & NPS | NA | 3 ml | VTM | Specimens are to be sent immediately to the lab Transport specimen at 4-8 °C to reach laboratory within 24 hours after collection | | Suspected case: 1-3 working days | Seal the sterile container with parafilm to avoid leak during transportation to lab. |
| | | Sputum | Sterile container | | NA | | | | |
| | | Nasopharyngeal aspirate | | | | | | | |
| | | Bronchiol alveolar | | | | | | | |
| | | Tracheal aspirate | | | | | | | |
| 16 | RT-qPCR Other Viruses | Serum | Plain tube with gel | 3 ml | NA | | | | Test offered for outbreak / forensics cases only. Please consult our Clinical Microbiologist (ext.: 1005) prior to sending. |
| | | CSF | Sterile container | 1 ml | | | | | |
| | | Urine | Sterile container | 15-20 ml | | | | | |
| | | Saliva | Sterile container | 3-5 ml | | | | | |
| 17 | WGS SARS-CoV-2 | Combine NPS & OPS | NA | 3 ml | VTM | Transport specimen at 4-8 °C to reach laboratory as soon as possible after collection | | 6 weeks | |
| | | Cassette RTK (positive) | | NA | RTK strip | | | | |

**Note:**

1. **Respiratory Viruses**
   - Influenza A & B and subtyping A H1, H3, H5, H7, and H9, Coronavirus, Adenovirus, RSV, Parainfluenza 1-4, Rhinovirus, Bocavirus, Enterovirus, SARS-CoV-2, HMPV, Parechovirus, MERS-CoV
2. **Enteric viruses**
   - Enterovirus, Rotavirus A/C, Adenovirus, Astrovirus, Sapovirus GI, GII & GIV, Norovirus G1 & GII, Bocavirus, Hepatitis A
3. **Enteroviruses (HFMD)**
   - Pan Enterovirus, Enterovirus 71, Coxsackie A16, Coxsackie A6
4. **Conjunctivitis**
   - Adenovirus, Rubella, Measles, Herpes Simplex virus 1&2, Varicella Zoster Virus, Epstein Barr Virus, Enterovirus
5. **Viral Hemorrhagic Fever**
   - Dengue Virus, Chikungunya, Zika, West Nile Virus, Yellow Fever Virus, Severe Fever with Thrombocytopenia Syndrome Virus
6. **Monkeypox Virus panel**
   - Orthopox, Monkeypox, Monkeypox genotype, Enterovirus, Herpes Simplex virus 1&2, Varicella Zoster Virus, Measles
7. **Other Viruses (Outbreak)**
   - Japanese Encephalitis Virus, Parvovirus B19, Cytomegalovirus, Herpes Simplex virus 1&2, Epstein Barr Virus, Human Herpes Virus 6, John Cunningham Virus, BK Virus, Lymphocytic Choriomeningitis Virus, Rabies
8. **Sequencing / WGS**
   - SARS-CoV-2, Dengue Virus Genotype

**SEROLOGY/VIROLOGY UNIT**

| No | Test | Specimen | Container | Volume | Transport Media | Transportation & Storage | Lab Schedule | TAT | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Measles IgM (ELISA) | Serum | Plain/Gel tube | 3-5 ml | NA | Transport specimen at 4-8 °C to reach laboratory within 48 hours after collection. Please keep in 2-8°C if more than 48 hours. | Tue / Wed, Fri | 4 days | Please use *borang* "**Measle-Borang Permohonan dan Keputusan Ujian Makmal MSLF: 02/Rev2024** |
| 2 | Rubella IgM (ELISA) | | | | | | Mon, Thurs | 7 days | |

**BIOCHEMISTRY UNIT**

| No | Test | Specimen | Container | Volume | Transport Media | Transportation & Storage | Lab Schedule | TAT | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **LIPID PROFILE (LP)** | | | | | | | | | |
| 1 | Total Cholesterol | Serum/ Plasma | Plain/Gel/ Heparin tube | 3.5ml | NA | Transport specimen with icepack. Store at 4-8°C while waiting for transportation | Mon-Fri | 3 working days | For Fasting Lipid Profile, blood should be collected after an overnight fasting for at least 8 hours. (Refer reference ranges Beckman Coulter AU480 on page 34 & 35) |
| 2 | Triglyceride | | | | | | | | |
| 3 | HDL-Cholesterol | | | | | | | | |
| 4 | LDL-Cholesterol | | | | | | | | |
| **LIVER FUNCTION TEST (LFT)** | | | | | | | | | |
| 1 | Total Protein | Serum/ Plasma | Plain/Gel/ Heparin tube | 3.5ml | NA | Transport specimen with icepack. Store at 4-8°C while waiting for transportation | Mon-Fri | 3 working days | Refer reference ranges Beckman Coulter AU480 on page 34 & 35 |
| 2 | Albumin | | | | | | | | |
| 3 | ALT/SGPT | | | | | | | | |
| 4 | AST/SGOT | | | | | | | | |
| 5 | ALP | | | | | | | | |
| 6 | Total Bilirubin | | | | | | | | |
| 7 | Direct Bilirubin | | | | | | | | |
| **RENAL PROFILE (RP)** | | | | | | | | | |
| 1 | Creatinine | Serum/ Plasma | Plain/Gel/ Heparin tube | 3.5ml | NA | Transport specimen with icepack. Store at 4-8°C while waiting for transportation. | Mon-Fri | 3 working days | Refer reference ranges Beckman Coulter AU480 on page 34 & 35 |
| 2 | Urea (BUSE) | | | | | | | | |
| 3 | Sodium (ISE) | | | | | | | | |
| 4 | Potassium (ISE) | | | | | | | | |
| 5 | Chloride (ISE) | | | | | | | | |

| No | Test | Specimen | Container | Volume | Transport Media | Transportation & Storage | Lab Schedule | TAT | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **SINGLE TEST** | | | | | | | | | |
| 1 | Calcium | Serum/ Plasma | Plain/Gel/ Heparin tube | 3.5 ml | NA | Transport specimen with icepack. Store at 4-8°C while waiting for transportation. | Mon-Fri | 3 working days | Refer reference ranges Beckman Coulter AU480 on page 34 & 35 |
| 2 | Phosphate | | | | | | | | |
| 3 | Uric Acid | | | | | | | | |
| 4 | Cholinesterase | Serum | Plain/Gel tube | | | | | 7 working days | |
| **ADENOSINE DEAMINASE (ADA)** | | | | | | | | | |
| 1 | Adenosine Deaminase (ADA) | Pleural Fluid | Plain tube (without gel) | 3 ml (min. 1 ml) | NA | Specimen transportation 2-8°C (48 hours) | Mon-Fri | 4 working days | Refer reference ranges Beckman Coulter AU480 on page 34 & 35 |
| **GLUCOSE** | | | | | | | | | |
| 1 | Fasting Blood Sugar (FBS) | Plasma | NaF/ Potassium Oxalate/ NaF+EDTA | 2ml | NA | Transport specimen with ice pack. Store at 4-8°C while waiting for transportation. | Mon-Fri | 3 working days | For Fasting Blood Sugar (FBS), blood should be collected after an overnight fasting for at least 8 hours. (Refer reference ranges Beckman Coulter AU480 on page 34 & 35) |
| 2 | Two Hours Post Prandial (2HPP) | | | | | | | | Refer reference ranges Beckman Coulter AU480 on page 34 & 35 |
| 3 | Random Blood Sugar (RBS) | | | | | | | | |
| **IODINE DEFICIENCY DISORDER (IDD)** | | | | | | | | | |
| 1 | Urinary Iodine | Urine | Urine container/ Falcon tube (conical) | 15 ml | NA | Specimen Transportation: 1. 4-8°C (<7 days) 2. -20°C (>7 days) | Mon-Fri | 25 working days | Refer on page 36 for reference range |

**Reference Ranges for Analyzer Beckman Coulter AU480**

| No. | Analyte | Reference ranges Beckman Coulter AU480 (unit) |
|---|---|---|
| 1 | Total Cholesterol | 0 - 5.2 mmol/L |
| 2 | Triglyceride | 0 - 1.7 mmol/L |
| 3 | HDL cholesterol | > 1.55 mmol/L (Male),<br>> 1.55 mmol/L (Female) |
| 4 | LDL cholesterol | < 3.36 mmol/L |
| 5 | Total Protein | 66 – 83 g/L |
| 6 | Albumin | 35 – 52 g/L |
| 7 | Alanine aminotransferase (ALT) | 0 – 50 U/L (Male),<br>0 – 35 U/L (Female) |
| 8 | Aspartate aminotransferase (AST) | 0 – 50 U/L (Male),<br>0 – 35 U/L (Female) |
| 9 | Alkaline phosphatase (ALP) | 43 - 115 U/L (Male),<br>33 - 98 U/L (Female) |
| 10 | Total bilirubin | 5 - 21 µmol/L |
| 11 | Direct bilirubin | 0 – 3 µmol/L |
| 12 | Creatinine | 59 - 104 µmol/L (Male),<br>45 - 84 µmol/L (Female) |
| 13 | Urea nitrogen | 2.8 - 7.2 mmol/L |
| 14 | Sodium | 136-146 mmol/L |
| 15 | Potassium | 3.5-5.1 mmol/L |
| 16 | Chloride | 101-109 mmol/L |
| 17 | Calcium | 2.20 - 2.65 mmol/L |
| 18 | Phosphorus | 0.81 - 1.45 mmol/L |
| 19 | Uric acid | 208 - 428 µmol/L (Male)<br>154 - 357 µmol/L (Female) |
| 20 | Cholinesterase, (CHE) | 4620 - 11500 U/L (Male)<br>3930 - 10800 U/L (Female) |
| 21 | Adenosine Deaminase (ADA) | < 29.6 U/L |
| 22 | Fasting Blood Sugar, (FBS) | 3.9 – 6.0 mmol/L |
| 23 | Two Hours Post Prandial, (2HPP) | < 7.8 mmol/L |
| 24 | Random Blood Sugar, (RBS) | < 7.8 mmol/L |

**Diabetic Screen**

- Fasting Plasma Glucose

| Interpretation: | |
|---|---|
| Category | Fasting Plasma Glucose (mmol/L) |
| Normal | 3.9 - 6.0 |
| IFG (Prediabetes) | 6.1 - 6.9 |
| T2DM | ≥ 7.0 |

IFG = Impaired fasting glucose
T2DM = Type 2 Diabetes Mellitus
Recommend OGTT for plasma glucose levels 6.1 - 6.9 mmol/L

- Random Plasma Glucose

| Interpretation: | |
|---|---|
| Category | Random Plasma Glucose (mmol/L) |
| Normal | < 7.8 |
| Indeterminate | 7.8 - 11.0 |
| T2DM | ≥ 11.1 |

T2DM = Type 2 Diabetes Mellitus
Recommend OGTT for plasma glucose levels 7.8 - 11.0 mmol/L.

**OGTT Plasma Glucose**

- OGTT Plasma Glucose Values

| Interpretation: | | |
|---|---|---|
| Category | OGTT Plasma Glucose Values (mmol/L) | |
| | 0-hour | 2-hour |
| Normal | ≤ 6.0 | < 7.8 |
| Impaired Fasting Glu. (IFG)* | 6.1 - 6.9 | - |
| Impaired Glu. Tolerance (IGT)* | - | 7.8 - 11.0 |
| Diabetes Mellitus (DM) | ≥ 7.0 | ≥ 11.1 |

*Patients with Prediabetes (IFG & IGT) have a 2 to 3-fold risk of cardiovascular disease & DM.

**Urine Iodine Concentration (IDD)**

**Epidemiological criteria for assessing iodine nutrition based on median urinary iodine concentrations of school-age children (>=6years)***

| MEDIAN URINARY IODINE (ug/L) | IODINE INTAKE | IODINE STATUS |
|---|---|---|
| <20 | Insufficient | Severe iodine deficiency |
| 20-49 | Insufficient | Moderate iodine deficiency |
| 50-99 | Insufficient | Mild iodine deficiency |
| 100-199 | Adequate | Adequate iodine nutrition |
| 200-299 | Above requirements | Likely to provide adequate intake for pregnant/lactating women, but may pose a slight risk of more than adequate intake in the overall population |
| >=300 | Excessive | Risk of adverse health consequences (iodine-induced hyperthyroidism, autoimmune thyroid diseases) |

**Epidemiological criteria for assessing iodine nutrition based on the median or range in urinary iodine concentrations of pregnant women***

| POPULATION GROUP | MEDIAN URINARY IODINE CONCENTRATION (ug/L) | IODINE INTAKE |
|---|---|---|
| Pregnant women | <150 | Insufficient |
| | 150-249 | Adequate |
| | 250-499 | Above requirements |
| | >=500 | Excessive** |

*For lactating women and children <2 years of age a median urinary iodine concentration of 100ug/L can be used to define adequate iodine intake, but no other categories of iodine intake are defined. Although lactating women have the same requirement as pregnant women, the median urinary iodine is lower because iodine is excreted in breast milk.

**The term "excessive" means in excess of the amount required to prevent and control iodine deficiency.

# FORMS

KEMENTERIAN KESIHATAN MALAYSIA
*PERKHIDMATAN PATOLOGI*
HOSPITAL.....

PER-PAT301

| UNTUK KEGUNAAN MAKMAL |
|---|
| LAB. No |

| | | |
|---|---|---|
| 1. Nama : | | 2. No. Pendaftaran |
| 3. No. K/P : | | 4. Jantina : ☐ Lelaki ☐ Perempuan |
| 5. Umur : | 6. Keturunan : | 7. Wad/Klinik : |
| 8. Tarikh Masuk Wad : | 9. Pekerjaan : | 10. Taraf Perkahwinan : 11. ☐ Bayar ☐ Percuma |

12. No. Laporan Dahulu :

13. Butiran Penting :

| | Ya | Tidak |
|---|---|---|
| Jaundice | ☐ | ☐ |
| Lymphadenopathy | ☐ | ☐ |
| Hepatomegaly | ☐ | ☐ |
| Splenomegaly | ☐ | ☐ |
| Bleeding tendency | ☐ | ☐ |
| h/o Transfusion | ☐ | ☐ |

Haematinics _____

_____

_____

Drug/Chemical History

_____

_____

Data Makmal Terdahulu

Hb _____

Platelet _____

TWDC _____

15. Diagnosis :

16. Kategori Permohonan/Jenis Ujian :

| Patologi Kimia | | Klinikal | | Hematologi | | Histo/Sitologi | | Mikro/Immunologi | |
|---|---|---|---|---|---|---|---|---|---|
| B. Sugar | | Bld. Count | | FBP | | Spesimen | | Spesimen | Ujian |
| B. Urea | | ESR | | BM ASP | | | | | |
| B. Elec. | | BFMP | | Hb. Analysis | | | | | |
| B. Gases | | U. Sugar | | Coagulation | | | | | |
| S. Bilirubin | | U. Alb | | PT | | | | | |
| LFT | | U. Me | | PTT | | | | | |
| Sc.Creatinine | | Stool ME | | BTCT | | | | | |

Lain-lain _____

_____

17. Pengambilan Spesimen : Tarikh : Masa :

18. Nama Doktor :

19. Tarikh :

_____
Tandatangan dan Cop Doktor

LABORATORY BASED SURVEILLANCE NOTIFICATION FORM
DISEASE SECTION, IPOH PUBLIC HEALTH LABORATORY
MINISTRY OF HEALTH MALAYSIA

TEL : 05-5287829 ext 2011 FAX : 05-5287836

**Reporting Lab** : PHL Ipoh / Johor Bahru / Sungai Buloh / FQC Lab _____

**E-mail** : _____

**Please tick the relevent box**

1. **Food taken from**

☐ Routine
☐ Outbreak
☐ Food poisoning

| 2. **Type of food** | **Please tick** | **Please specify the food** |
|---|---|---|
| Ready to eat | ☐ | ..... |
| Raw food packaged | ☐ | ..... |
| Canned food | ☐ | ..... |
| Others | ☐ | ..... |

3. **Date of specimen taken** ...../...../.....(dd/mm/yy)

| 4. **Place of specimen taken** | **Please tick** | **Address** |
|---|---|---|
| Restaurant | ☐ | ..... |
| Hawker stall | ☐ | ..... |
| Supermarket | ☐ | ..... |
| Market | ☐ | ..... |
| Institution | ☐ | ..... |
| Others | ☐ | ..... |

5. **PHL/FQC Laboratory**

☐ *E.coli* isolated Serotype : .....

**Reporting Officer**

Name of Reporting Officer : ..... Signature : .....

Designation : ..... Date : ...../...../.....

**Note** : Please send this form to Ipoh Public Health Laboratory together with *E. coli* isolate

LABORATORY BASED SURVEILLANCE NOTIFICATION FORM
DISEASE CONTROL DIVISION
MINISTRY OF HEALTH MALAYSIA

TEL : 03-26946601 FAX : 03-26946404
Email : survelan@dph.gov.my

## Reporting Laboratory

Patient Name: .....
Patient's Address: .....
.....
.....

IC No : ..... R/N No:.....
Age: ..... Sex :..... Race : .....
Hospital ..... Ward :.....

Please tick the relevent box

Specimen type ☐ Stool ☐ Urine
☐ Blood ☐ CSF

Date of Specimen taken :...../...../.....

Source of specimen Case ☐ Contact ☐ Food ☐
Others ☐

Hospital laboratory Reference Laboratory

☐ Salmonella spp isolated Serotype:_____

☐ Salmonella typhi/ paratyphi isolated Phage Type:_____
Chloramphenicol ☐ Resistant
☐ Sensitive

☐ Haemophilus influenzae isolated Serotype_____

☐ Neisseriae meningitidis isolated Serotype_____

☐ Leptospira: Antibody Positive MAT : Positive/Negative
Titre _____ Titre :_____

☐ Vibrio cholerae
Serotype_____ Serotype_____
Biotype _____ Biotype _____
Tetracyline ☐ Resistant
☐ Sensitive

Name of Reporting Officer.....Signature.....
Designation..... Date :...../...../.....

**Note** : Send this form to : 1 ) Surveillance Section , Disease Control Division , MOH
2 ) Reference Laboratory together with the isolated.

Laboratory Request Form MKA (Environmental Sample) Annex 1c

**MAKMAL KESIHATAN AWAM IPOH**,
Jalan Jelapang, 30020 Ipoh, Perak.
No. Tel : 05-5287829/32/33/34 No. Faksimili : 05-5287836

**BORANG PEMOHONAN PENYIASATAN/PEMANTAUAN LEPTOSPIRA**

| | |
|---|---|
| Institusi yang memohon:<br><br>No Faks:<br><br>Tandatangan/ cop rasmi: | Tarikh/ masa pengambilan sampel:<br><br>Lokasi Persampelan:<br>Jenis sampel:<br>Maklumat kes: |
| Lakaran Kawasan Persampelan/ Kolam:<br><br>Petunjuk: | |

**Analisa Parameter Fizikal**

| ID Sampel | Masa Persampelan | Suhu (°C) | pH | Kekeruhan | Clarity | Warna | Catatan |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Tarikh/masa terima sampel:
Nama dan Tandatangan penerima:

**TBIS 20C**
*Sistem Maklumat TB,KKM*

**Kementerian Kesihatan Malaysia**
**Program Kawalan Penyakit TB**
**Permohonan ujian TB**

**A. Pusat Pungutan spesimen (Wad/KK/Hospital) :** **Tarikh Permohonan:**

**B. Maklumat Pesakit**

| | | |
|---|---|---|
| Nama : | | No Pengenalan Diri (IC/Paspot) : |
| Umur : | No Telefon : | Jantina: ☐ M ☐ F |
| Alamat: | | Warganegara : ☐ Malaysia ☐ Bukan Malaysia, Nyatakan ..... |
| **Status** *RVD* : ☐Positif ☐Negatif | | ☐Diabetik? : ☐Ya ☐Tidak |

**C. Sebab memohon (Tandakan satu)**

☐*Presumptive TB* ----------→

☐*Follow-up TB case (Month of treatment: .....months)*

☐*Contact of TB case*

☐*Contact of DRTB case (RR, MDR, XDR, TDR)*

☐*Suspected MDR-TB*

☐ *Surveillance* of .....

Adakah pesakit telah menerima rawatan ≥ 1 bulan?

☐ Ya ☐ Tidak (New Case)

Sekiranya YA,

No Pendaftaran TB bagi kes adalah: ☐☐-☐☐-☐☐☐☐

Klasifikasi *Previously Treated TB* adalah :

☐After Failure of 1st treatment ☐After Failure of retreatment

☐After loss to follow-up ☐Relapse ☐Others

**D. Jenis Specimen :** ☐ Kahak ( x1 / x2 / x3 ) ☐ Spot ☐ Pagi ☐ lain-lain (nyatakan) : .....

Tarikh pengambilan spesimen : ☐☐-☐☐-☐☐☐☐ .....

**E. Ujian Di pohon** ☐Microskopik ☐Kultur ☐ID & Kerentanan Ubatan (Drug susceptibility)

☐PCR MTB ☐Xpert MTB/RIF ☐LPA ☐Interferon Gamma Release Assay (IGRA)

**F. Maklumat Pemohon**

Tandatangan :

Nama :

Jawatan & Cop Rasmi :

No.Telefon :

**KEPUTUSAN UJIAN MAKMAL (Di isi oleh pihak makmal yang menjalankan ujian)**

*(Sila gunakan bahagian belakang mukasurat ini sekiranya ruangan tidak mencukupi)*

| **Diuji oleh:** | **Disahkan oleh** |
|---|---|
| Tandatangan: | Tandatangan: |
| Nama: | Nama: |
| Jawatan & Cop Rasmi: | Jawatan & Cop Rasmi: |
| No.Telefon: | No.Telefon: |

MKAK-BPU-U01/Rev2018

**BORANG PERMOHONAN UJIAN MAKMAL (SPESIMEN KLINIKAL)**

**MAKMAL KESIHATAN AWAM .....**

**NO RUJUKAN MAKMAL (MKA) :**

**A. MAKLUMAT PESAKIT**

| | | |
|---|---|---|
| Nama Pesakit: | Umur: | No Rujukan Pesakit (R/N): |
| No K.P/ Lain-lain: | Jantina: L / P | |
| Warga Negara: | Bangsa: | Wad: |
| Alamat pesakit: | Pekerjaan: | Status perkahwinan Tanda ( √ ) yang berkenaan: |
| | No. Tel.: | ☐ Bujang ☐ Berkahwin ☐ Lain-lain |

| **B. TUJUAN PERSAMPELAN Tanda ( √ ) yang berkenaan** | | | |
|---|---|---|---|
| Wabak/ Kluster | ☐ | Pesakit (Ada gejala) | ☐ |
| Survelan | ☐ | Kes | ☐ |
| Diagnostik | ☐ | Kontak | ☐ |
| Projek | ☐ | Kluster | ☐ |
| Lain-lain | ☐ | | |

| **C. LAIN-LAIN MAKLUMAT** | |
|---|---|
| **Lokaliti kejadian:** | |
| Sejarah melancong: Ada / Tiada | Negara: |
| Tarikh keluar: | Tarikh masuk: |

**D. RINGKASAN KLINIKAL**

**Tanda ( √ ) yang berkenaan**

| Tanda dan Gejala | Ada (√) | Tarikh *onset* | Tanda dan Gejala | Ada (√) | Tarikh *onset* |
|---|---|---|---|---|---|
| 1) Demam ( $^{0}$C ) | | | 6) | | |
| 2) Selsema | | | 7) | | |
| 3) Cirit-birit | | | 8) | | |
| 4) Muntah | | | 9) | | |

Status & tarikh imunisasi berkaitan: Ada _____Tarikh_____ Tiada _____ Tidak diketahui _____

**E. MAKLUMAT SPESIMEN**

| Jenis Spesimen | Jenis ujian dipohon | Tarikh diambil | Tarikh dihantar | Tanda Tangan Pegawai yang mengambil spesimen *(sila cop)* |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

* **Nota:** *Sila rujuk Service Handbook Makmal Kesihatan Awam Kebangsaan untuk maklumat lanjut tentang spesimen*

| **F. BUTIRAN PEMOHON** | | **G. BUTIRAN MAKMAL TRANSIT** | |
|---|---|---|---|
| Nama | | Nama | |
| Jawatan | | Jawatan | |
| Tempat bertugas (sila cop) | | Tempat bertugas (sila cop) | |
| No H/P: | Email: | No tel & samb. | Email: |
| KK/PKD/Hospital: | | Nama Pusat Transit: | |
| Daerah: | Negeri: | Daerah: | Negeri: |

**H. MAKMAL (untuk kegunaan MKA):**

| **Unit Pengurusan Spesimen** | **Makmal** | | **Catatan** |
|---|---|---|---|
| Suhu: $^{0}$C | Jenis sampel: | Terima / Tolak | |
| Sampel: Terima / Tolak | Sampel dlm transport media: Ya / Tidak | Suhu: $^{0}$C | |
| Nama Penerima : | Nama Penerima: | | |
| Tarikh & masa: | Tarikh & Masa: | | |
| Keputusan ujian disahkan oleh : | | Tarikh: | |

Lampiran 4

## SURVELAN *INFLUENZA-LIKE-ILLNESS* (ILI) DAN *SEVERE ACUTE RESPIRATORY INFECTION* (sARI)

**BORANG PERMOHONAN UJIAN MAKMAL**
**(Sampel ILI Dihantar Ke MKAK/MKA Mengikut Zon & Sampel sARI Dihantar Ke Unit Virologi, IMR)**

**No. Rujukan Makmal (MKAK/MKA/IMR):**

| **A. MAKLUMAT PESAKIT** | | | |
|---|---|---|---|
| Negeri: | | | |
| Hospital / Klinik Kesihatan: | | Wad: | |
| Nama Pesakit: | | No. Kad Pengenalan / Passport: | |
| Alamat: | | Poskod: | No. Telefon: |
| R/N: | Warganegara: | Umur: | Jantina: L / P |

| **B. MAKLUMAT KLINIKAL** | | |
|---|---|---|
| **Gejala** | **Tandakan ( √ ) di ruangan berkenaan** | **Tarikh mula** |
| Demam ≥ 38°C / sejarah demam beberapa hari sebelumnya | | |
| Batuk | | |
| Sakit Tekak | | |
| Pneumonia | | |
| Lain-lain (Nyatakan) | | |

Dapatan X-Ray (sekiranya berkenaan): ……

| **C. MAKLUMAT SPESIMEN KLINIKAL** | | | | |
|---|---|---|---|---|
| **Jenis Spesimen** | **Tandakan ( √ ) di ruangan berkenaan** | **Tarikh diambil** | **Tarikh dihantar** | **Pengambil Sampel** |
| *Nasopharyngeal swab (NPS) Oropharyngeal swab (OPS)* | | | | *(Tandatangan & Cop)* |
| *Saliva* | | | | |
| *Aspirate* (sila nyatakan: ) | | | | |
| Lain-lain (sila nyatakan: ) | | | | |
| ***NOTA:*** *Sampel palitan (swab) mesti dimasukkan ke dalam bekas yang mengandungi Viral Transport Media (VTM) dan sampel lain dimasukkan ke dalam bekas steril kosong. Kesemua jenis sampel mesti disimpan pada suhu 2°-8°C sejurus diambil dan tiba di makmal yang dikenalpasti dalam tempoh sekurang-kurangnya 48 jam selepas pengambilan.* | | | | |

**CATATAN:** ……

| **D. MAKLUMAT PEMOHON** | **E. MAKLUMAT MAKMAL TRANSIT* (sekiranya berkenaan)** |
|---|---|
| Tandatangan & Cop Pegawai: | Tandatangan & Cop Pegawai: |
| No. Telefon: | No. Telefon: |

** Makmal Transit: Makmal dimana spesimen dihantar untuk tujuan pengumpulan sebelum ia seterusnya dihantar ke MKAK/MKA Mengikut Zon / Unit Virologi, IMR*

| **F. UNTUK KEGUNAAN MAKMAL** | |
|---|---|
| **Kaunter Penerimaan Sampel** | **Makmal** |
| Tarikh spesimen diterima: | Tarikh spesimen diterima: |
| Suhu: °C | Suhu: °C |
| Jenis spesimen: | Jenis spesimen: |
| Status: Sampel Diterima / Sampel Ditolak* | Status: Sampel Diterima / Sampel Ditolak* |
| * Sekiranya spesimen ditolak, sila nyatakan sebab: …… | |
| **CATATAN:** | |
| Tandatangan & Cop Pegawai: | Tandatangan & Cop Pegawai: |

- *Makmal Kesihatan Awam Kebangsaan (MKAK) Sungai Buloh, Selangor (u.p. Makmal Isolasi Virus): 03-6126 1200 / 1325*
- *Unit Virologi, Institut Penyelidikan Perubatan (IMR), NIH, Setia Alam; 03-33628960*

MSLF:02/Rev2024

No. Rujukan Makmal: MKA..... / CL/ 20..... /.....

## MEASLES & RUBELLA / CONGENITAL RUBELLA SYNDROME (CRS) - BORANG PERMOHONAN UJIAN MAKMAL

### A. MAKLUMAT PESAKIT

| | | |
|---|---|---|
| Nama Pesakit: | Daerah: | Negeri: |
| Warganegara / Bukan Warganegara (nyatakan) : | Bangsa: | Jantina: L / P |
| No. KP/ lain-lain: | Umur: tahun / bulan | |

### B. MAKLUMAT IMUNISASI MEASLES (MMR/MR/MMRV)

| | | |
|---|---|---|
| Belum layak ☐ Ada☐ Tiada☐ Tidak diketahui ☐ | Tarikh dos terakhir: / / | Jumlah dos: 1 / 2 |

### C. MAKLUMAT EPIDEMIOLOGI

| Tujuan pensampelan | Ya (✓) |
|---|---|
| Wabak/ Kluster/Kontak rapat | |
| Sporadik/ Diagnostik/ Kes *suspected* | |

Lokaliti kejadian:

| | |
|---|---|
| Sejarah ke luar negara: Ada / Tiada | Negara: |
| Tarikh keluar: / / | Tarikh masuk: / / |

### D. MAKLUMAT KLINIKAL

| Gejala (Simptom) | Ada (✓) / Tiada (X) | Tarikh mula |
|---|---|---|
| Demam | | / / |
| Ruam (*maculopapular rash*) | | / / |
| Konjunktivitis | | Catatan: |
| Batuk | | |
| "*Coryza*" | | |
| Kes Kematian/ICU | | |
| Lain-lain (nyatakan): | | |

### E. SPESIMEN KLINIKAL

Spesimen: ☐ Pertama ☐ Kedua (sampel serum ulangan sahaja)

| Spesimen (tandakan ✓ di ruang berkenaan) | | Tarikh diambil | Tarikh penghantaran | Untuk kegunaan makmal: Sila tanda jika terima (tandakan ✓ di ruang berkenaan) | Tandatangan pegawai yang mengambil spesimen |
|---|---|---|---|---|---|
| Darah / Serum | | / / | / / | | Tandatangan: |
| Sekresi pernafasan (*Throat swab/ Nasopharyngeal swab/Respiratory secretion*) | | / / | / / | | Nama dan Cop Pegawai: |
| Air kencing *(Urine)* | | / / | / / | | |
| CSF *(Cerebrospinal fluid)* | | / / | / / | | |

### F. MAKLUMAT PEMOHON

Hospital/Klinik Kesihatan/PKD:

| | |
|---|---|
| Tandatangan:<br>Nama dan Cop Pegawai: | No telefon: |

### G. KAUNTER PENERIMAAN SPESIMEN

| Cop Makmal: | Suhu Penerimaan: | Tarikh: |
|---|---|---|
| | | |

**MAKMAL KESIHATAN AWAM IPOH**
**KEMENTERIAN KESIHATAN MALAYSIA**
**Tel : 05 - 528 7829**

## VIRAL ENCEPHALITIS / MENINGITIS INVESTIGATION REQUEST FORM

| PURPOSE OF SAMPLING | SPECIMEN CATEGORY |
|---|---|
| ☐ Diagnostic<br>☐ Outbreak / Cluster | ☐ Case<br>☐ Contact |

**PATIENT INFORMATION**

| | | | |
|---|---|---|---|
| Name | | Age | |
| I/C No. | | Gender | Male / Female |
| R/N No. | | Occupation | |
| Ward | | Nationality | Malaysian / Non-Malaysian (_____) |

**EPIDEMIOLOGY INFORMATION**

| Travelling History | | Place of Occurance (Please state it e.g. school/ household/ public places) |
|---|---|---|
| Country | Date Visit | |
| | | |

| Exposure History | | | Recreational Activities | |
|---|---|---|---|---|
| Type of animal/ arthropod | | Date of Exposure | ☐ Camping | ☐ Swimming |
| Animal | | | ☐ Hunting | ☐ Others (_____) |
| Arthropod | | | | |

| Immunization Status | | | |
|---|---|---|---|
| ☐ Complete | ☐ Incomplete | Other Vaccination Taken: | Date of Last Dose: |
| | | | |

**CLINICAL SUMMARY**

| | | | |
|---|---|---|---|
| **Date Onset of Fever:** _____ | ☐ Altered mental status | ☐ Nausea | ☐ Seizures |
| | ☐ Irritability | ☐ Patient Expired | ☐ Stiff Neck |
| ☐ Fever (T____°C) | ☐ Loss of Consciousness | ☐ Photophobia | ☐ Sudden severe dementia |
| ☐ Headache | ☐ Muscle Weakness | ☐ Rash | ☐ Vomiting |

**Clinical/ Provisional Diagnosis:**

**LABORATORY FINDINGS AT ADMISSION**

| Hb | TWBC | %PN | %L | %N | %M | %E | Platelets | HCT |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

**CEREBROSPINAL FLUID (CSF) ANALYSIS RESULT**

Pressure : Normal / High  Appearance : Clear / Turbid  Protein : Normal / High

Glucose : Normal / Low  Cell Count : _____ /ul lymphocytes (Normal Range : <5/ul)

**SPECIMEN INFORMATION**

**Specimen Type :** ☐ CSF ☐ Serum ☐ Throat Swab ☐ Urine ☐ Saliva ☐ Others :

**Date & Time Specimen Collection:** dd / mm / yyyy @ ____am / pm

**REQUESTOR INFORMATION**

| | | | |
|---|---|---|---|
| Name | | Emel Address | |
| Designation | | Hosp. / PKD | |
| Sign & Cop | | Tel & Fax No. | |

**FOR LABORATORY USE ONLY**

| Specimen received by : | Date & Time specimen received: |
|---|---|
| | |

## MAKMAL KESIHATAN AWAM KEBANGSAAN

### BORANG PERMOHONAN UJIAN MAKMAL HFMD

**No. Rujukan Makmal:** **MKAK/ENT/20____/_____)**

| **A. TUJUAN PERSAMPELAN** | |
|---|---|
| Wabak | O |
| Survelan (Klinik Sentinel) | O |
| Kes Teruk (Masuk Wad & Umur < 5 tahun) | O |

| **B. MAKLUMAT PESAKIT** | |
|---|---|
| Nama Pesakit: | |
| No. Kad Pengenalan / Passport: | Umur: |
| Warganegara: | Jantina: L / P |
| Hospital / Klinik Kesihatan: | Wad: |
| R/N: | Bangsa : |
| Negeri: | Daerah : |

| **C. MAKLUMAT KLINIKAL** | | |
|---|---|---|
| **Gejala** | **Tandakan ( √ ) di ruangan berkenaan** | **Tarikh mula** |
| Demam ≥ 38°C | | |
| Ulser di mulut & tekak | | |
| Maculopapular rash dan / vesikel pada tapak tangan dan tapak kaki | | |
| Tanda dan gejala URTI | | |
| Lain-lain | | |

| **D. MAKLUMAT SPESIMEN KLINIKAL** | | | | |
|---|---|---|---|---|
| **Jenis Spesimen** | **Tandakan ( √ ) di ruangan berkenaan** | **Tarikh diambil** | **Tarikh dihantar** | **Pengambil Sampel** |
| Rectal swab | | | | |
| Mouth ulcer | | | | |
| Vesicle swab | | | | |
| Stool | | | | |

| **E. MAKLUMAT PEMOHON** | **F. MAKLUMAT MAKMAL TRANSIT* (sekiranya berkenaan)** |
|---|---|
| Tandatangan & Cop Pegawai: | Tandatangan & Cop Pegawai: |
| No. Telefon: | No. Telefon: |

| **G. UNTUK KEGUNAAN MAKMAL** | |
|---|---|
| **Kaunter Penerimaan Sampel** | **Makmal** |
| Tarikh spesimen diterima: | Tarikh spesimen diterima: |
| Suhu: °C | Suhu: °C |
| Jenis spesimen: | Jenis spesimen: |
| Status: Sampel Diterima / Sampel Ditolak* | Status: Sampel Diterima / Sampel Ditolak* |
| * Sekiranya spesimen ditolak, sila nyatakan sebab: …… | |
| **CATATAN:** | |
| Tandatangan & Cop Pegawai: | Tandatangan & Cop Pegawai: |

*Sebarang kemusykilan sila hubungi:*

- *Makmal Kesihatan Awam Kebangsaan (MKAK) Sungai Buloh, Selangor (u.p. Makmal Isolasi Virus): 03-6126 1200 / 1325*
- *Sample swab mesti dimasukkan dlm vtm dan suhu penghantaran utk semua sample adalah 2-8 degree celcius*

*MKAK-BPU-D02(rev_Nov_2015)*

**MAKMAL KESIHATAN AWAM KEBANGSAAN, KEMENTERIAN KESIHATAN MALAYSIA**

Lot 1853, Kg Melayu Sungai Buloh, 47000 Sungai Buloh, Selangor Darul Ehsan
Tel: 03-61565109 Fax: 03-61402249/61569654

**LABORATORY REQUEST FORM FOR DENGUE AND FLAVIVIRUS**

| Lab No. *(for lab use)* : | |
|---|---|

**REQUESTOR INFORMATION**

Name :
Post :
Address :
District : State :
Tel. No. : Fax No. : Email :

**Purpose of Sampling**

a. Dengue (please tick purpose of sampling as below)
- ☐ Outbreak
- ☐ Surveillance
- ☐ Diagnostic

b. Flavivirus (please tick purpose of sampling as below)
- ☐ Outbreak
- ☐ Surveillance
- ☐ Diagnostic

**Specimen Category :** ☐ **case** Contact ☐

**A. PATIENT'S INFORMATION**

Name :
IC No.
Reference No. :
Address
Postcode :
District : State :

Age : Date of birth
Sex : ☐ Male ☐ Female
Nationality : ☐ Malaysian ☐ Non Malaysian
(Please state country of origin)_____
Occupation :
Tel. No. :

**B. CLINICAL SUMMARY**

- ☐ Fever : T ……°C
- ☐ Retro-orbital pain
- ☐ Maculopapular rash
- ☐ Vomitting
- ☐ Myalgia/arthralgia
- ☐ Diarrhea
- ☐ Bleeding tendencies
- ☐ Hepatomegaly
- ☐ Shock
- ☐ CNS Complications

Date of fever onset : _____(dd/mm/yyyy)

**Laboratory findings at admission**

Hb : TWBC : (PN : %; L: %; M : %; E: %)
Platelets : /mm$^3$ HCT :
Dengue NS1 : Date of test :
Method :
Dengue IgG : Date of test :
Method :
Dengue IgM : Date of test :
Method :

Clinical/Provisional Diagnosis :
- ☐ Dengue Fever
- ☐ Dengue Shock Syndrome
- ☐ Compensated Shock
- ☐ Dengue Hemorrhagic
- ☐ Death : _____(dd/mm/yyyy)
- ☐ Other (flavivirus).

**C. PATIENT'S LOCATION**

☐ Clinic ☐ Ward ☐ ICU

**D. SPECIMEN INFORMATION**

| Type of specimen : | Name of Collector : |
|---|---|
| Date of Collection: (dd/mm/yyyy) | Date specimen Received (for lab use) : (dd/mm/yyyy) |

**E. RESULTS** *(for lab use only)*

| Verified by : | Date: |
|---|---|

MKAK/BP/ENV/02 Rev 1

**BORANG UMUM**
**PERMOHONAN PENYIASATAN/PEMANTAUAN SAMPEL PERSEKITARAN**
**KEMENTERIAN KESIHATAN MALAYSIA**

Pusat pengujian sampel (*bulatkan*) MKAK ***/MKAI/MKAKB/MKAJB/MKAKK/IMR***

**No makmal:**

| **A. MAKLUMAT PEMOHON** | |
|---|---|
| Nama: | |
| Jawatan: | |
| Nama Institusi: | |
| Daerah: | Negeri: |
| No. Telefon: | No. Fax: |
| Email: | |
| Nama Pegawai mengambil sampel: | |
| No. Kad Kuasa Pegawai: | |

| **B. MAKLUMAT SAMPEL** | |
|---|---|
| **No ID sampel:** | |
| Jenis Sampel: | |
| Tarikh Persampelan: | Masa: |
| Lokaliti Umum Persampelan: | |
| Sub lokaliti persampelan:<br>*(STP/ open canal/river)* | |
| *Geocoordinates*: | Tahap kandungan minyak: |
| Warna: | Ciri fizikal yang lain: |
| Tahap keladak: | Bau: |
| Suhu sampel: | pH: |
| Cuaca semasa persampelan: | Isipadu: ml/ kg |
| Kadar aliran air: | |
| Jenis ujian dipohon: | |
| **C.MAKLUMAT SAMPEL BERKAITAN PENGESANAN LEGIONELLA SAHAJA** | |
| Jumlah Tangki/Menara Penyejuk: | Tarikh Akhir Penyelenggaraan: |
| Kaedah yang digunakan untuk penyelenggaraan (termasuk jenis bahan kimia): | |
| **D. MAKLUMAT KES (jika ada)** | |
| Nama Kes / Kontak: | Status Kes / kontak: (Hidup/ Mati) * |
| No. K/P atau ID | Tanda dan Gejala: |
| Pekerjaan / Pendedahan | |

**E. MAKLUMAT LOKASI PERSAMPELAN**

Keadaan Sekitar Lokasi Persampelan

- ☐ Premis makanan *(Kekal/Bergerak)
- ☐ Penternakan haiwan. Nyatakan:
- ☐ Kawasan kediaman / Perumahan. Nyatakan:
- ☐ Aktiviti rekreasi. Nyatakan:
- ☐ Aktiviti pertanian
- ☐ Sistem pengurusan sisa *(Baik/Tidak)
- ☐ Sistem saliran air*(Baik/Tidak)
- ☐ Kawasan banjir
- ☐ Kawasan redup / celah batu
- ☐ Lain-lain:

*potong mana yang tidak berkenaan

Adakah sampel air menjadi sumber bekalan air kepada awam? ☐ Ya ☐ Tidak

Jenis sumber air: ☐ Terawat ☐ Tidak terawat. Nyatakan

**F. LAKARAN LOKASI PERSAMPELAN**

Petunjuk:

No. Rujukan .....

(Malaria 35)

KEMENTERIAN KESIHATAN

RANCANGAN KAWALAN PENYAKIT-PENYAKIT BAWAAN VEKTOR

SEMENANJUNG MALAYSIA

Negeri (Kod/Nama) .....

Daerah (Kod/Nama) .....

Sektor (Kod/Nama).....

Lokaliti (Kod/Nama).....

Bulan dan Tahun .....

# DAFTAR KES MALARIA

Salinan Untuk .....

Tandatangan Pelapor.....

Jawatan .....

Tarikh.....

| No. Kes (C-) | Nama | Umur | Jantina | Keturunan | Alamat* Kod: Nama: | Sumber Selaid | | | Parasit | Jenis Kajian | Punca Jangkitan | Rawatan Radikal | Catatan |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Unit (Kod Lokaliti) | Tarikh Kutipan (dan Pemeriksaan) | Bil. Batch dan No. Selaid | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |
| | | | | | / | ( / ) | ( ) | | | | | | |

M5.1 (83)

* Sila beri alamat penuh jika perlu.

L—JPN., Tr.

| Document No. | MKAI/SP/F-36 |
|---|---|
| Edition No. | 2 |
| Edition Date | 1st March 2020 |

# INFORMED CONSENT LABORATORY TEST

## TEST INFORMATIONS

Name of Disease / Test : _____

I understand the following :

1. This is specific for _____
   - A **POSITIVE** result is an indication that i may be predisposed to or have the specific disease, or condition. Further testing may be needed to confirm the diagnosis
   - A **NEGATIVE** result is an indication that i may not be predisposed to or may not have the specific disease. Due to limitation in the technology, maybe not be detected by the test
   - There may be a possibility that the laboratory findings will be UNINTERPRETABLE or of unknown significance. In rare circumstances, findings may be suggestive of a condition different than the diagnosis that was originally considered.
2. The potential benefit of this test is to confirm the diagnosis of the condition.
3. Errorneous result and incorrect interpretation may occur because of the rare technical error, sample misidentification, sample contamination and general laboratory error.
4. Accurate interpretation of the sample test result depends on correct information about the clinical diagnosis, clinical presentation and date onset fever and travelling history.
5. The test offered are considered to be the best available at this time
6. In order to help me understand the test results, the results will be reported to me only through a doctor.
7. The reports shall be used ONLY for clinical interpretation.
8. This report shall NOT be used for any forensic purposes or is NOT VALID for forensic interpretation.
9. This report shall NOT be used in any courts of law or in legal matters and is NOT VALID for legal interpretation.

## INFORMED CONSENT :

1. A biologic specimen (blood, tissue, respiratory samples, body fluids and feces) will be collected for the tests for the above conditions.
2. After sample testing is completed, a small amount of my sample may be made anonymous and used for medical education, quality control or research. Since the samples have been anonymised, any research results obtained cannot be reported to me. I understand that any biologic specimens obtained for the purpose of the laboratory testing become the exclusive property of MKAI's laboratories. After the specific test(s) requested have been completed, the laboratory may dispose, retain, or use the de-identified specimen(s) for the validation or education; i.e publication into journals. I understand that my identity will be protected.
3. Laboratory results are strictly confidential and will not be released to anyone including my relatives/ other than my doctors without my consent.

| To be completed by the: | |
|---|---|
| **PATIENT / PARENTS / LEGAL GUARDIAN** | **DOCTOR / COUNSELLOR** |
| I have read and received a copy of this consent form. I understand the information provided in this document and I have had the opportunity to ask questions about testing, the procedure and the associated risks, benefits and limitations. I agree to have the testing and accept the risks and limitations.<br><br>SIGNATURE :<br><br>NAME & I/C NO. :<br>DATE : | I have fully explained the nature of the requested test(s) to the patient / parent / legal guard<br><br>SIGNATURE AND OFFIAL STAMP :<br><br>NAME :<br>DATE : |

| Document No. | MKAI/SP/F-36 |
|---|---|
| Edition No. | 2 |
| Edition Date | 1st March 2020 |

# KEBENARAN MENJALANKAN UJIAN MAKMAL

## MAKLUMAT UJIAN YANG DIJALANKAN

Nama Penyakit / Ujian : _____

Saya memahami penerangan yang berikut :

1. Ujian ini khusus untuk _____

   * Keputusan ujian **POSITIF** adalah indikasi bahawa saya terdedah kepada atau menghidapi penyakit/ keadaan yang tertentu. Oleh itu ujian lanjutan adalah diperlukan bagi mengesahkan penyakit tersebut.
   * Keputusan ujian **NEGATIF** adalah indikasi bahawa saya tidak terdedah kepada atau tidak menghidapi penyakit/ keadaan yang tertentu atau tidak dapat dikesan disebabkan oleh limitasi teknologi kaedah ujian yang digunakan.
   * Ada juga kemungkinan keputusan ujian tidak dapat DIINTERPRETASI atau tidak diketahui signifikasinya. Dalam keadaan tertentu, keputusan ujian mungkin menunjukkan keputusan yang tidak selaras dengan diagnosis asal yang telah dijangkakan.

2. Kebaikan ujian ini adalah untuk pengesahan diagnosis sesuatu penyakit.
3. Keputusan dan interpretasi yang tidak tepat berkemungkinan boleh berlaku berpunca daripada kesilapan teknikal yang tidak lazim, kesilapan pengenalpastian identiti sampel, kontaminasi sampel, mutasi pada tapak primer dan kesilapan umum makmal.
4. Ketepatan interpretasi keputusan ujian bergantung kepada ketepatan maklumat diagnosis klinikal, tanda-tanda sypmtomatik penyakit, *'date onset fever'* dan maklumat sejarah perjalanan.
5. Ujian yang ditawarkan adalah ujian yang terbaik boleh didapati pada masa ini
6. Bagi tujuan membantu saya memahami laporan keputusan ujian, ianya akan dimaklumkan kepada saya hanya melalui doktor.
7. Keputusan ujian ini digunakan HANYA untuk interpretasi klinikal.
8. Keputusan ujian ini tidak boleh digunakan untuk apa-apa tujuan forensik atau TIDAK SAH untuk tafsiran forensik
9. Keputusan ujian ini tidak boleh digunakan dalam mana-mana mahkamah undang-undang atau dalam hal-hal berkaitan perundangan dan TIDAK SAH untuk tafsiran undang-undang.
10. Selepas ujian selesai, sebahagian sampel akan dilabel tanpa nama dan digunakan untuk tujuan pembelajaran, kawalan kualiti atau penyelidikan. Keputusan ujian tersebut tidak akan dimaklumkan kepada saya kerana sampel tersebut adalah dilabel tanpa nama. Saya faham bahawa spesimen biologi yang diambil untuk tujuan ujian teersebut adalah hak milik eksklusif makmal MKAI. Selepas ujian yang diminta selesai diproses makmal berhak melupus, menyimpan atau menggunakan kembali spesimen tersebut untuk ujian validasi atau pembelajaran,
11. Keputusan ujian adalah sulit dan tidak akan didedahkan kepada sesiapa termasuk ahli keluarga atau individu selain doktor saya tanpa keizinan saya.

| Untuk diisi oleh : | |
|---|---|
| **PESAKIT / IBUBAPA / PENJAGA SAH** | **DOKTOR / KAUNSELOR** |
| Saya telah membaca dan menerima salinan borang kebenaran. Saya memahami isi kandungan di dalam dokumen ini dan mempunyai peluang untuk bertanyakan soalan tentang ujian, prosedur ujian dan risiko yang berkaitan, manfaat dan limitasi ujian. Saya setuju untuk menjalani ujian ini dan menerima risiko serta limitasinya.<br><br>TANDATANGAN :<br><br>NAMA & NO. I/C :<br>TARIKH : | Saya telah menerangkan sepenuhnya tentang ujian yang ingin dijalankan kepada pesakit/ ibubapa/ penjaga yang sah.<br><br>TANDATANGAN :<br><br>NAMA & NO. I/C :<br>TARIKH : |

**Appendix 1**

**FLOW CHART AND GUIDELINE OF SPECIMEN TRANSPORTATION TO IPOH PUBLIC HEALTH LABORATORY**

| Flow Chart | Action (Sender) |
|---|---|
| Sample preparation at clinic. | Make sure specimen is place in a biohazard plastic bag and the request form in a separate plastic bag. |
| Specimen packaging for transportation. | The biohazard bag which has the specimen inside is stored in a cool box with icepack. Make sure the icepack is enough to ensure the required transportation temperature 4 - 8°C is maintain. Send the cool box with the request form to Ipoh Public Health Laboratory. |
| Specimen transportation to Ipoh Public Health Laboratory. | Make sure to send the specimen immediately to maintain the temperature in accordance to Ipoh Public Health Laboratory requirement. |
| Specimen temperature check at sample reception counter, Ipoh Public Health Laboratory. | Do not remove the specimen from the cool box. Bring the cool box and request form to the specimen reception counter for specimen temperature checking. |
| Record specimen transportation details at sample reception counter, Ipoh Public Health Laboratory. | Sender must place a signature in the specimen reception record book at specimen reception counter, Ipoh Public Health Laboratory. |

KEMENTERIAN KESIHATAN MALAYSIA
MAKMAL KESIHATAN AWAM IPOH

# BORANG ADUAN / CADANGAN PELANGGAN

**Mohon imbas kod QR dan isikan borang aduan sekiranya terdapat aduan/maklumbalas untuk perhatian MKAI.**

**Makmal Kesihatan Awam Ipoh**

**Jalan Jelapang**

**30020 Ipoh**

**Perak.**

**Tel: 05-5287829/30/32/33/34**

**https://jknperak.moh.gov.my/mkai**