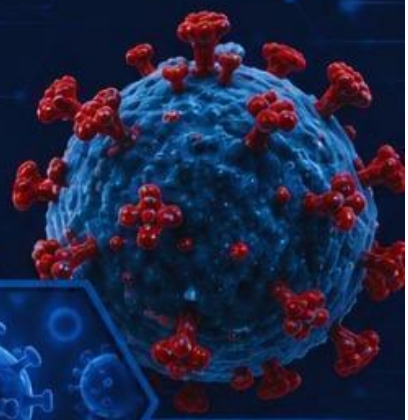
MKA
JOHOR BAHRU
MAKMAL KESIHATAN AWAM JOHOR BAHRU

MKAJB
DISEASE SECTION TEST HANDBOOK
5TH EDITION

Accurate Results • Timely Action • Better Health



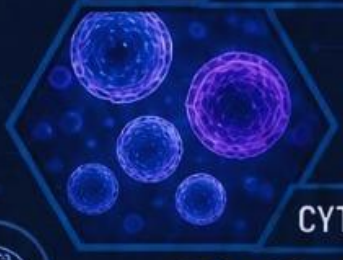
VIROLOGY

BACTERIOLOGY

TUBERCULOSIS

MOLECULAR

BIOCHEMISTRY



CYTOLOGY

ISO

ISO 15189:2022
ISO 9001:2015
ACCREDITED LABORATORY

2026

PENGARAH

MAKMAL KESIHATAN AWAM JOHOR BAHRU

Makmal Kesihatan Awam Johor Bahru (MKAJB) bertindak sebagai makmal rujukan utama bagi pelaksanaan ujian saringan dan pengesahan, berpandukan piawai yang ditetapkan oleh Kementerian Kesihatan Malaysia (KKM) serta Pertubuhan Kesihatan Sedunia (WHO). Penerbitan MKAJB Disease Section Test Handbook ini bertujuan untuk menyediakan garis panduan komprehensif bagi memastikan setiap prosedur makmal dan keperluan penghantaran sampel dipatuhi sepenuhnya.

Penggunaan manual ini secara optimum dijangka dapat:

* Mengoptimakan Pengurusan Spesimen: Mengurangkan kadar penolakan sampel dan mengelakkan pembaziran sumber.
* Meningkatkan Kecekapan Operasi: Menjamin penyampaian keputusan ujian yang pantas, tepat, dan berkualiti.
* Memenuhi piawai Pihak Berkepentingan: Mematuhi keperluan pelanggan serta selaras dengan peraturan dan perundangan semasa.

Adalah menjadi harapan kami agar handbook ini dijadikan rujukan berwibawa oleh semua pengamal perubatan dan kakitangan makmal demi mengekalkan kecemerlangan perkhidmatan Kesihatan Awam.

DR SHAHRIL AZIAN BIN MASROM
Pakar Perubatan Perunding Kesihatan Awam UD15
Pengarah Makmal Kesihatan Awam Johor Bahru

KETUA SEKSYEN PENYAKIT
MAKMAL KESIHATAN AWAM JOHOR BAHRU

Assalamualaikum Warahmatullahi Wabarakatuh dan Salam Malaysia Madani.

Alhamdulillah, dengan izin Allah SWT, MKAJB Disease Section Test Handbook ini berjaya diterbitkan sebagai panduan dan rujukan kepada warga kerja, pelawat serta pihak berkepentingan.

Handbook ini mengandungi maklumat penting berkaitan fungsi, peranan, perkhidmatan dan kemudahan yang disediakan oleh makmal. Sebagai makmal yang di akreditasi MS ISO 15189, diharapkan penerbitan ini dapat membantu meningkatkan kefahaman serta memperkukuhkan penyampaian perkhidmatan kesihatan awam yang cekap, berkualiti dan berintegriti.

Setinggi-tinggi penghargaan diucapkan kepada semua pihak yang telah menyumbang tenaga dan idea dalam menjayakan penerbitan handbook ini. Semoga usaha ini memberi manfaat kepada semua dan menjadi pemangkin kepada kecemerlangan perkhidmatan Makmal Kesihatan Awam.

Sekian, terima kasih,

DR NURUL KHALIDAH BINTI ZAINAN
Pegawai Perubatan Pakar (Mikrobiologi) UD 14
Ketua Seksyen Penyakit
Makmal Kesihatan Awam Johor Bahru

URUSETIA PENERBITAN

MKAJB DISEASE SECTION TEST HANDBOOK

EDISI KE-LIMA 2026

MAKMAL KESIHATAN AWAM JOHOR BAHRU

PENASIHAT

DR SHAHRIL AZIAN BIN MASROM

Pakar Perubatan Kesihatan Awam UD15
Pengarah Makmal Kesihatan Awam Johor Bahru, Johor

PENGERUSI

DR NURUL KHALIDAH BINTI ZAINAN

Pakar Patologi (Mikrobiologi) UD 14
Ketua Seksyen Penyakit
Makmal Kesihatan Awam Johor Bahru, Johor

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Seksyen Penyakit
Makmal Kesihatan Awam Johor Bahru, Johor

URUSETIA UNIT

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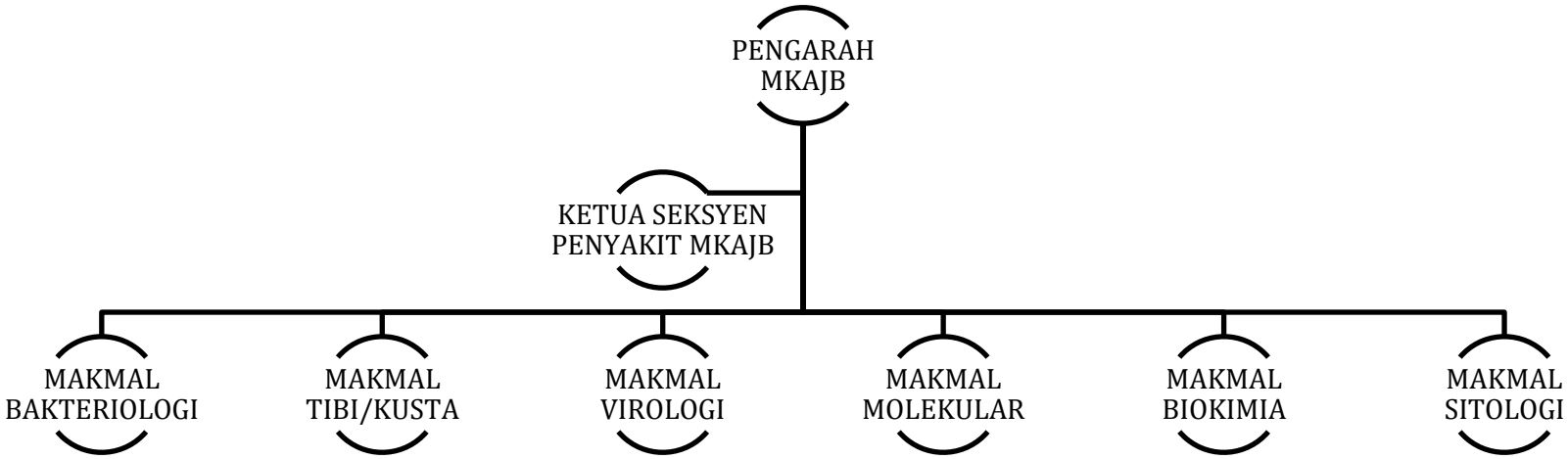
Pn Siti Noor Aisyah Md Hussin	Pegawai Sains (Mikrobiologi) Unit Tibi Kusta, MKAJB
Dr. Priyatharisni Kaniappan	Pegawai Sains (Mikrobiologi) Unit Virologi/ Molekular, MKAJB
Pn Nik Nur Azma Nordin	Pegawai Sains (Mikrobiologi) Unit Virologi/ Molekular, MKAJB
Cik Nur Fatini Mohd Yusof	Pegawai Sains (Mikrobiologi) Unit Virologi/ Molekular MKAJB
Pn Farhana Ab Hadi	Pegawai Sains (Kimia Hayat) Unit Biokimia, MKAJB
Pn Nurhana Assyifa Saparin	Pegawai Sains (Kimia Hayat) Unit Biokimia, MKAJB
Pn Sheri Sharlina Muhadzir	Juruteknologi Makmal Perubatan, Unit Sitologi, MKAJB
Pn Nurulfateha Misnar	Pegawai Sains (Mikrobiologi) Unit Bakteriologi, MKAJB
Pn Wazney Qistina Rukhmanudin	Juruteknologi Makmal Perubatan, Unit Bakteriologi, MKAJB

CARTA ORGANISASI SEKSYEN PENYAKIT

MAKMAL KESIHATAN AWAM JOHOR BAHRU, JOHOR



SENARAI ISI KANDUNGAN

NOMBOR TELEFON MAKMAL DAN UNIT

Nombor telefon MKAJB: 07-2387162 Alamat email MKAJB: MKAJB@moh.gov.my

Bil	UNIT	NOMBOR SAMBUNGAN
1	Pengarah MKAJB	1001
2	Ketua Seksyen Penyakit, MKAJB	2016
3	Bilik Pegawai	1085/2007/2010/2011
4	Makmal Mikobakteriologi (Makmal TB/Kusta)	2003/2006
5	Makmal Bakteriologi	2009
6	Makmal Biokimia	2013
7	Makmal Sitologi	2018
8	Makmal Virologi/ Molekular	2022

SENARAI NAMA PEGAWAI YANG BOLEH DIHUBUNGI DI MKAJB

NO	UNIT	NAMA PEGAWAI	JAWATAN	BAHAGIAN RUJUKAN	EXT
1	Pengurusan	Dr Shahril Azian Masrom	Pengarah MKAJB	Clinical advice	1001
2	Seksyen Penyakit	Dr Nurul Khalidah Zainan	Ketua Seksyen Penyakit	Clinical advice	2016
3	Biokimia	Pn Farhana Ab Hadi	Pegawai Sains (Kimia Hayat)	Laboratory advice, Result tracing, complain	2010/ 2013
4	Biokimia	Pn Nurhana Assyifa	Pegawai Sains (Kimia Hayat)	Laboratory Report Interpretation, Result tracing, complain	2010/ 1085
5	Bakteriologi	Pn Nurulfateha Misnar	Pegawai Sains (Mikrobiologi)	Laboratory advice, complain	2007
6	Bakteriologi	Pn Wazney Qistina Rukmanuddin	JTMP	Result tracing	2009
7	Tibi/kusta	Dr Nur Eyuni Mohd Salleh	Pegawai Sains (Mikrobiologi)	Laboratory advice, complaint	2007
8	Tibi/kusta	Pn Siti Noor Aisyah Md Hussin	Pegawai Sains (Mikrobiologi)	Laboratory report interpretation, complaint	1085
9	Tibi/kusta	En Nor Zahidi Kodori	JTMP	Result tracing	2003
10	Tibi/kusta	Cik Norhuda Jaafar	JTMP	Result tracing	2003
11	Unit Virologi /Molekular	Pn Priyatharshini Kaniappan	Pegawai Sains (Mikrobiologi)	Laboratory advice, complain	2011
12	Unit Virologi /Molekular	Pn Nik Nur Azma Nordin	Pegawai Sains (Mikrobiologi)	Laboratory report interpretation, complain	2010
13	Unit Virologi /Molekular	Nur Fatini Mohd Yusof	Pegawai Sains (Mikrobiologi)	Laboratory report interpretation, complain	2010
14	Unit Virologi /Molekular	Pn Rubiah Mohd Zulkipli	JTMP	Result tracing	2022
15	Unit Virologi /Molekular	Cik Nor Azlina Md Nasir	Penolong Pegawai Sains	Result tracing	2022
16	Sitologi	Pn Sheri Sharlina Muhadzir	JTMP	Laboratory advice, Result Tracing, Complain	2018

PENGENALAN

Makmal Kesihatan Awam Johor Bahru adalah makmal yang menjalankan ujian-ujian makmal untuk tujuan surveilan dan wabak bagi menyokong aktiviti program kesihatan awam di dalam Negeri Johor.

VISI

Menyediakan perkhidmatan makmal kesihatan awam yang cepat, tepat dan berkesan dengan cara pengurusan yang bersistematik dan memenuhi keperluan pelanggan.

MISI

Secara berpasukan, kami akan menyediakan perkhidmatan yang efisien dan memenuhi keperluan untuk penjagaan kesihatan pesakit secara profesional dengan pembangunan teknologi terkini melalui latihan dan penyelidikan.

OBJEKTIF

Perkhidmatan Seksyen penyakit MKAJB adalah merangkumi Negeri Johor dan Melaka.

Objektif seksyen penyakit adalah:

1. Menyediakan perkhidmatan makmal untuk aktiviti surveilan
2. Menyediakah perkhidmatan makmal untuk penyiasatan wabak
3. Menyediakan perkhidmatan penyelaras/penganjur untuk penilaian kualiti ujian makmal
4. Menyediakan program latihan kualiti untuk anggota makmal
5. Menjalankan kajian yang berkaitan dengan kesihatan awam dan Kementerian Kesihatan
6. Menulis laporan dan penerbitan

PIAGAM PELANGGAN

- Memberi penjelasan yang lengkap untuk ujian yang ditawarkan kepada pelanggan Memproses spesimen mengikut prosedur yang telah ditetapkan oleh KKM
- Menjalankan ujian dengan tepat, berkesan dan boleh dihasilkan semula (*reproducibility*) dan terpelihara dengan menggunakan kaedah dan teknologi yang telah disahkan
- Menjalankan ujian STAT/URGENT mengikut tempoh masa yang telah ditetapkan.
- Menjaga kerahsiaan keputusan ujian dan butiran pelanggan

SKOP PERKHIDMATAN

Seksyen penyakit terdiri daripada:

- Unit Biokimia
- Unit Bakteriologi
- Unit Tibi/Kusta
- Unit Virologi/Molekular
- Unit Sitologi

WAKTU OPERASI

Waktu pejabat:

Isnin - Jumaat : 8.00 pagi – 5.00 petang

***Isnin –Khamis : 1.00 petang - 2.00 petang

***Jumaat : 12.15 tengahari - 2.45 petang

***rehat/kaunter penerimaan sampel tutup**

Perkhidmatan di luar waktu pejabat akan dilaksanakan oleh anggota yang bertugas mengikut jadual yang ditetapkan. Pelanggan perlu berkomunikasi dengan MKAJB sekiranya ada sampel yang perlu dihantar ke MKAJB selepas waktu pejabat.

LOKASI

Alamat: Makmal Kesihatan Awam Johor Bahru, Jalan Persiaran Tanjung, Tampoi, 81200 Johor Bahru, Johor

Goggle Map: 1.51008,103.70710

ABBREVIATION

AFB	ACID FAST BACILLI
BAL	BRONCHIAL-ALVEOLAR LAVAGE
BBA	BLIND BRONCHIAL ASPIRATE
C&S	CULTURE AND SENSITIVITY
COVID	CORONA VIRUS DISEASE SARSCOV2
CSF	CEREBROSPINAL FLUID
DST	DRUG SUSCEPTIBILITY TESTING
EDTA	ETHYLENEDIAMINETETRAACETIC ACID
FLP	FASTING LIPID PROFILE
GD	GOOGLE DRIVE
HDL	HIGH DENSITY LIPOPROTEIN
HKL	HOSPITAL KUALA LUMPUR
ID	IDENTIFICATION
IGG	IMMUNOGLOBULIN G
IGM	IMMUNOGLOBULIN M
IGRA	INTERFERON GAMMA RELEASE ASSAY
ILI	INFLUENZA-LIKE-ILLNESS
IMR	INSTITUTE OF MEDICAL RESEARCH
INH	ISONIAZID
LDL	LOW DENSITY LIPOPROTEIN
LPA	LINE PROBE ASSAY
LTAT	LABORATORY TURN AROUND TIME
MAT	MICROAGGLUTINATION TEST
MDR-TB	MULTI DRUG RESISTANT TUBERCULOSIS
MERS-COV	MIDDLE-EAST RESPIRATORY SYNDROME CORONAVIRUS
MKAJB	MAKMAL KESIHATAN AWAM JOHOR BAHRU
MKAK	MAKMAL KESIHATAN AWAM KEBANGSAAN
MTB	MYCOBACTERIUM TUBERCULOSIS
MTBC	MYCOBACTERIUM TUBERCULOSIS COMPLEX
NS1	NON-STRUCTURAL PROTEIN 1
NTM	NONTUBERCULOUS MYCOBACTERIA
PCR	POLYMERASE CHAIN REACTION
PKD	PUSAT KESIHATAN DAERAH
RIF	RIFAMPICIN
RLTAT	REFERENCE LABORATORY TURN AROUND TIME
TAT	TURN AROUND TIME
VTM	VIRAL TRANSPORT MEDIA

SENARAI UJIAN DITAWARKAN DI MAKMAL BIOKIMIA MKAJB

NO	PROFILE	TESTS	METHOD	TYPE OF SPECIMEN	SPECIMEN CONTAINER	SPECIMEN VOLUME	LTAT	REMARK	FORM
1	Toxicology	Cholinesterase	Butyrylthiocholine (Trinder),	Serum	Plain Tube (Without anticoagulant)/ Serum Separator Tube	3 ml	5 days	Store and transport sample in ice pack (2-8ºC) *Anggota PKD yang terlibat dengan aktiviti fogging sahaja.	D/WS/02-001 (Borang Permohonan Ujian Cholinesterase)
2	Lipid Profile	Cholesterol	Cholesterol oxidase, esterase, peroxidase	Serum/ plasma	Plain Tube / Heparin/ Serum Separator Tube	3 ml	3 days	Store and transport sample in ice pack (2-8ºC)	D-FM-G-003 (Borang Permohonan Ujian Makmal)
		HDL-Cholesterol	Direct measure, immunoinhibition	Serum/ plasma	Plain Tube / Heparin/ Serum Separator Tube	3 ml	3 days		
		Triglyceride	Enzymatic, end point	Serum/plasma	Plain Tube / Heparin/ Serum Separator Tube	3 ml	3 days		

SENARAI UJIAN DITAWARKAN DI MAKMAL BIOKIMIA MKAJB

NO	PROFILE	TESTS	METHOD	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT	REMARK	FORM
3	Liver Function Test	ALT	UV without P5P	Serum /plasma	Plain Tube / Heparin/ Serum Separator Tube	3 ml	3 days	Store and transport sample in ice pack (2-8ºC)	D-FM-G-003 (Borang Permohonan Ujian Makmal
		AST	UV without P5P	Serum/ plasma	Plain Tube / Heparin/ Serum Separator Tube	3 ml	3 days		
		Total Bilirubin	Diazonium Ion	Serum/ plasma	Plain Tube / Heparin/ Serum Separator Tube	3 ml	3 days		
		Total Protein	Biuret method	Serum/ plasma	Plain Tube / Heparin /Serum Separator Tube	3 ml	3 days		D-FM-G-003 (Borang Permohonan Ujian Makmal

		Albumin	Bromcresol Green (BCG)	Serum/ plasma	Plain Tube / Heparin /Serum Separator Tube	3 ml	3 days	Store and transport sample in ice pack (2-8ºC)	
		ALP	PNPP, AMP Buffer	Serum/ plasma	Plain Tube / Heparin / Serum Separator Tube	3 ml	3 days		

SENARAI UJIAN DITAWARKAN DI MAKMAL BIOKIMIA MKAJB

NO	PROFILE	TESTS	METHOD	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT	REMARK	FORM
4	Renal Profile	Chloride	ISE indirect	Serum/ plasma	Plain Tube / Heparin/ Serum Separator Tube	3 ml	3 days	Store and transport sample in ice pack (2-8ºC)	D-FM-G-003 (Borang Permohonan Ujian Makmal)
		Creatinine	Alkaline picrate method	Serum/ plasma	Plain Tube / Heparin/ Serum Separator Tube	3 ml	3 days		
		Potassium	ISE indirect	Serum/ plasma	Plain Tube / Heparin/ Serum Separator Tube	3 ml	3 days		
		Sodium	ISE indirect	Serum/ plasma	Plain Tube / Heparin/ Serum	3 ml	3 days		

					Separator Tube				
		Urea	Urease, UV	Serum/ plasma	Plain Tube / Heparin/ Serum Separator Tube	3 ml	3 days	Store and transport sample in ice pack (2-8ºC)	D-FM-G-003 (Borang Permohonan Ujian Makmal)
		Uric Acid	Uricase, colorimetric	Serum/ plasma	Plain Tube / Heparin/ Serum Separator Tube	3 ml	3 days		

SENARAI UJIAN DITAWARKAN DI MAKMAL BIOKIMIA MKAJB

NO	PROFILE	TESTS	METHOD	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT	REMARK	FORM
5	Miscellaneous Tests	Calcium	Arsenazo III	Serum/ plasma	Plain Tube / Heparin/ Serum Separator Tube	3 ml	3 days	Store and transport sample in ice pack (2-8ºC)	D-FM-G-003 (Borang Permohonan Ujian Makmal)
		Inorganic phosphate	Phosphomolybdate method	Serum/ plasma	Plain Tube / Heparin/ Serum Separator Tube	3 ml	3 days		
		Glucose i) Fasting Blood Glucose ii) Random Blood Glucose	Hexokinase	Plasma	Na fluoride/K oxalate	2 ml	3 days	Store and transport sample in ice pack (2-8ºC) Samples need to be taken after minimum > 8 hours of fasting for FBS Test	
6	TB Screening Test	Adenosine Deaminase (ADA)	Colorimetric assay	Pleural fluid	Plain container (Red cap)	5 ml	7 days	Transfer sample into Plain tube container	MKAK-BPU-U01/Rev2018

								(preferable) prior shipment to the lab	(Borang Permohonan Ujian Makmal (Spesimen Klinikal) TBIS 20C (Borang Permohonan Ujian TB)

SENARAI UJIAN DITAWARKAN DI MAKMAL BAKTERIOLOGI MKAJB

NO	TESTS	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT (WORKING DAYS)	REMARK	FORM
1	Enteric pathogen	Rectal swab / Stool swab	Cary Blair	One swab per person	7 days	1. Send the samples to laboratory within 24 hours after collection at ambient temperature. 2. If delay (NOT >48 hours), please keep samples at 2°C – 8°C and send samples in ice. 3. Ensure the swab shows some fecal staining to avoid low quality sampling.	Borang Permohonan Ujian Makmal D/FM/G-003
2	Salmonella	Rectal swab / Stool swab	Cary Blair	One swab per person	7 days		
3	Vibrio	Rectal swab / Stool swab	Cary Blair	One swab per person	7 days		
4	Stool clearance	Rectal swab / Stool swab	Cary Blair	One swab per person	7 days		
5	Respiratory Bacteria Culture	Throat swab	Amies charcoal	One swab per person	7 days	1. Send the samples to the laboratory within 24 hours after collection at ambient temperature. 2. If Send within 24 hours after collection is unavoidable, send within 48 hours in 2°C – 8°C 3. Delay in transportation will affect the viability of the bacteria.	
		Sputum	Sterile container	1-3 ML	7 days	1. Send immediately after collection at 2°C – 8°C. 2. Delay in transportation will affect the viability of the bacteria.	
6	*C.diphteria* Culture & Toxin detection	Throat swab (contact)	Swab in Amies media (clear)	One swab per person	7 days	1. Send within 24 hours after collection at 2°C – 8°C temperature. 2. Delay in transportation will affect the viability of the bacteria.	
		Nasopharyngeal swab (contact)	Amies clear	One swab per person	7 days		
7	*C.diphteria* PCR for Toxin Detection	Bacterial Culture	Pure culture on blood agar	One plate per person	7 days	1. Send at 2°C – 8°C 2. Inoculate a pure single colony on Blood Agar / Hoyles Tellurite Agar	

SENARAI UJIAN DITAWARKAN DI MAKMAL BAKTERIOLOGI MKAJB

NO	TESTS	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT (WORKING DAYS)	REMARK	FORM
8	*Bordetella pertussis* Culture	Pernasal swab or Nasophary ngeal Swab (contact)	Amies Charcoal with flocked or dacron swab	One swab per person	10 days	1. Send within 24 hours after collection at ambient temperature. **DO NOT REFRIGERATE** 2. Do not use Calcium alginate or cotton swab. 3. Delay in transportation will affect the quality of the sample.	Borang Permohonan Ujian Makmal D/FM/G-003
9	*Bordetella pertussis* PCR	Pernasal swab or Nasophary ngeal Swab (contact)	Flocked or dacron swab in 5ml Normal saline	One swab per person	7 days	1. Send within 24 hours after collection at 2°C – 8°C 2. Do not use Calcium alginate or cotton swab. 3. Delay in transportation will affect the quality of the sample.	Borang Permohonan Ujian Makmal D/FM/G-003
10	Leptospira: Microscopic Agglutination test for Leptospira	Serum	Plain tube	3ml	7 days	1. Send samples at 2°C – 8°C. 2. The Requester shall attach the Serology IgM Leptospira result. 3. Please indicate **Date of Onset** in patient's clinical History	Leptospirosis Request Form D/WS/01-016 Atau Borang Permohonan Ujian (Umum) MKAK-BPU-U01/Rev2018
11	Leptospira: Serology IgM (outbreak only)	Serum	Plain tube	3ml	7 days	1. Send samples at 2°C – 8°C. 2. Haemolysed samples shall be rejected.	
12	Leptospira: Real-Time PCR	Plasma / Whole blood	EDTA tube	3ml-5ml	7 days	1. Samples should be collected within 10 days after onset of illness. 2. A brief concise history of illness and physical findings is required, especially the **date of onset** of illness and date of sample collection.	
		Mid-stream Urine	Sterile container	3ml	7 days	1. Suitable for samples with MORE THAN 10 days after onset of illness. 2. A brief concise history of illness and physical findings is required, especially the date of onset of illness and date of sample collection.	

SENARAI UJIAN YANG DITAWARKAN DI MAKMAL BAKTERIOLOGI MKAJB

NO	TESTS	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT (WORKING DAYS)	REMARK	FORM
13	Leptospira sp. Culture and detection in Environmental sample	Water	Sterile Whirl Pak	250 ml	21 days	1. Send immediately after collection at ambient temperature. 2.Send sample during working hours (8am-5pm)	Borang Permohonan Ujian Sampel Persekitaran D/FM/G-053
		Soil	Sterile Whirl Pak	200 g	21 days	1. Send immediately after collection at ambient temperature. 2. Send sample during working hours (8am-5pm)	
14	Culture and Identification of *B. pseudomallei* in Environmental sample	Water	Sterile Whirl Pak	200 ml	21 days	1. Send immediately after collection at ambient temperature. 2.Send sample during working hours (8am-5pm)	
		Soil	Sterile Whirl Pak	200 g	21 days	1. Send immediately after collection at ambient temperature. 2. Send sample during working hours (8am-5pm)	
15	Culture and Identification of Enteric Pathogen in Environmental sample	Untreated Water	Sterile Whirl Pak	200 ml	21 days	1. Request by appointment only. 2. Send immediately after collection at 2°C – 8°C 3. Delay in transportation will affect the viability of the bacteria.	Borang Permohonan Ujian Sampel Persekitaran D/FM/G-053
16	*Legionella pneumophila*: Culture , Enumeration and Identification	Water from Cooling tower	Insulated Sterile screw cap container	1000ml	21 days	1. Request by appointment only. 2. Send immediately after collection at 2°C – 8°C 3. Delay in transportation will affect the viability of the bacteria.	Borang Permohonan Ujian Sampel Persekitaran D/FM/G-053

NO	TESTS	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT (WORKING DAYS)	REMARK	FORM
17	Interlaboratory Comparison Sifilis	Serum	Plain tube	3-5ml	-	1. Send serum sample at 2°C – 8°C. 2. Haemolysed samples shall be rejected.	EQA (ILC) Syphilis Report Form MKAJB/BAK/EQA-SY/WS-01 Atau EQA RECHECKING SYPHILIS SEROLOGY REPORT FORM MKAK/BAK/EQA-SYP/WS-04

SENARAI UJIAN DITAWARKAN DI MAKMAL VIROLOGI/ MOLEKULAR MKAJB

NO	TESTS	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT	REMARK	FORM
1.	Chikungunya Virus PCR	Serum	Plain tube with serum separator	1ml / Serum 5ml / Blood	7 days	1. Sample should be collected within 3 days from onset of illness. 2. A brief concise history of illness and physical findings is required especially the date of onset of illness date of sample collection.	Borang Permohonan Ujian Makmal D-FM-G-003
		Plasma	EDTA				
2.	Dengue Virus PCR	Serum	Plain tube with serum separator	1ml / Serum 5ml / Blood	7 days	1. Sample should be collected within 5 days from onset of illness. 2. 5 sampel NS1 positif/ sentinel per week. 3. Severe/ mortality Dengue from Johor.	LABORATORY REQUEST FORM FOR DENGUE AND FLAVIVIRUS MKAK-BPU-D02 (rev_Nov_2015)
		Plasma	EDTA				
		CSF	Sterile Screw Capped container	1ml			
3.	Flavivirus PCR	Serum	Plain tube with serum separator	1ml / Serum 5ml / Blood	7 days	1. Sample should be collected within 5 days from onset of illness. 2. 2 sampel NS1/IgG/IgM negatif/ sentinel per week	
		Plasma	EDTA				
4.	Zika Virus PCR	Serum	Plain tube with serum separator	1ml / Serum 5ml / Blood	7 days (outbreak: 2 days)	1. Sample should be collected within 5 days from onset of illness. 2. A brief concise history of illness and physical findings is required, especially the date of onset of illness. Outbreak investigation (Sampel from close contact of ZIKA patient)	Borang Permohonan Ujian Makmal D-FM-G-003
		Urine	Sterile screw capped container	5ml			

All sample for molecular tests (PCR) need to be transport at 2-8°C within 24 hours to 48 hours. If exceed 48 hours, the sample should be stored at -70°C.

SENARAI UJIAN DITAWARKAN DI MAKMAL VIROLOGI/ MOLEKULAR MKAJB

NO	TESTS	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT	REMARK	FORM
5.	Enterovirus PCR - HFMD Panel : CA 16 CA 6 EV 71 Pan-Enterovirus CA 24 (wabak Conjunctivitis)	Mouth Ulcer Swab	VTM	2-2.5ml	Survelen:14 days Outbreak:3 days Sporadik:7 days	1. Sample should be collected within 5 days from onset of illness.	BORANG PERMOHONAN UJIAN MAKMAL HFMD
		Vesicle Swab	VTM	2-2.5ml			
		Stool	Sterile screw capped container	(5g or 'pea size')			
		Rectal Swab	VTM	2-2.5ml			
		Throat Swab	VTM	2-2.5ml			
		Pleural fluid	Sterile screw capped container	1-3 ml			
		Cerebrospinal fluid (CSF)	Sterile screw capped container	1-3 ml			
6.	Respiratory Virus PCR (Influenza A H1N1 & H3N2, Influenza B, RSV)	Nasopharyngeal Swab/ Nasal swab/ Throat Swab/ Combined OPS/NPS	VTM	2-2.5ml	7 days (Outbreak: 3 days)	1. Sample should be collected within 5 days after onset of illness. 2. A brief concise history of illness and physical findings is required, especially the date of onset of illness. * Outbreak Investigation (Only 5 samples per cluster.)	Surveillance: Lampiran 4 Outbreak: D-FM-G-003

All sample for molecular tests (PCR) need to be transported at 2-8°C within 24 hours to 48 hours. If it exceeds 48 hours, the sample should be stored at -80°C.

SENARAI UJIAN DITAWARKAN DI MAKMAL VIROLOGI/ MOLEKULAR MKAJB

NO	TESTS	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT	REMARK	FORM
7.	Respiratory Virus PCR (Adenovirus, Human Rhinovirus, Metaneumovirus, Bocavirus)	Nasopharyngeal Swab/ Nasal swab/ Throat Swab/ Combined OPS/NPS	VTM	2-2.5ml	3 days	1. Sample should be collected within 5 days after onset of illness. 2. A brief concise history of illness and physical findings is required, especially the date of onset of illness. * Outbreak Investigation only (Only 5 samples per cluster.)	Borang Permohonan Ujian Makmal D-FM-G-003
8.	Respiratory Virus Antigen PCR (MERS- CoV)	Combined OPS/ NPS	VTM	2-2.5ml	3 days	1. History of traveling to a Middle East Country within 14 days before onset of illness. 2. Suspected case of MERS in Klinik Kesihatan, close contacts to a confirmed case of MERS	D-FM-G-003/ PER-PAT 301
		Deep cough sputum	Sterile screw capped container	1-3 ml			
		Nasopharyngeal aspirate	Sterile screw capped container	1-3 ml			
9.	SARS-CoV-2 PCR	Combined NPS and OPS	VTM	2-2.5ml	7 days (Surveillance) 3 days (Outbreak)	1. Sample positive SARS-CoV-2 with Ct <25 will be selected for Whole Genome Sequencing. 2. 15 samples per sentinel/ week for ILI Surveillance.	Surveillance: Lampiran 4 Outbreak: D-FM-G-003
		Deep Throat Saliva	DTS container	2ml			

All sample for molecular tests (PCR) need to be transport at 2-8°C within 24 hours to 48 hours. If exceed 48 hours, the sample should be stored at -70°C.

SENARAI UJIAN DITAWARKAN DI MAKMAL VIROLOGI/ MOLEKULAR MKAJB

NO	TESTS	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT	REMARK	FORM
10.	Monkeypox PCR	Lesion fluid swab/ Scab or crust	Sterile container or VTM	1.5ml – 2ml	2 days	1. The type of specimen to be collected depends on the disease phase (Rash, Prodome, Post-Rash) and clinical signs. 2. Please consult MKAJB Clinical Microbiologist/Pathologist before sampling. 3. Patient information is provided with the specimens (date of onset of fever & Rash, other clinical signs, date of specimen collection, current status of the individual (stage of rash), nationality/country, travel history to affected mpox country, contact history with mpox patient, specimen type) 4. For lesion fluid from vesicles or pustules - Swab two separate lesions using different swabs and place both swabs into the same vial containing VTM (preferred) OR sterile container. Note the site/location of the sample in the form. 5. For lesion scab or crust - Two specimens taken from different locations and put into the same sterile container. Note the site/location of the sample in the form. 6. Each tonsillar swab and NPS should be collected into separate VTM tubes	Borang Permohonan Ujian Makmal (Spesimen Klinikal) MKAK- BPU-U01/Rev2018
11.	Monkeypox PCR	Tonsillar swab/ Nasopharyngeal swab	VTM	1.5ml – 2ml	2 days		

All samples for molecular tests (PCR) need to be transported at 2-8°C within 24 hours to 48 hours. If it exceeds 48 hours, the sample should be stored at -70°C.

SENARAI UJIAN DITAWARKAN DI MAKMAL VIROLOGI/ MOLEKULAR MKAJB

NO	TESTS	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT	REMARK	FORM
12.	Measles PCR	Throat swab	VTM	2-2.5ml	14 days	1. Respiratory secretion should be taken 1 – 5 days of rash onset. 2. A brief concise history of illness and physical findings is required especially the date of onset of illness and the date of specimen collection. 3. Respiratory secretion (nasopharyngeal specimen) should be taken 1 – 7 days of rash onset	MEASLES & RUBELLA/ CONGENITAL RUBELLA SYNDROME (CRS) - BORANG PERMOHONAN UJIAN MAKMAL MSLF:02/2024
		Urine	Sterile screw capped container	10 ml of urine (Early morning first void)			
		Nasopharyngeal secretion/ Tracheal aspirate	Sterile screw capped container	1-3 ml			
13.	Rubella PCR	Throat swab	VTM	2-2.5ml	14 days	1. Specimen should be collected within 5days from onset of illness 2. A brief concise history of illness and physical findings is required especially the date of onset of illness and the date of specimen collection.	
		Urine	Sterile screw capped container	10 ml of urine (Early morning first void)			
		Nasopharyngeal secretion/ Tracheal aspirate	Sterile screw capped container	1-3 ml			
14.	Malaria PCR	Blood	EDTA	2.5ml	7 days	1.Transport sample at 2-8ºC within 24 Hours to 48 Hours	PER PAT 301 – Borang

All sample for molecular tests (PCR) need to be transported at 2-8°C within 24 hours to 48 hours. If it exceeds 48 hours, the sample should be stored at -70°C.

SENARAI UJIAN DITAWARKAN DI MAKMAL VIROLOGI MKAJB

NO	TESTS	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT	REMARK	FORM
15.	Rotavirus	Fresh Stool	Sterile screw-capped container	1-2ml or 1-2 gm	1 day	1. Sample should be collected within 5 days from onset of illness. 2. A brief concise history of illness and physical findings is required, especially the date of onset of illness and date of sample collection. 3. Maximum sample/outbreak : 10 * Outbreak Investigation	Borang Permohonan Ujian Makmal D-FM-G-003
16.	Measles IgM	Serum	Plain tube with gel separator	1ml / serum	4 days	1. Blood/serum should be taken any time up to 28 days of rash onset.	MEASLES & RUBELLA/ CONGENITAL RUBELLA SYNDROME (CRS) - BORANG PERMOHONAN UJIAN MAKMAL MSLF:02/2024
17.	Rubella IgM	Serum	Plain tube with gel separator	1ml / serum	7 days	1. Blood/serum should be taken any time up to 28 days of rash onset.	

After the sample is collected, immediately send the sample to the laboratory. If there is any delay, keep the sample at 2-8°C up to 48 hours. If exceeding 48 hours, the sample should be stored at -70°C.

SENARAI UJIAN DITAWARKAN DI MAKMAL TIBI/KUSTA MKAJB

NO	TESTS	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT (WORKING DAYS)	METHOD	REMARK	FORM
1	MTB Identification and Drug susceptibility testing (DST)	Sputum	Sterile screw capped	3-5 ml	63	Culture, Smear Microscopy, Immunochromatography, Fluorescence	Store and transport sample in ice 2-8ºC	Borang permohonan ujian TB (TBIS 20C)
		Bronchiole Washing	Sterile screw capped	2-5 ml	63		Store and transport sample in ice 2-8ºC	
		Pus / Pus swab	Sterile screw capped/sterile swab without transport media	3-5 ml	63		Store and transport sample in ice 2-8ºC	
		Other fluid (Pleural and Synovial)	Sterile screw capped	2-5 ml	63		Store and transport sample in ice 2-8ºC	
		Tisu	Sterile screw capped		63		Add 2ml sterile saline/distil water (to prevent dehydration)	
		Gastric lavage	Sterile screw capped	2-5 ml	63		Neutralized the sample with equal volume of 8-10% Sodium bicarbonate. Store and transport sample in 2-8ºC.	
		Urine (MSU)	Sterile screw capped	3-5 ml	63		Store and transport sample in 2-8ºC.	
		CSF	Sterile screw capped	1-3 ml	63		Store and transport sample in 2-8ºC	

SENARAI UJIAN DITAWARKAN DI MAKMAL TIBI/KUSTA MKAJB

NO	TESTS	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT (WORKING DAYS)	METHOD	REMARK	FORM
2	MTB Identification and Drug susceptibility testing (DST)	Positive isolate	LJ / Ogawa	more than 20 colonies/ culture	ID: 7 DST ACM: 30	Culture, Smear Microscopy, Immunochromatography, Fluorescence	Store and transport in ambient temperature. Culture must be sent within 7 days after growth.	Borang permohonan ujian TB (TBIS 20C)
		Positive Liquid media	MGIT Tube	Pure growth in liquid culture	ID: 7 DST MGIT: 21		Store and transport in ambient temperature. Positive liquid tube must be sent within 3 days after positive.	
3	Line Probe Assay (LPA)	Sputum (AFB Smear positive, >1+)	Sterile screw capped	3-5 ml	7	Molecular	Store and transport sample in 2-8ºC. Sample must be sent to MKAJB within 24h after collection.	Borang permohonan ujian TB (TBIS 20C)
		Positive isolate	LJ / Ogawa	more than 20 colonies/culture	7		-	
4	Interferon-gamma release assays (IGRA)	Whole blood	IGRA tube	1.0 ml each tube (4 tubes)	21	ELISA	Non-incubated sample: Store and transport sample in room temperature. Sample must be sent within 16h after collection. Incubated and spin sample: Store and transport sample in 2-8ºC Incubated sample without spin: Store and transport sample in room temperature.	Borang permohonan ujian TB (TBIS 20C)

SENARAI UJIAN DITAWARKAN DI MAKMAL TIBI/KUSTA MKAJB

NO	TESTS	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT (WORKING DAYS)	METHOD	REMARK	FORM
5	GeneXpert	Sputum	Sterile screw capped	1-5 ml	2	Molecular	Store and transport sample in 2-8ºC	Borang permohonan ujian TB (TBIS 20C) Permohonan Ujian Genexpert (Lampiran A)
		Gastric lavage	Sterile screw capped	1-5 ml	2		Store and transport sample in 2-8ºC	
6	PCR TB/NTM	Sputum	Sterile screw capped	3-5 ml	7	Molecular	Store and transport sample in ice 2-8ºC	Borang permohonan ujian TB (TBIS 20C)
		Bronchiole Washing	Sterile screw capped	2-5 ml	7		Store and transport sample in ice 2-8ºC	
		Pus / Pus swab	Sterile screw capped/sterile swab without transport media	3-5 ml	7		Store and transport sample in ice 2-8ºC	
		Other fluid (Pleural and Synovial)	Sterile screw capped	2-5 ml	7		Store and transport sample in ice 2-8ºC	
		Tisu	Sterile screw capped		7		Add 2ml sterile saline/distil water (to prevent dehydration)	
		Gastric lavage	Sterile screw capped	2-5 ml	7		Store and transport sample in ice 2-8ºC	
		Urine (MSU)	Sterile screw capped	3-5 ml	7		Store and transport sample in 2-8ºC.	
		CSF	Sterile screw capped	1-3 ml	7		Store and transport sample in 2-8ºC	

SENARAI UJIAN TIBI/KUSTA YANG DITAWARKAN DI MAKMAL RUJUKAN

NO	TESTS	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT (WORKING DAYS)	METHOD	REMARK	FORM
1	Second-line Drug susceptibility testing for MTBC	Culture isolates - liquid medium	Screw capped container e.g.: MGIT tube	Pure growth in liquid culture	MKAK	31 days form detection of RR-TB and MDR-TB	NA	The liquid medium should be sent within 3 days after positive. Please state the microscopic result on the request form.
2	Second-line Drug susceptibility testing for MTBC	Culture isolates- solid medium	Screw capped container	Pure colonies on solid medium	MKAK	31 days form detection of RR-TB and MDR-TB	NA	1.This test will be done for INH or/and Rif resistance cases 2.For other cases, please consult MKAK's Clinical Microbiologist & Science Officer in charge before request is made
3	Non-tuberculous Mycobacterium (NTM) Culture Identification	Culture isolates - liquid medium	Screw capped container e.g.: MGIT tube	Pure growth in liquid culture	MKAK	35 days (NTM Runyon Group) 10 days (NTM speciation)	NA	The liquid medium should be sent within 3 days after positive. Please state the microscopic result on the request form.
4	Non-tuberculous Mycobacterium (NTM) Culture Identification	Culture isolates- solid medium	Screw capped container	> 20 colonies) Pure colonies on solid medium	MKAK		NA	

SENARAI UJIAN DITAWARKAN DI MAKMAL SITOLOGI MKAJB

NO	TESTS	TYPE OF SPECIMEN	SPECIMEN CONTAINER	VOLUME OF SPECIMEN	LTAT	REMARK	FORM
1	Gynae	Liquid based cytology	Sample collected in vial containing fixative	10 ML	2 weeks	Vial supplied by the cytology laboratory	(PS 1/98 Pindaan 2023)

INFORMATION FOR PRE-COLLECTION ACTIVITIES

The laboratory's instruction for pre-collection activity includes the following:

1. Determination of the identity of the patient from whom a primary specimen is collected;
2. Verification that patients meet pre-examination requirements ((e.g. fasting status, medication status - time of last dose, cessation, specimen collection at predetermined time or time intervals, etc.)
3. Type and amount of specimen to be collected with descriptions of the primary specimen containers and any necessary additives;
4. Clinical information relevant to the affecting specimen collection, examination performance of result interpretation (e.g. history of administration of drugs);
5. Special timing of collection, where needed
6. Instructions for collection of primary blood and non-blood specimens, with descriptions of the primary specimen containers and any necessary additives;
7. In situations where the primary specimen is collected as part of clinical practice, information and instructions regarding primary specimen containers, any necessary additives and any necessary processing and specimen transport conditions shall be determined and communicated to the appropriate clinical personnel;
8. Instructions for labelling of primary specimens in a manner that provides unequivocal link with the patients from whom they are collected; especially involve multiple sites of sample.
9. Recording the identity of requestor/person collecting primary specimens and the collection date, and, when needed, recording of the collection time
10. Completion of request form
11. Instructions for proper storage conditions before collected specimens are delivered to the laboratory
12. Safe disposal of materials used in the collection where applicable.

INSTRUCTIONS FOR COLLECTION ACTIVITIES

Proper collection and transportation of appropriate specimen play an important role in obtaining accurate laboratory diagnosis. The specimens must be collected at the right time using the right procedures and transported to the MKAJB in the right way. The laboratory's instructions for collection activities includes the following:

A. CLINICAL SPECIMEN

1. GENERAL RULES	1.1. Aseptic technique must be practiced throughout the procedure. 1.2. Collect the specimen at the right phase of the disease. For microbiological testing, collect the specimen before antibiotic therapy. 1.3. Collect sufficient specimen volume/quantity. 1.4. Transfer the specimen aseptically in the correct sterile container or transport medium. 1.5. Close the container tightly and seal with parafilm if required to avoid leakage during transportation. 1.6. Each specimen and requisition form must be labeled properly and completely. 1.7. Place the specimen container inside a biohazard bag. Each sample is to be packed in separate biohazard bags. 1.8. Pack the specimen properly and send to laboratory as soon as possible. (Please refer to the A VISUAL GUIDE FOR INFECTIOUS DISEASE SAMPLE COLLECTION). 1.9. Maintain the correct temperature from specimen collection until arrival at NPHL. Refer to The Comprehensive List of Infectious Disease Tests in NPHL for the correct temperature ranges.
2. SERUM/PLASMA	2.1. Draw 3-5ml blood into dedicated tube (eg: a plain tube with/without gel, edta, IGRA tube, etc.), refer to table list of tests 2.3. Centrifuge according to respective tests 2.4. For a tube with gel, please send the original tube. 2.5 Aliquot the serum/plasma into another transfer tube, where applicable. 2.6. Seal the tube with parafilm prior to transportation, if necessary
3. RESPIRATORY SPECIMEN	<u>3.1. Throat Swab</u> 3.1.1. Depress the tongue with a tongue depressor.

	3.1.2. 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. 3.1.3. Place the swab for Bacteriology testing in Amies transport medium (with or without charcoal) or sterile normal saline 3.1.4. Place the swab for Virology testing in Viral Transport Media (VTM).
	3.2. Nasopharyngeal Swab 3.2.1. Use only Dacron or polyester swabs. 3.2.2. Hold back the patient's head slightly and insert the swab straight into the nostril. 3.2.3. Insert the swab to least 5-6cm in length (for adults) to ensure that it reaches the posterior pharynx. 3.2.4. Leave the swab in place for few seconds, rotate and withdraw slowly. 3.2.5. Repeat the same procedure on the other nostril using new swab. 3.2.6. For Bacteriology Culture and Sensitivity testing, place the swab in Amies transport medium with charcoal or without charcoal. The sample shall be transported at ambient temperature. 3.2.7. For Bordetella pertussis PCR testing, place swab in sterile container with sterile saline .The sample shall be transported at 2-8□C. 3.2.8. For Virology testing place swab in Viral Transport Media (VTM). The sample shall be transported at 2-8□C.
	3.3. Nasopharyngeal Aspirates (NPA)/Nasopharyngeal Secretion 3.3.1. Insert a small catheter through the nares to the back of nose. 3.3.2. Gently suction as the catheter is withdrawn slowly. 3.3.3. Collect in sterile screw capped container. 3.3.4. Ensure that the container is sealed securely to prevent leakage. 3.3.5. The sample shall be transported at 2-8□C (for both Bacteriology and Virology testing).
	3.4. Sputum 3.4.1. Use a sterile screw capped container for collection. 3.4.2. 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. 3.4.3. Make sure the sputum sample is of good quality (3-5ml of thick and purulent sputum).
	3.5. Oropharyngeal swab 3.5.1. Depress the tongue. Insert swab into the posterior pharynx and tonsillar areas. 3.5.2. Gently rub swab over posterior oropharynx behind the tonsils and avoid touching the tonsils. 3.5.3. Place swab into the Viral Transport Media (VTM) tube. Notes: for survelen ILI covid sample, combined NPS and OPS in 1 VTM

	3.6. Deep Throat Saliva (DTS) 3.6.1. Do not eat or drink, smoke, chew tobacco/betel leaves, brush teeth or gargle with mouth freshener for at least 1 to 2 hours prior to the sample collection. Collect DTS at well ventilated space 3.6.2. Drain mucus from the back of the nose and throat at least 3 times. 3.6.3. Forcefully breath in 3 times, with head tilt slightly up and cough out the deep throat saliva with mucus. 3.6.4. If find difficulty with earlier method, can collect the saliva in mouth and bring at deep throat then gargle it for >30sec. 3.6.5. Lift specimen collection cup close to the mouth and take a deep breath in and cough out or spit out the DTS into the collection cup. 3.6.6. A minimum of 2 ml of DTS sample is required.
4. BODY FLUIDS	4.1 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.
	4.2 Cerebrospinal Fluid (CSF) 4.2.1 Collect CSF before antimicrobial therapy is started. 4.2.2 Collect 1-3ml in sterile screw capped container (Bijou bottle or Cryo vial).
5. URINE AND STOOL/RECTAL SWAB	5.1. Urine 5.1.1. Adult Male 5.1.1.1. Give the patient a sterile urine container. 5.1.1.2. Instruct the patient to wash hands with soap and water before collection of urine specimen. 5.1.1.3. Cleanse the glands penis with soapy water and rinse with water. 5.1.1.4. Pass the few millimetres of urine to flush out the bacteria from the urethra, and then collect the mid-stream urine (MSU) in sterile urine container. 5.1.2. Adult Female 5.1.2.1. Give the patient a sterile urine container. 5.1.2.2. Instruct the patient to wash hands with soap and water before collection of urine specimen. 5.1.2.3. Cleanse the area around the urethral opening with clean water, dry the area, and collect the urine with the labia held apart. 5.1.2.4. Discard the first portion of the stream and collect MSU in sterile urine container (without preservative). 5.1.3. Infant and young children 5.1.3.1. Instruct the child to drink water.

	5.1.3.2. Clean the external genitalia. 5.1.3.3. 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 NPHL within 2-4 hours, boric acid must be added, except for virology testing.
	<u>5.2. Stool/Rectal Swab</u> 5.2.1. Collect 5g or 5ml stool into stool screw-capped container. 5.2.2. Collect rectal swab if fresh stool collection is not possible. Ensure that the swab shows some faecal staining. 5.2.3. Place the swab for Bacteriology testing in carry blair transport medium. 5.2.4. Place the swab for Virology testing in Viral Transport Media (VTM).
6. EYE/GENITAL/PUS SWAB	<u>6.1. Eye swab</u> 6.1.1. Clean skin around the eye using a sterile moistened swab to remove pus and discharge. 6.1.2. Use a separate swab for each eye for specimen collection. 6.1.3. Place the swab for Bacteriology testing in Amies transport medium (with or without charcoal). 6.1.4. Place the swab for Virology testing in Viral Transport Media (VTM).
	<u>6.2. Urethral Discharge Swab for Sexually Transmitted Infection (Male)</u> 6.2.1. Clean the foreskin of the penis using sterile moistened swab. 6.2.2. Collect the exudates with a sterile swab and inoculate into the Amies transport medium with/without charcoal or Stuart transport medium. 6.2.3. If discharge cannot be obtained, use a sterile swab to collect material from about 2cm inside the urethra.
	<u>6.3 vagina swab for Sexually Transmitted Infection (Female)</u> 6.3.1. Clean the vagina area using sterile moistened swab. 6.3.2 Use cusco speculum to separete the vagina walls 6.3.3 Wipe away any excess cervical mucous with a cotton swab 6.3.4. Collect the sample with a sterile dacron swab and inoculate into the VTM.
	<u>6.4. Pus Swab</u> 6.4.1. Clean the skin around the specimen collection area using a sterile swab. 6.4.2. Collect pus in sterile screw capped container or if minimal pus is available, use a sterile swab. For bacteriology, place the swab in Amies transport media with/without charcoal or Stuart Transport Media.

7. LESIONS/VESICLE SWABS	<u>7.1. Skin lesions/Vesicle swab</u> 7.1.1. Examine the body part and choose the largest vesicle (representative lesion). 7.1.2. Clean the area around the lesion gently with a normal saline-soaked cotton swab. (Do not clean the lesion with ethanol or any other disinfectant prior to swabbing) 7.1.3. Rupture the vesicle carefully with a hypodermic needle. Alternatively hold the swab with a firm grasp and apply firm pressure on the vesicle. 7.1.4. Swipe the swab back and forth on the lesion surface at least 2 to 3 times then rotate and repeat on the other side of the swab at least 2 to 3 times. 7.1.5. Place the dacron swab in VTM. 7.1.6. Send the specimen to laboratory as soon as possible.
	<u>7.2 Scab or crust</u> 7.2.1 Use a forceps or other blunt-tipped sterile instrument to remove all or a piece of the crust at least 4mm x 4mm 7.2.2 Separate each crust into a dry, sterile container or viral transport media. 7.2.3 Send the specimen to laboratory as soon as possible.
8.PAP SMEAR	<u>8.1 Cervical sample</u> 8.1.1 Insert central bristles into the endo-cervical canal 8.1.2 Apply gentle pressure while turning clockwise direction until the bristles are bend against the cervix. 8.1.3 Maintaining the gentle pressure, rotate the broom for 3-5 times in clockwise direction. Please ensure to clean the cervix if blood or mucus are seen before sample collection. DO NOT USE lubricant with oil based, Luke water or water-based lubricant are recommended. 8.1.4 Push and hold the plastic above the broom head to disconnect broom from the stem into the Preserve cell solution vial 8.1.5 Place the cap back on the vial and tighten 8.1.6 Label the vial according to the patient information as required. Sample can be kept in room temperature at 22℃-30℃ for 1 month. If refrigerated in the temperature of 2℃-8℃, it can be keep for 6 months 8.1.7 Place vial into the specimen bag and send to the laboratory

B. ENVIRONMENTAL AND NON-CLINICAL SPECIMEN

1. UNTREATED WATER SAMPLING FOR LEPTOSPIRA	1.1. Select appropriate water sampling areas, such as: 1.1.1. Bodies of water such as lakes/ wells/ rivers/ waterfalls etc. 1.1.2. Water in a shaded area. 1.1.3. Water in an area with the presence of animals (i.e. paw print marks). 1.1.4. Water in between stones or cracks on the stone.1.1.5. Water samples taken one foot below the water surface. 1.2. Record temperature and pH (compulsory) in the test request form. 1.3. Sterilize the collection bucket/pail by pouring 70% alcohol. Let it dry. 1.4. Lower the bucket into the river/ well/ pond/ lake and ensure that the connecting rope/string does not touch inner part of the bucket. 1.5. Draw up bucket with caution when it is full. 1.6. Fill 250ml (minimum) of the collected untreated water into sterile universal samples bag (e.g. Whirl-Pak bags). 1.7. Label accordingly and put it into the cooler box following a vertical arrangement. 1.8. Wash the bucket with clean water after use, sterilize with 70% ethanol and dry it. 1.9. Repeat procedures for sampling in other areas.
2. SOIL SAMPLING FOR LEPTOSPIRA	2.1 Select the land area for sampling with distance of less than 5 meters from a river/pond/ lake. 2.2 The appropriate soil sampling areas are: 2.2.1 Wet land area soil. 2.2.2 Shaded area soil. 2.2.3 Soil in an area with presence of animals (ie: paw print marks). 2.3 Sterilize the respective tools by pouring 70% alcohol. Let it dry. 2.4 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. 15 – 20 cm 4 – 8 cm 2.5 Place 200 g (minimum) of soil into a sterile universal sample bag (e.g. Whirl-Pak). 2.6 Record temperature and pH in the test request form.
3. WATER SAMPLING FOR LEGIONELLA	3.1 Collect water from a central air conditioning cooling tower or other similar types of water sources. 3.1.1 Water samples must be collected before dosing with biocide. 3.1.2 If dosing has been carried out, take water samples at least 3 days after the dosing.

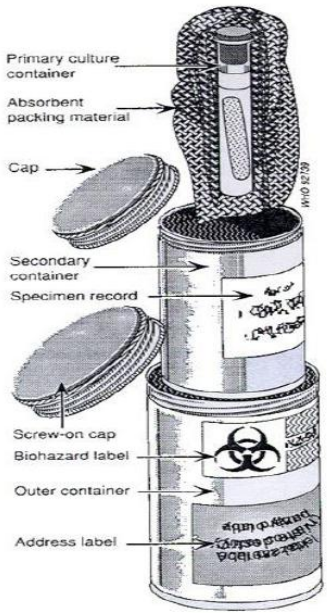
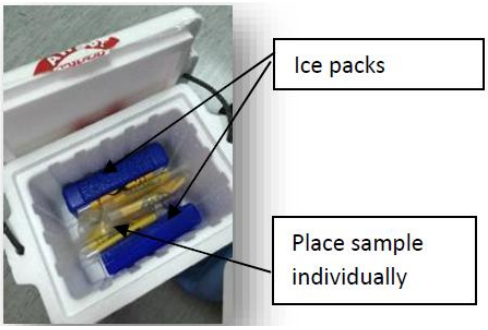
	3.2 Ensure that the central air conditioning system is operating and water from the cooling tower is circulated through the system for at least one hour before collection of samples. 3.3 Do not collect samples near the take-up water inlet. 3.4 Do not stir up sediments in cooling tower. 3.5 Take 1000 ml of water for each sample in sterile containers. *Note: Please notify the laboratory at least 3 days before sending the samples.
4. SOIL SAMPLING FOR BURKHOLDERIA PSEUDOMALLEI	4.1 Use a spade, a small gardening shovel or a scoop. 4.2 Sterilize the tools by pouring 70% alcohol. Let it dry. 4.3 Collect a 100g (minimum) of moist soil samples from a depth of 30cm during the dry season or surface soil during the rainy season. 4.4 Put the soil sample in a sterile universal sample bag (e.g. Whirl-Pak). 4.5 Label the sample accordingly and record the site sampled.
5. WATER SAMPLE FOR BURKHOLDERIA PSEUDOMALLEI	5.1 Sterilize the tools by pouring 70% alcohol. Let it dry. 5.2 Collect 100ml of stagnant water (from a suspected contaminated pool of water) into a sterile universal sample bag. 5.3 Label the sample accordingly and record the site sampled.
6. UNTREATED WATER SAMPLE FOR ENTERIC PATHOGEN	1.1 Identify pool of water suspected to be source of infection 1.2. Record temperature and pH (compulsory) in the test request form. 1.3. Sterilize the collection bucket/pail by pouring 70% alcohol. Let it dry. 1.4. Lower the bucket into the river/ well/ pond/ lake and ensure that the connecting rope/string does not touch inner part of the bucket. 1.5. Draw up bucket with caution when it is full. 1.6. Fill 250ml (minimum) of the collected untreated water into sterile universal samples bag (e.g. Whirl-Pak bags). 1.7. Label accordingly and put it into the cooler box following a vertical arrangement. 1.8. Wash the bucket with clean water after use, sterilize with 70% ethanol and dry it

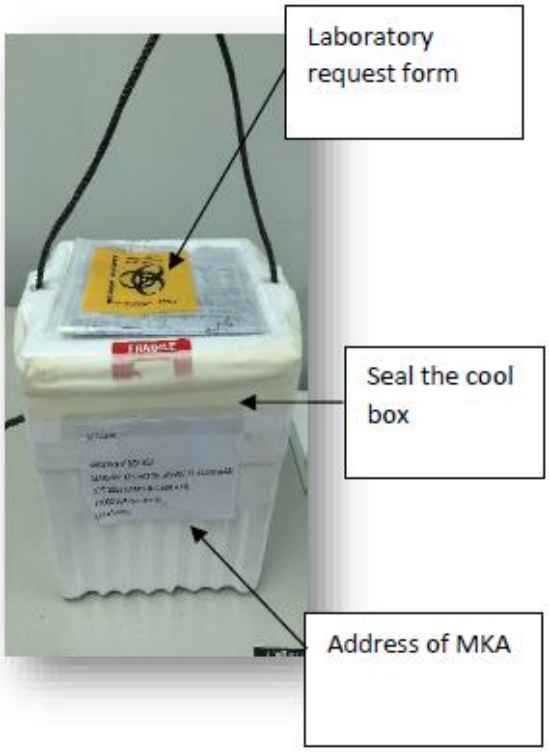
C. SPECIMEN REJECTION CRITERIA

The specimens will be rejected if	<u>1.1 Request Form</u> 1.1.1 Request form without sample 1.1.2 No IC, name or R/N of patient 1.1.3 No address of requestor 1.1.4 No signature of requesting doctors or requestors. 1.1.5 No test indicated 1.1.6 Date of collection is not stated 1.1.7 Incomplete required clinical history <u>1.2 Sample</u> 1.2.1 Sample without request form 1.2.2 No label 1.2.3 Leaking sample 1.2.4 Haemolysed sample 1.2.5 Insufficient sample 1.2.6 The type of specimen sent is not appropriate for the test requested. 1.2.7 Wrong container <u>1.3 Others</u> 1.3.1 Test is not offered 1.3.2 Specimen received is not in suitable condition.

A VISUAL GUIDE FOR INFECTIOUS DISEASE SAMPLE COLLECTION

STEP	VISUAL GUIDE
Select the correct collection transport container and medium by referring to the A. The Comprehensive Directory of Infectious Disease Tests in MKAJB before commencing collection procedure. Ensure that the transport medium used is not expired.	 Flocked swab  Swab with Cary Blair medium  Swab with Amies (without charcoal) medium  Swab with Amies (with charcoal) medium
Place the collected sample in sterile container or VTM [for throat or nasopharyngeal swab (NPS)].	 Sample in sterile Bijoux bottle  Throat / NPS swab in VTM

Label the sample with: 1. Patient's name; 2. Patient's ID number; 3. Sample type; 4. Date of sample collection.	
Fill in the laboratory request form with complete details.	Refer to the Appendix.
Place individual samples in separate biohazard plastic bags.	
Follow the proper triple packing guidelines especially when packing highly infectious substances/samples to ensure safe transportation.	
Put the sample into cooler box with 3 units of ice packs (i.e. 1 unit at the bottom of the cool box and 2 units at both sides of the samples). Place some absorbent material to protect the container from high impact or unforeseen rough handling of the cooler box.	

Seal the cool box. Place the laboratory request form in a plastic bag and paste on top of the cool box. Ensure that the accompanying request form is secured properly to the box to prevent loss or misplacement of request forms. Transport the sample to the respective regional public health laboratories at 2 to 8°C within 48 hours after collection. All samples must be sent to the sample receiving counter of the respective laboratories.	

PACKAGING AND TRANSPORTING SPECIMENS

The guidelines are applicable to the transport of diagnostic specimens. The packaging of infectious materials for transport must therefore address these concerns and be designed to minimize the potential for damage during transport. In addition, the packaging will serve to ensure the integrity of the materials and timely processing of specimens.

1.0 Definitions

Diagnostic specimens collected during an investigation of a serious disease of unknown cause must be handled as infectious substances. A diagnostic specimen is defined as any human or animal material including, but not limited to, excreta, blood and its components, tissue and tissue fluids collected for the purposes of diagnosis.

2.0 Packaging, Labeling and Documentation for Transport

2.1 Triple Packaging System

The system consists of three (3) layers:

a. **Primary receptacle** is the container (e.g. tube, vial, and bottle) that holds the specimen (Figure 1.1), securely sealed and leak proof. The Screw-top of the container must have a piece of waterproof tape around the cap to prevent the leaking in transit. The primary receptacle must be surrounded by absorbent material capable of taking up the entire liquid contents and must be packed in the secondary container/pack. The International Air Transport Association (IATA) regulations allow 1 liter in a primary receptacle for diagnostic specimens. The outer packaging must not contain more than 4 liters.

b. **Secondary packaging** is the receptacle into which a primary receptacle and the absorbent and cushioning material are placed (Figure 1.2). The secondary packaging must be leak proof and securely sealed and be placed in the outer packaging and maintain the position of the primary container. The biohazard marking should be on the secondary receptacle and may be on the primary receptacle.

c. **Tertiary (Outer) packaging** is the receptacle which the secondary packaging with cushioning materials is placed (Figure 1.3). The outer packaging must be rigid (effective 1-1-2005). The outer packaging bears the addressing information along with all required markings and labels such as; the full name and address of the shipper and consignee must be on the outside packaging. The outside packaging must have the name and telephone number of a person who is knowledgeable about the contents of the shipment. This is important emergency information in the event an exposure occurs during shipping.

2.2 Itemized List of Contents

- An itemized list of contents is required. DO NOT place documents inside the secondary container.
- The itemized list is placed OUTSIDE the secondary container.
- The laboratory request form should be placed OUTSIDE the secondary container.

3.0 Requirements for diagnostic specimens

The basic triple packaging system is used with the following specifications and labelling requirements. Primary receptacles may contain up to 500mL each, the total volume in the outer package not to exceed 4L. Labelling of the outer package for the shipment of diagnostic specimens must include the following:

3.1 An address label with the following information:

The receiver's name, address and telephone number.
The sender's name, address and telephone number.

3.2 Refrigerants

Ice or dry ice must be placed outside the secondary receptacle. If wet ice is used it should be in a leak-proof container and the outer package must also be leak-proof.
The secondary receptacle must be secured within the outer package to prevent damage after the refrigerant has melted or dissipated.

3.3 Transport Planning

It is the responsibility of the sender to ensure the correct designation, packaging, labelling and documentation of all infectious substances and diagnostic specimens.
The efficient transport and transfer of infectious materials require good coordination between the sender and the receiver (receiving laboratory), to ensure that the material is transported safely and arrives on time and in good condition. Such coordination depends upon well-established communication and a partner relationship between the two parties. All have specific responsibilities to carry out in the transport effort.

3.4 The sender

Makes advance arrangements with the receiver of the specimens.
Makes advance arrangements with the carrier to ensure the safe shipment.
Prepares necessary documentation.
Notifies the receiver of transportation arrangements in advance of expected arrival time.

4.0 Spill Clean-Up Procedure

In the event of a spill of infectious or potentially infectious material, the following spill clean-up procedure should be used.

Wear gloves and protective clothing, including face and eye protection if indicated.

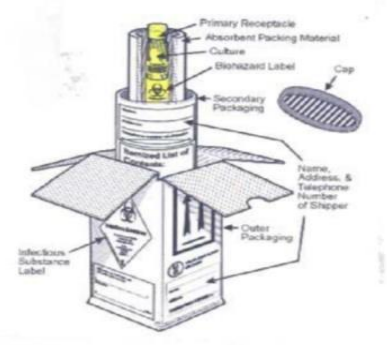
Cover the spill with cloth or paper towels to contain it.

Pour an appropriate disinfectant over the paper towels and the immediately surrounding area (generally, 5% bleach solutions are appropriate)

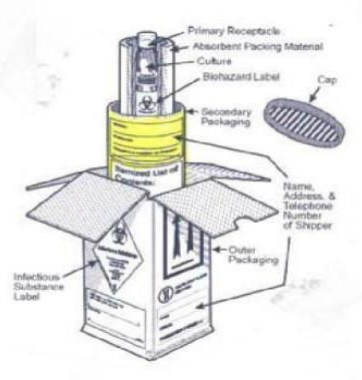
I. Apply disinfectant concentrically beginning at the outer margin of the spill area, working toward the center.
II. After the appropriate amount of time (e.g. 30 min), clear away the materials. If there is broken glass or other sharps involved, use a dustpan or a piece of stiff cardboard to collect the material and deposit it into a puncture-resistant container for disposal.

FIGURE 1: TRIPLE PACKAGING

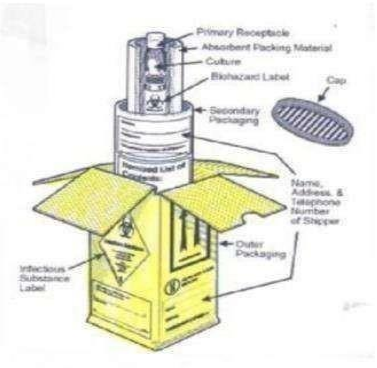
Primary Packaging



Secondary packaging



Tertiary (Outer) packaging



INTEGRITI SAMPEL

Jika sampel yang diterima di MKAJB mengalami sebarang isu yang boleh menjejaskan integrity sampel, MKAJB akan menghubungi/notifikasi pemohon.

ADUAN MAKMAL

Jika terdapat sebarang aduan, sila rujuk Appendix 4: Kaedah Pengurusan Aduan Pelanggan Seksyen Penyakit Makmal Kesihatan Awam Johor Bahru

PENAFIAN

1.Ujian-ujian yang dilaksanakan di MKAJB tidak tertakluk kepada persetujuan pesakit (*patient consent*)

2.Bagi permintaan ujian secara lisan, semua sampel yang dihantar perlu disertakan borang yang lengkap dan mengikut kriteria penerimaan sampel MKAJB

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APPENDIX 1 SENARAI BORANG PERMOHONAN UNTUK UJIAN DI MKAJB:

BIL	BORANG	NOMBOR BORANG
1	Borang (Permohonan Ujian Makmal)	D-FM-G-003
2	Borang Permohonan Ujian Sampel Persekitaran	D-FM-G-053
3	Leptospirosis Request Form	D/WS/01-016
4	Ujian Paras Cholinesterase	D/WS/02-001
5	Laboratory Request Form For Dengue And Flavivirus	MKAK-BPU-D02 (rev_Nov_2015)
6	Borang Permohonan Ujian Makmal Hand Foot And Mouth Disease (HFMD) Makmal Kesihatan Awam	MKA_HFMD_2018
7	MEASLES & RUBELLA/ CONGENITAL RUBELLA SYNDROME (CRS) - BORANG PERMOHONAN UJIAN MAKMAL	MSLF:02/2024
8	Borang Permohonan Ujian Makmal (Spesimen Klinikal)	MKAK-BPU-U01/Rev2018
9	Survelan *Influenza-Like-Illness* (ILI) dan *Severe Acute Respiratory Infection* (sARI) Borang Permohonan Ujian Makmal	Lampiran 4
10	Borang Permohonan Pap Smear	PS 1/98 Pindaan 2023
11	Permohonan Ujian TB	TBIS 20C (Ver.3, September 2025)
12	Borang Tambahan Indikasi Ujian *perlu disertakan untuk permohonan ujian GeneXpert	Lampiran 4

BORANG-BORANG PERMOHONAN UJIAN MKAJB

MAKMAL KESIHATAN AWAM JOHOR BAHRU
KEMENTERIAN KESIHATAN MALAYSIA

BORANG
(PERMOHONAN UJIAN MAKMAL)

No Dok: D/FM/G-003
No Pindaan: 01
Tarikh Kuatkuasa : 1 Ogos 2017
No ms : 1 drpd 1

No Makmal :

A. MAKLUMAT PELANGGAN

Nama :

No IC :

No Rujukan :
Alamat :

Status : ☐ Kontak

Maklumat Kes Indeks
Nama:
No. Kad Pengenalan:
Tarikh/tempat isolasi:

☐ Kes

Tarikh Lahir :
Umur : Tahun Bulan

Jantina : ☐ Lelaki ☐ Perempuan

Bangsa :
☐ Melayu ☐ India ☐ Cina
☐ Lain-lain ☐ Bukan Warganegara : _____

Pekerjaan :

Status Perkahwinan : ☐ Bujang
☐ Berkahwin

B. LAPORAN KLINIKAL

Simptom :

☐ Demam : Suhu °C
☐ Ruam : Jenis Ruam _____
☐ Lain-lain :_____

Tarikh onset : _____
Diagnosis Klinikal:

Status Imunisasi :

☐ Ya Jenis Imunisasi : _____
Bilangan Dos : _____
Tarikh Dos yang Terakhir :_____

☐ Tidak

C.MAKLUMAT SPESIMEN

Jenis Spesimen	Masa/Tarikh Pungutan	Komen

D. KATEGORI SPESIMEN

☐ Wabak ☐ Surveilan ☐ Program/Projek
☐ Lain-lain : _____

E. JENIS UJIAN : (Sila catitkan jenis ujian yang dipohon)

☐ Bakteriologi : _____ ☐ Serologi : _____
☐ Biokimia : _____ ☐ Lain-lain : _____

F. MAKLUMAT PEMOHON

Nama : _____
Jawatan : _____
Tarikh : _____

_____
Cop dan Tandatangan

G. UNTUK KEGUNAAN MAKMAL

Keputusan :
_____

Dilaporkan Oleh :

Disahkan Oleh :

Tarikh Laporan :

	MAKMAL KESIHATAN AWAM JOHOR BAHRU KEMENTERIAN KESIHATAN MALAYSIA	**No Dok: D/FM/G-053** **No Pindaan: 00** **Tarikh Kuatkuasa :** **1 Oktober 2025** **No ms : 1 drpd 2**
	BORANG **(PERMOHONAN UJIAN SAMPEL PERSEKITARAN)**	

MAKLUMAT PEMOHON (cop rasmi)
Nama:
Jawatan:
Daerah:
E-mel (bagi pelaporan keputusan):

A. MAKLUMAT SAMPEL	
Jenis Sampel:	Tujuan persampelan: ☐ Wabak/Kluster ☐ Survelan ☐ Program/Projek ☐ Lain-lain:
Tarikh Persampelan:	
Lokasi Persampelan:	
Nama Pegawai Persampelan:	
No. Kad Kuasa:	
Jenis Ujian:	

Analisa Parameter Fizikal

ID Sampel	Masa persampelan	Suhu(^{o}C)	pH	Clarity	Catatan

B. MAKLUMAT KES (sekiranyan ada):	
Nama kes:	Status kes/kontak: ☐ Hidup ☐ Mati
No. K/P atau ID:	
Pekerjaan / Pendedahan (Exposure):	

D. 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 :

E. LAKARAN LOKASI PERSAMPELAN

Petunjuk :

MAKMAL KESIHATAN AWAM JOHOR BAHRU KEMENTERIAN KESIHATAN MALAYSIA	Doc No : D/WS/01-016
	Rev. No : 00
	Effective Date : 14.02.2024
LEPTOSPIROSIS REQUEST FORM	Page No : 1 of 1

PATIENT DEMOGRAPHY

Name:			RN:		
IC/ID Number:			Ward clinic:	Admission date:	
Age:	Date of birth:		Hospital:		
Gender ☐ M ☐ F	Race :		Type of specimen: Date of collection:		
Address :			Outcome (please circle any that applicable): Alive/ Death/Discharge/AOR		
Underlying illness:					

Symptoms and signs	☐ Fever, day of illness	☐ Abdominal Pain	☐ Hepatomegaly
	☐ Chills and rigors	☐ Convulsion	☐ Lymphadenopathy
	☐ Headache	☐ Hemoptysis	☐ Sepsis (FBC : .....)
	☐ Conjunctival redness	☐ Nausea / Vomitting	☐ Intubated
	☐ Retro-orbital Pain	☐ Diarrhoea	☐ AKI
	☐ Arthralgia/myalgia	☐ Jaundice	☐ Liver failure

HIGH RISK SOCIAL HISTORY

Occupation :	☐ Veterinarian	☐ Gardener	☐ Forestry worker
	☐ Pet shop owner	☐ Farmer	☐ Abbatoir worker
	☐ Lab worker	☐ Carpenter	☐ Military personnel
	☐ Others:		

Contact with animal	☐ Cat	☐ Cow	☐ Bird
	☐ Dog	☐ Goat	☐ Pig
	☐ Horse	☐ Mule	☐ Rat
	☐ Others:		
Exposure:	☐ Bathing / swimming (location/date)		☐ Fishing (location/date)
	☐ Hunting (location/date)		☐ Camping/picnic (location/date)

LABORATORY TESTS

Date	Leptospira Test	Result
	Leptospira IgM Rapid Test	Equivocal/Positive
	Leptospira MAT (state all recent results)	Positive/Negative/Equivocal (if positive or equivocal, titre :.....)
	Leptospira DNA PCR	Detected/Not detected

ANTIBIOTIC TREATMENT (IF ANY)

Antimicrobial therapy (√ tick all that was initiated for the treatment) :

☐ Penicillin G ☐ Ampicillin ☐ Cefotaxime ☐ Ceftriaxone
☐ Azithromycin ☐ Doxycycline ☐ Tetracycline

Steroid therapy:

☐ .....
☐ .....

TEST REQUEST (please tick one)

☐ **Leptospira microagglutination test (MAT)**
(Please circle one: first sample/second sample)
Serum need to be separated & send in ice

☐ **Leptospira PCR**
(blood in EDTA with fever lesser than 10 days)
Note: urine is only accepted by consultation
Sample must be sent in ice

REQUESTER DETAILS

.....

Date: Signature and stamp

RESULTS (FOR MKAJB USE ONLY)

Done by: Verified by:

MAKMAL KESIHATAN AWAM JOHOR BAHRU KEMENTERIAN KESIHATAN MALAYSIA	Doc. No. : D/WS/02-001 Revision No. : 03 Effective Date : 20th Sept 2024 Page No. : 1 of 1
UJIAN PARAS CHOLINESTERASE	

(A) BUTIR PERIBADI			
Nama :		Umur :	
No Kad Pengenalan :		Pekerjaan :	
Jantina : L /P	Bangsa : M/C/I/L	Taraf Perkahwinan: Bujang/Berkahwin	
Alamat Majikan :			

(B) BUTIR KLINIKAL					
Berat badan : kg		Tinggi : m		Tekanan darah : /mmHg	
Ada menggunakan racun perosak selain daripada semasa bekerja? (contoh berkebun atau ladang) Sila tandakan (/) pada kotak.				Ya	
				Tidak	
Ada mengambil ubat? (Jika ada sila nyatakan nama ubat-ubat tersebut)					

Ada tanda-tanda klinikal berikut (Sila tanda [/] pada kotak)

Jaundice		*Anxiety*		*Staggering gait*	
Lymphadenopathy		*Tremors*		*Mental confusion*	
Hepatomegaly		*Salivation*		*Miosis*	
Splenomegaly		*Lacrimation*		*Hypotension*	
Lain-lain: Sila nyatakan					

Sejarah klinikal (termasuk pengambilan alkohol, merokok)

(C) BUTIR PENYEMBURAN RACUN PEROSAK				
Jenis racun perosak. (Sila tandakan [/] pada kotak)		*Organophosphate*		*Carbamate*
Ada memakai perlindungan diri seperti berikut semasa mengendalikan racun perosak? [Sila tandakan [/] pada kotak.]		Topeng muka (*mask*)		
		Sarung tangan		
		Apron/kot/Baju khas		
		Kasut but getah		
		Earplug/earmuff		
		Goggles		
		Lain-lain. Sila nyatakan.....		
Tarikh akhir penyemburan/pendedahan pada racun perosak (Diisi untuk permohonan *baseline* sahaja)				
Tempoh masa anggota direhatkan (Diisi untuk permohonan *baseline* sahaja)		> 30 hari (pre-baseline)		
		> 14 hari (working baseline)		

(D) UJIAN *CHOLINESTERASE* (Sila tandakan [/] pada yang berkaitan)

a) Serum *BASELINE* (Sebelum Penyemburan)

1st Baseline		Tarikh Pengambilan		Masa Pengambilan	
2nd Baseline					
3rd Baseline (Jika perlu)					

b) Serum *POST EXPOSURE* (Selepas Penyemburan)

Tarikh Penyemburan			
Tarikh Pengambilan darah		Masa Pengambilan	

Nama Pegawai Perubatan :
Cop dan Pengesahan : Tarikh penghantaran :

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:

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*

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: Nama dan Cop Pegawai:	No telefon:

G. KAUNTER PENERIMAAN SPESIMEN

Cop Makmal:	Suhu Penerimaan:	Tarikh:

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 ≥ 38ºC / 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 2º-8ºC 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: ºC	Suhu: ºC
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*

PS 1/98 (PINDAAN 2023)

KEMENTERIAN KESIHATAN MALAYSIA
PERKHIDMATAN PATOLOGI

No. Makmal:

BORANG PERMOHONAN UJIAN HPV/ SITOLOGI (PAP SMEAR /LBC)
HPV TEST /CYTOLOGY (PAP SMEAR/LBC) REQUEST FORM

Hospital / Klinik / *Hospital / Clinic* :

BUTIRAN KLIEN / *CLIENT'S DETAILS*

i. Nama / *Name* :

ii. Nombor Kad Pengenalan / *IC. No* :

iii. Etnik / *Ethnicity* :

iv. Tarikh Lahir / *Date of Birth* : (dd) (mm) (yyyy)

vii. Umur / *Age* :

viii. Alamat / *Address* :

ix. No. Telefon / *Phone No* : (Tel. Bimbit/ Rumah/ *Mobile No./ Home No.*) (No. Tel. Waris/ Pejabat/ *Next of Kin/ Office*)

v. Tahap Pendidikan Tertinggi: / *Highest Education:*
- ☐ Tidak Bersekolah / *No formal education*
- ☐ Sekolah Rendah / *Primary School*
- ☐ Sekolah Menengah / *Secondary School*
- ☐ Sijil / *Certificate*
- ☐ Diploma / *Diploma*
- ☐ Ijazah dan ke atas / *Degree and above*

x. Pekerjaan: / *Occupation:*
- ☐ Kitangan Kerajaan / *Government Servant*
- ☐ Kitangan Swasta / *Private sector*
- ☐ Bekerja Sendiri / *Self-employed*
- ☐ Suri Rumahtangga / *Housewife*
- ☐ Pesara / *Pensioner*

vi. Pendapatan isi rumah bulanan: / *Monthly household income:*
- ☐ ≤ RM 3,999
- ☐ RM 4,000 - RM 7,999
- ☐ ≥ RM 8,000

xi. Status Perkahwinan : / *Marital Status*
- ☐ Bujang / *Single*
- ☐ Berkahwin / *Married*
- ☐ Pernah Berkahwin / *Ever Married*

BUTIRAN SARINGAN / *SCREENING INFORMATION (Tandakan X pada kotak berkenaan)*

i. Tarikh sampel diambil: / *Date sample taken:* (dd) (mm) (yyyy)

ii. Jenis sampel: / *Type of sample:*
- ☐ Conventional Pap Smear
- ☐ Liquid-based preparation
- ☐ Vaginal swab for HPV

iii. Bahagian sampel diambil: / *Sampling site:*
- ☐ Serviks / *Cervix*
- ☐ Vagina / *Vagina*

iv. Pengambilan sampel oleh: / *Sampling by:*
- ☐ Sendiri / *Self* (Self-sampling)
- ☐ Anggota Kesihatan / *Healthcare Provider* (Assisted)

v. Nombor makmal terdahulu: / *Previous laboratory No.*
- *HPV*
- *Pap Smear*
- *Histopathology*

vi. Keputusan terdahulu: / *Previous diagnosis:*

vii. Jenis saringan: / *Type of screening:*
- ☐ Baru / *New*
- ☐ Ulangan / *Repeat*

viii. Ujian HPV untuk keputusan ujian tidak memuaskan ☐
HPV test for unsatisfactory test

RINGKASAN KLINIKAL / *CLINICAL SUMMARY (Tandakan X pada kotak berkenaan)*

i. Body Mass Index (BMI): ..... kg/m² (Berat: ..... kg; Tinggi: ..... m)

ii. Status Hormon: / *Hormonal status:*
- ☐ Hamil / *Pregnant*
- ☐ Postpartum / *Postpartum*
- ☐ Pra-menopos / *Pre-menopausal*
- ☐ Menopos / *Menopausal*

iii. Tarikh Haid terakhir: / *Last menstrual period:* (dd) (mm) (yyyy)

iv. Bilangan Anak Semasa / *Current Parity:*

v. Tarikh Kelahiran terakhir: / *Last childbirth:* (dd) (mm) (yyyy)

vi. Tarikh Saringan Pap smear / Ujian HPV Terakhir / *Date of Latest Pap smear screening / Latest HPV test:* (dd) (mm) (yyyy)

vii. Sejarah Rawatan : / *Treatment history*
- ☐ Kemoterapi / *Chemotherapy*
- ☐ Radiasi di bahagian pelvik / *Pelvic radiation*
  Nyatakan tarikh akhir rawatan:..... *Specify completion date*
- ☐ Pembedahan ginekologi / *Gynaecology surgery*
  Nyatakan / *specify*:.....
- ☐ Tiada / *none*

viii. Kontraseptif /Terapi hormon: / *Contraceptive/ hormonal therapy*
- ☐ ADR / *IUCD*
- ☐ Hormon / *Hormone*
- ☐ Nyatakan / *Specify*: .....
- ☐ Tiada / *None*

ix. Gejala / Tanda: / *Symptom / Sign*
- ☐ Tiada / *Nil*
- ☐ Lelehan dari faraj / *Vaginal discharge*
- ☐ Pendarahan luar biasa / *Abnormal bleeding*
- ☐ Nyatakan / *specify* :.....

x. Serviks : / *Cervix*
- ☐ Biasa / *Normal*
- ☐ Luar Biasa / *Abnormal*
- ☐ Tiada serviks / *No cervix*

xi. Maklumat tambahan: / *Additional information* .....

MAKLUMAT PEMOHON / REQUESTING PRACTITIONER

Nama: / *Name*

Jawatan / Cop / *Designation / Stamp*

Tandatangan / *Signature*

Sila imbas QR bagi panduan mengisi borang

Kementerian Kesihatan Malaysia
Program Kawalan Tibi Kebangsaan
TBIS20C Borang Permohonan Ujian Pengesanan TB

A.Wad / Klinik / Hospital : **Tarikh Permohonan:**

B. Maklumat Pesakit

Nama :	No. Pengenalan Diri (IC/Pasport) :
Umur : No.Telefon :	No. MRN :
Alamat :	Jantina : ☐ Lelaki ☐ Perempuan
	Warganegara: ☐ Malaysia ☐ Bukan Malaysia, Nyatakan:

C.i. Indikasi Permohonan Kes *(Tandakan **satu** sahaja)*

☐Simptomatik
☐Pesakit Dalam Rawatan

C.ii. Kategori Permohonan *(Tandakan **satu** sahaja jika pilihan C.I diatas adalah Simptomatik atau Pesakit Dalam Rawatan)*

☐*Presumptive TB / New episode of TB*
(Merujuk kepada individu yang disyaki tibi)

☐*Recurrent case*
(Merujuk kepada individu yang pernah dijangkiti tibi dan telah sempurna rawatan, namun dijangkiti tibi semula)

☐*Re-registered for treatment*
(Merujuk kepada individu positif tibi yang telah menerima rawatan namun tidak disahkan sempurna rawatan dan ingin menerima rawatan semula)

☐*Follow-up TB case*
(Merujuk kepada individu yang sedang dalam rawatan tibi untuk tujuan ulangan ujian sputum AFB Direct Smear / monitoring)

C.iii. Indikasi Kumpulan Berisiko Tinggi
*(Tandakan **satu** sahaja)*

☐Kontak ☐PLHIV
☐Anggota Kesihatan ☐Penghuni Institusi Tahanan
☐Penghuni Pusat Jagaan
☐Diabetes Mellitus
☐Respiratori Kronik
☐Pesakit Imunosupres
☐Pesakit Transplan
☐Kumpulan Rentan
☐Klien Klinik Berhenti Merokok
☐Penyalahgunaan Substan
☐ESRD yang sedang dalam rawatan dialisis
☐Lain-lain indikasi, nyatakan:_____

D. Jenis spesimen

Kahak(☐X1 / ☐X2 / ☐Sampel ulangan(pagi)) ☐Kahak spot ☐Kahak pagi ☐Lain-lain spesimen (nyatakan):_____

Tarikh pengambilan spesimen: __/__/____ (dd/mm/yy) Masa diambil: __:__ (am / pm)

E. Ujian dipohon

☐Mikroskopi ☐Kultur MGIT ☐Kultur Konvensional ☐*Interferon Gamma Release Assay* (IGRA)
Rapid molecular (☐XPERT MTBRIF / ☐XPERT XDR / ☐M10) *Molecular* (☐MDR / ☐MTB PCR / ☐ LAMP)
Lain-lain *Rapid molecular* nyatakan:_____ Lain-lain *Molecular* nyatakan:_____
☐*Adenosine Deaminase* (ADA) ☐Identifikasi & Kerintangan Ubat (Drug Susceptibility Test)
☐Lain-lain ujian, nyatakan:_____

F. Maklumat Klinikal

G. Maklumat Pemohon

Tandatangan: Jawatan & Cop Rasmi:
Nama: No. Telefon:

H. KEPUTUSAN UJIAN MAKMAL *(Diisi oleh pihak makmal yang menjalankan ujian)*

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

BORANG TAMBAHAN INDIKASI UJIAN LAMPIRAN 4

JABATAN KESIHATAN NEGERI JOHOR

PERMOHONAN UJIAN *RAPID MOLECULAR TB*

Maklumat berikut perlu diisi setiap kali permohonan ujian dilakukan.

Lampiran ini hendaklah di kepilkan bersama-sama borang permohonan TBIS 20C

KLINIK KESIHATAN _____ TARIKH _____

DAERAH _____

DIHANTAR KE _____

NAMA PESAKIT _____

NO KAD PENGENALAN _____

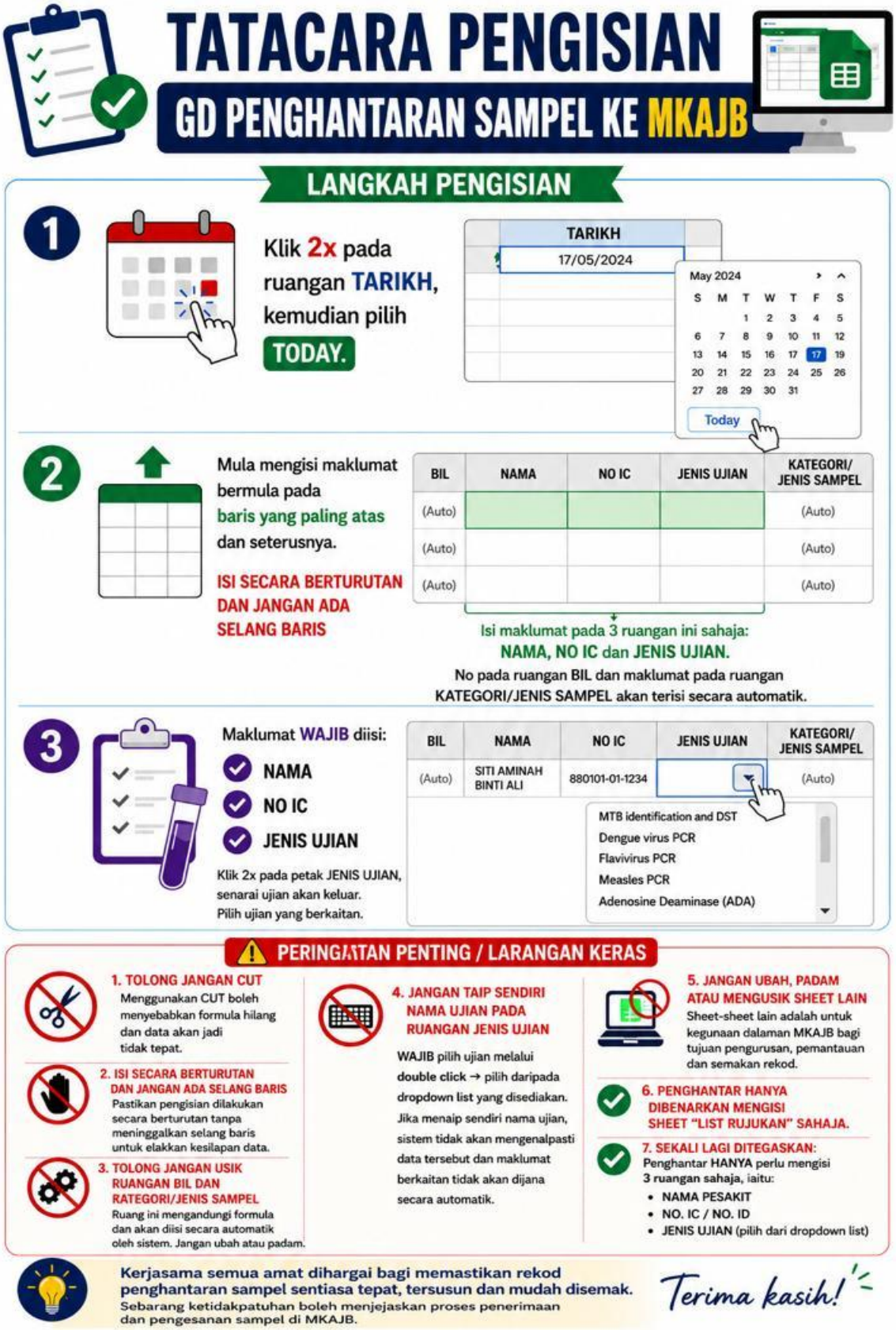
SILA TANDAKAN √ DALAM PETAK YANG DISEDIAKAN
WAJIB DI ISI

SEBAB UJIAN DIJALANKAN

	KANAK-KANAK		SAPUAN AFB TIDAK *SEROCONVERT* SELEPAS 2 BULAN
	PL HIV		TIADA PERUBAHAN GEJALA SELEPAS 2 BULAN
	INDIVIDU DENGAN KOMORBID DAN BERGEJALA TB (DM/ESRF/RA/CANCER/TRANSPLANT/IMMUNOSUPPRESSED)		KES DR-TB SUSULAN (SELAIN RR-TB & MDRTB)
	PETUGAS KESIHATAN		KONTAK DR-TB
	PENGHUNI PUSAT JAGAAN (WARGA EMAS/ INST KESIHATAN MENTAL)		INDIVIDU DISYAKI EXTRAPULMONARI TB
	IBU MENGANDUNG		ORANG ASLI
	KES BERULANG		PESAKIT DENGAN MASALAH LOGISTIK
	KES SETELAH GAGAL RAWATAN		PENGHUNI INST TAHANAN(PENJARA/CCRC/IMIGRESEN)
	KES SETELAH TERHENTI RAWATAN		

UJIAN KULTUR		DST (RIFAMPICIN)		DST (ISONIAZIDE)		UJIAN AFB	
	MTB COMPLEX		RESISTANT		RESISTANT		SCANTY
	NTM		SENSITIVE		SENSITIVE		1+
	PENDING		PENDING		PENDING		2+
	NOT DONE		NOT DONE		NOT DONE		3+
	NO GROWTH						
	CONTAMINATED						

APPENDIX 2: TATACARA PENGISIAN GOOGLE DRIVE (GD) PENGHANTARAN SAMPEL KE MKAJB



APPENDIX 3: *LIST OF COMMON FACTORS FOR THE SAMPLE THAT AFFECTS THE EXAMINATION'S PERFORMANCE IN DISEASE SECTION*

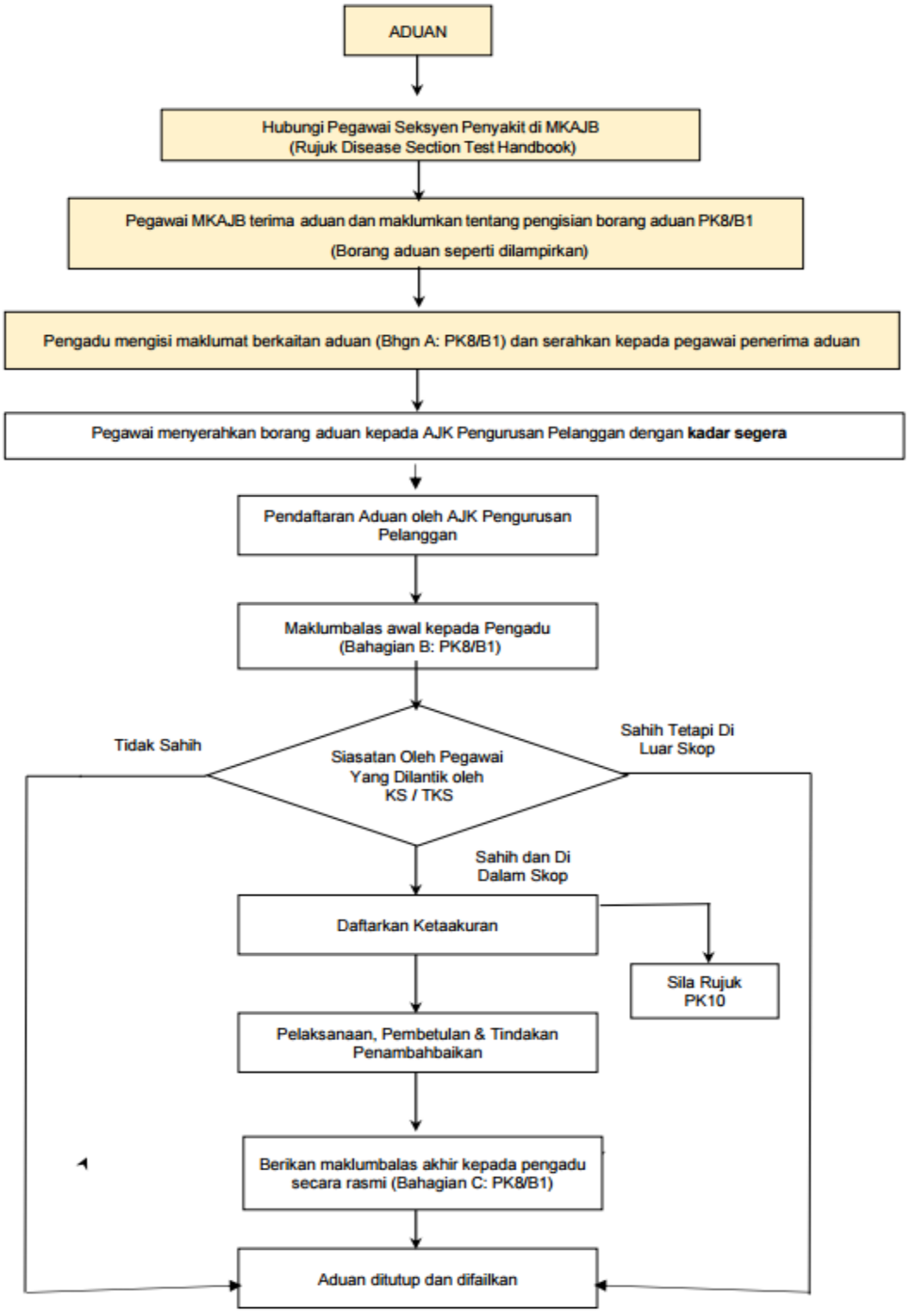
UNIT	TEST	SAMPLE	FACTOR	CONSEQUENCES
Tibi/Kusta	MTB Identification and Drug susceptibility testing (DST)	Sputum	● Unsatisfactory sample (saliva) ● Sample delivery - ≥ 48 hours after sample collection ● Storage temperature - ≥ 2-8^{o}C	● Low bacterial Load ● normal flora overgrowth ● normal flora overgrowth
		Gastric lavage	● No sodium bicarbonate added ● Storage temperature - ≥ 2-8^{o}C ● Sample delivery - ≥ 4 hours after sample collection	● acidic sample can inhibit bacterial growth ● acidic sample can inhibit bacterial growth ● acidic sample can inhibit bacterial growth
	Line Probe Assay (LPA)	Sputum	● AFB direct smear <1+ ● Sample delivery - ≥ 48 hours after sample collection ● Storage temperature - ≥ 2-8^{o}C	● Low bacterial Load ● normal flora overgrowth ● normal flora overgrowth
	PCR TB/NTM	Sputum	● Sample delivery - ≥ 48 hours after sample collection ● Storage temperature - ≥ 2-8^{o}C ● Bloody sample	● normal flora overgrowth ● normal flora overgrowth ● Result invalid -RBC as an inhibitor
	Interferon-gamma release assays (IGRA)	Whole blood	● Insufficient sample – volume <0.8 ml or >1.2 ml ● Sample hemolyzed ● Sample lipemic ● Improper sample shaking ● Improper sample incubation ● Improper sample centrifugation	● Result invalid
	GeneXpert	Sputum	● Unsatisfactory sample (saliva) ● Sample delivery - ≥ 48 hours after sample collection ● Storage temperature - ≥ 2-8^{o}C ● Sample from patients who have received no antituberculosis therapy, or less than 3 days of therapy in the last 6 months. ● Bloody sample – RBC as an inhibitor	● Low bacterial Load ● normal flora overgrowth ● normal flora overgrowth ● Result interference (false result) ● Result invalid -RBC as an inhibitor
		Gastric lavage	● Storage temperature - ≥ 2-8^{o}C ● Sample delivery - ≥ 4 hours after sample collection ● Sample from patients who have received no antituberculosis therapy, or less than 3 days of therapy in the last 6 months.	● acidic sample can inhibit bacterial grow ● acidic sample can inhibit bacterial grow ● Result interference (false result)

UNIT	TEST	SAMPLE	FACTOR	CONSEQUENCES
Biokimia	Cholinesterase Test Liver Function Test Renal Profile Lipid Profile Miscellaneous Tests: -Calcium -Phosphorus -Fasting Blood Glucose -Random Blood Glucose	Serum /Plasma	• Inappropriate sample collection techniques for example drawing blood too quickly or leaving the tourniquet on for too long • Improper order of draw • Use of incorrect collection tubes • Insufficient sample volume • The collection site is not properly disinfected or if the collection tubes are contaminated. • Inappropriate use of anticoagulants/ Improper mix of anticoagulant with sample or improper handling of blood • Delay in transportation of samples • Improper storage temperature of samples • Improper & delay of sample centrifugation/ separation • Not fasting prior to sample collection of Fasting Blood Glucose Test & Lipid Profile	• Hemolysis (breakdown of red blood cells) • Increase possibility of the carryover of additive contamination • Inaccurate result/Hemolysis • Inaccurate result • Contamination of the sample • Clotting • Degradation of sample /Inaccurate result • Degradation of sample /Inaccurate result • Degradation of sample /Inaccurate result • Inaccurate result
	Adenosine Deaminase Test	Pleural fluid	• Incorrect sample collection technique (Aseptic technique during thoracentesis is required). • Puncture Accidents- Accidental punctures during thoracentesis • Insufficient sample volume • Improper use of collection tube • Delay in transportation of samples • Improper storage temperature of samples • Improper & delay of sample centrifugation/ separation	• Contamination of sample • Can introduce blood into the sample • Inaccurate result • Inaccurate result • Degradation of sample /Inaccurate result • Degradation of sample /Inaccurate result • Degradation of sample /Inaccurate result

UNIT	TEST	SAMPLE	FACTOR	CONSEQUENCES
Bakteriologi	Culture test	Rectal swab/ Stool swab/ Throat swab/ Nasal swab/ Nasopharyngeal swab/ Pernasal swab	• Improper storage temperature of samples (no ice) • Delay in shipment (Sample delivery ≥ 6 hours after sample collection • Wrong transport media • Wrong swab	• Overgrowth of Normal flora • Low yield of pathogen & Overgrowth of Normal flora • No yield of pathogen • No yield of pathogen
	Leptospira MAT	Serum	• Improper & delay of sample centrifugation/ separation • Insufficient sample volume	• Inaccurate result/ unable to see reaction with Leptospira serovar • Unable to process sample
	Leptospira PCR	Blood in EDTA	• Sent serum sample • Insufficient sample volume	• Leptospira DNA Not Detected
	Syphilis Rechecking	Serum	• Improper & delay of sample centrifugation/ separation • Lysed serum • Insufficient sample volume	• Inaccurate result / unable to see agglutination

UNIT	TEST	SAMPLE	FACTOR	CONSEQUENCES
Virology	Chikungunya/ Dengue/ Flavivirus/Zika Virus PCR	Serum /Blood	● Inadequate Sample volume ● Sample not collected within specific days from onset of illness ● Storage temperature:> 8°C	● **Inadequate sample size will result in template DNA** present in the reaction leading to l**ow yield of PCR product** ● Decline in viral load ● Nucleic acids degradation
	Enterovirus PCR –HFMD/ Conjunctivitis Respiratory Virus PCR (Influenza A H1N1, H3N2, Influenza B, Adenovirus, RSV, SARS-CoV-2, MERS-CoV) Monkeypox Virus PCR	Mouth Ulcer Swab/ Vesicle Swab/ Rectal Swab/ Throat Swab/ Stool/ Pleural fluid / Eye swab (for Conjunctivitis) Nasopharyngeal Swab/ Nasal swab/ Throat Swab/ combined OPS/NPS Lesion fluid swab /Scab or crust Tonsillar swab/ Nasopharyngeal swab	● Sample taken using other than flocked or dacron swab in VTM (volume 2-2.5ml) or sterile container. ● Sample not collected within specific days from onset of illness ● Storage temperature:> 8°C	● Flocked and Dacron swabs are non-inhibitory to PCR ● Decline in viral load ● Nucleic acids degradation
	Rotavirus	Fresh stool	● Sample not collected within specific days from onset of illness ● Sent in unsuitable storage temperature	● Decline in viral load
	Rubella /Measles IgM	Serum/Blood	● Sample volume: <1ml ● Lysed serum/Plasma ● Unsuitable storage temperature:8°C (<24hours) OR >-70°C (>48 hours)	● Inadequate sample for testing ● False positive results ● Degradation of sample ● Inaccurate result
	PCR Malaria	Blood in EDTA	● Sample insufficient ● Send plasma or serum instead of EDTA	● Inadequate sample for testing ● Inappropriate sample will lead to poor yield of DNA and lead to false negative result.
	Sitologi pap smear	Cervical sampling	● Absent of broom	● No cells seen (unsatisfactory)

APPENDIX 4: KAEDAH PENGURUSAN ADUAN PELANGGAN SEKSYEN PENYAKIT MAKMAL KESIHATAN AWAM JOHOR BAHRU



	MAKMAL KESIHATAN AWAM JOHOR BAHRU **KEMENTERIAN KESIHATAN MALAYSIA**	**No. Dokumen: PK8/B1** **No. Pindaan: 0**
	SPK MS ISO 9001:2015 **BORANG PENGURUSAN ADUAN PELANGGAN**	**Tarikh Kuat Kuasa: 2nb Mac 2026** **Muka Surat: 1 daripada 2**

PENDAFTARAN ADUAN
NO ADUAN : ..... (diisi oleh AJK Pengurusan Pelanggan)

BAHAGIAN A : MAKLUMAT ADUAN	
Kategori Aduan :	☐ Aduan Pelanggan Dalaman ☐ Aduan Pelanggan Luaran
Kenyataan Aduan :	.....
Sumber Aduan :	☐ Lisan : ..... ☐ Bertulis : ..... ☐ Lain-lain : .....
Penerima Aduan (jika berkaitan) :	.....
Nama Pengadu :	.....
Jawatan Pengadu :	..... Organisasi : .....
Maklumat Pengadu Untuk : Dihubungi (Isi sekurang-kurangnya satu maklumat)	☐ Telefon : ..... ☐ E-mel : ..... ☐ Lain-lain : .....
Tandatangan Pengadu/Penerima Aduan :	Tarikh :

BAHAGIAN B : MAKLUMBALAS KEPADA PENGADU

1) MAKLUMBALAS AWAL Tarikh Maklumbalas : .....

Pemakluman pengesahan penerimaan aduan pelanggan kepada pengadu. Perihal maklumbalas yang diberi :

.....

Saluran Maklumbalas :

☐ Telefon ☐ Surat/MemoNoRujukan :.....

☐ Lisan ☐ Lain-lain.Nyatakan :.....

Penyedia Maklumbalas

Tandatangan :..... Cop Jawatan : .....

BAHAGIAN C : SIASATAN ADUAN

	MAKMAL KESIHATAN AWAM JOHOR BAHRU **KEMENTERIAN KESIHATAN MALAYSIA**	**No. Dokumen: PK8/B1** **No. Pindaan: 0** **Tarikh Kuat Kuasa: 2nb Mac 2026** **Muka Surat: 2 daripada 2**
	SPK MS ISO 9001:2015 **BORANG PENGURUSAN ADUAN PELANGGAN**	

Hasil Penyemakan:

.....

.....

.....

.....

.....

Tandatangan & Cop : Tarikh :

RUMUSAN KESAHIHAN ADUAN OLEH KETUA SEKSYEN & PERAKUAN KETUA JABATAN:

☐ Sahih dan di dalam skop, ketidakpatuhan didaftarkan

(No. ketidakpatuhan didaftarkan : .....)
Sila beri maklumbalas awal kepada pengadu (Bahagian C : PK8/B1)

☐ Sahih tetapi di luar skop, ketidakpatuhan tidak didaftarkan.

(Nyatakan tindakan yang diambil: .....)

Sila beri maklumbalas akhir kepada pengadu (Bahagian C : PK8/B1)

☐ Tidak sahih kerana .....
Sila beri maklumbalas akhir kepada pengadu (Bahagian C : PK8/B1)

Pengesahan Ketua Seksyen Tandatangan & Cop : ..... Tarikh :	Perakuan Ketua Jabatan Tandatangan & Cop : ..... Tarikh : .....

2) MAKLUMBALAS AKHIR Tarikh Maklumbalas : .....

Maklumbalas secara rasmi melalui :

☐ Surat / Memo. No ruj. :..... ☐ Lain-lain. Nyatakan :.....

Penyedia Maklumbalas

Tandatangan :..... Cop Jawatan : .....

BAHAGIAN D : PENUTUPAN ADUAN

STATUS ADUAN OLEH AJK PENGURUSAN PELANGGAN ☐ Aduan selesai dan boleh ditutup ☐ Lain-lain. Nyatakan : ..... Tandatangan : Cop Jawatan :	PENGESAHAN KETUA SEKSYEN ☐ Disahkan aduan telah selesai dan boleh ditutup Tandatangan : Cop Jawatan :