

## Specimen Collection, Handling and Transportation

### 1.1 Collection of Specimen

- i. The type of specimen to be collected depends on the disease phase and clinical signs.
- ii. Health care personnel involved in specimen collection for mpox virus (**MPXV**) must wear recommended personal protective equipment (PPE) as per infection control guidelines (*please refer to Chapter—3: Policies and Procedures on Infection Prevention and Control, 2019 KKM*). (Available at [https://www.moh.gov.my/moh/resources/Polisi/infection\\_control.pdf](https://www.moh.gov.my/moh/resources/Polisi/infection_control.pdf))
- iii. Recommended specimens' type is from skin lesions:
  - a) lesion fluid swab with viral transport media (VTM) (preferred) or without VTM in sterile container.
  - b) lesion scab, or crusts in sterile container.
- iv. In the absence of skin lesions, tonsillar and nasopharyngeal swab can be collected however these specimens provide less sensitive results. A negative result should be interpreted with caution.
- v. Blood specimen are generally not recommended for diagnosis of acute illness.
- vi. Please refer Table 1: Guidance on types of specimens to be collected for MPXV and Table 2: Types of specimens and collection methods.
- vii. All specimens must be kept at 2<sup>0</sup>C to 8<sup>0</sup>C after collection.

**Table 1: Guidance on types of specimens to be collected for MPXV**

<b>Case Category</b>	<b>Disease Phase</b>	<b>Signs / Symptoms</b>	<b>Specimens to Collect</b>	<b>Remark</b>
Suspected or probable case	Rash	Vesicles or Pustules	Lesion fluid	Swab two separate lesions using different swabs and place both swabs into the same vial containing VTM (preferred) OR sterile container
		Scabs or Crusts	Lesion scab or crust	Two specimens taken from different locations and put into the same sterile container
Contact	Prodrome	Early stage of fever	Tonsillar swab	Each tonsillar swab and NPS should be collected into separate VTM tubes
			Nasopharyngeal swab (NPS)	

**Table 2: Types of samples and collection methods**

No.	Type of sample		
1.	<b>Lesion fluid swab</b>		
	<b>Materials needed</b>	<b>Procedure</b>	<b>Test Method</b>
	1. Sterile, synthetic or dacron swabs. 2 swabs in a single tube  2. Viral transport media (VTM) (preferred)  3. Sterile container.  <b>*Do not use cotton Swabs</b>	1. Do not clean the lesion with ethanol or any other disinfectant prior to swabbing.  2. Hold the swab with a firm grasp. Avoid touching the swab shaft at least an inch before the tip if collecting a dry swab and the length of the swab shaft that will be submerged in liquid if using a swab in viral transport media.  3. 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. If material is visible on the swab surface (such as skin material or from lesion fluid that is leaking from the lesion), this is indicative of an adequate collection. <b>Note:</b> Fluid may not always be visible on swabs.  4. Place the swab in viral transport media (preferred) or without VTM in sterile container.	Real-time PCR

No.	Type of sample		
2.	<b>Scab or crust</b>		
	<b>Materials needed</b>	<b>Procedure</b>	<b>Test Method</b>
	1. Forceps or other blunt-tipped sterile instrument.  2. Sterile container	1. Do not clean the lesion with ethanol or any other disinfectant prior to the procedure. Use forceps or other blunt-tipped sterile instrument to remove all or a piece of the crust at least 4mm x 4mm.  2. Place the crust into a dry, sterile container.  3. Cover the lesion with a band aid.	Real-time PCR
3.	<b>Tonsillar swab</b>		
	<b>Materials needed</b>	<b>Procedure</b>	<b>Test Method</b>
	1. Sterile screw capped container with viral transport media  2. Sterile dry polyester or Dacron swabs  <b>*Do not use cotton swab</b>	1. Swab or brush posterior tonsils with a sterile dry polyester or Dacron swab.  2. Break off end of applicator into a sterile container with viral transport media.	Real-time PCR
4.	<b>Nasopharyngeal swab</b>		
	<b>Materials needed</b>	<b>Procedure</b>	<b>Test Method</b>
	1. Sterile dry polyester or Dacron swabs – with viral transport media  <b>*Do not use cotton swab</b>	1. Swab the nasopharynx with a sterile dry polyester or Dacron swab.  2. Break off end of applicator into a sterile container with viral transport media.	Real-time PCR

### 3.1 Specimen Transportation

- i. Specimens shall be maintained and transported at 2°C to 8°C (ice packs) after collection. If the specimen cannot be transported within 48 hours, it should be stored at -70°C before being transport to the laboratory.
- ii. The Laboratory Request Form must be sent together with the specimen/s, and must be attached at the outside of the triple packaging system. Label the outside sample box with 'mpox'.
- iii. Each specimen should be labeled with the patient's name, identification number, collection date, type of specimen, and body location for lesion specimens.
- iv. Place each specimens into a separate ziplock biohazard plastic bag (secondary packaging/receptacle).
- v. Specimens should be packed and transported in accordance with Guidelines for the safe transport of clinical specimens and infectious substances in Malaysia 2023 (Figure 1) or United Nations Recommendations on the Transport of Dangerous Goods rules and regulations for Category B biological substances (UN 3373).
- vi. Specimen shall be packed by following the Triple Packaging System which consists of a primary packaging wrapped with absorbent material to absorb any leakage of liquid specimen, in a secondary packaging (watertight, leak-proof eg ziplock biohazard plastic bag or screw capped container/canister), and place in a rigid outer box (eg Styrofoam box) with sufficient ice packs/gels to maintain the temperature during transportation.
- vii. All specimen must be sent to designated laboratories as soon as possible.

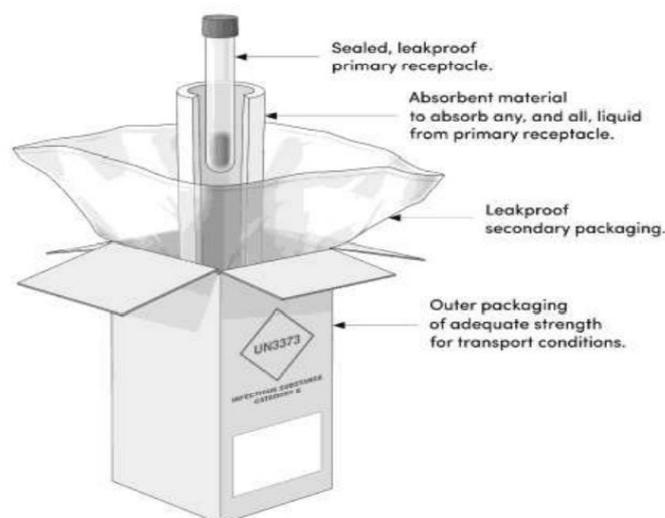


Figure 1 : Example of triple packaging materials that may be used to comply with P650 for Category B infectious substances

### 3.2 Request Form

In order to interpret test results, it is critical that patient information is provided with the specimens, including:

- i. date of onset of fever
- ii. date of onset of rash
- iii. other clinical signs
- iv. date of specimen collection
- v. current status of the individual (stage of rash)
- vi. nationality/country
- vii. travel history to mpox affected country
- viii. contact history with mpox patient
- ix. specimen type
- x. date specimen sent to laboratory
- xi. requestor details i.e., name, contact number, email address

Use Specific Laboratory request form to be used for designated laboratories:

- i. MKAK - *Borang Permohonan Ujian Makmal (Spesimen Klinikal)* with coding MKAK- BPU-U01/Rev2018 – Download from NPHL website <https://mkak.moh.gov.my/index.php/muat-turun/borang-dokumen/bahagian-penyakit/13-borang-permohonan-ujian>
- ii. IMR – *Borang permohonan ujian Virology test request form* Download from IMR website <https://imr.nih.gov.my/en/services-menu/menu-specific-request-form> or PER-PAT 301.
- iii. Hospital – *Borang PER-PAT 301*

Please call officer on duty for any queries.

#### LIST OF LABORATORIES THAT CAN PERFORM THE MPOX PCR TEST

No.	NAME OF LABORATORY	REQUESTOR FROM:
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1.	National Public Health Laboratory (MKAK)	Health clinics in Central Zone (Negeri Sembilan, Melaka, Selangor, WP Kuala Lumpur and Putrajaya, Pahang)
2.	Ipoh Public Health Laboratory (MKAI)	Health clinics and hospitals (MOH and university) in Northern Zone (Perlis, Kedah, Perak and Pulau Pinang)
3.	Kota Kinabalu Public Health Laboratory (MKAKK)	Health clinics and hospitals (MOH and university) in Sabah and WP Labuan
4.	Kota Bharu Public Health Laboratory (MKAKB)	Health clinics and hospitals (MOH and university) in Kelantan and Terengganu
5.	Johor Bharu Public Health Laboratory (MKAJB)	Health clinics and hospitals (MOH and university) in Johor
6.	Institute for Medical Research (IMR)	All hospitals (MOH and university) in the Central Zone (Negeri Sembilan, Melaka, Selangor, WP Kuala Lumpur and Putrajaya, Pahang)
7.	Hospital Sultanah Maliha, Langkawi	Health clinics and hospital in Langkawi
8.	Hospital Umum Sarawak (HUS)	Health clinics and hospitals (MOH and university) in Sarawak
9.	Neogenix Laboratories Sdn Bhd	Private hospitals or clinics
10.	Innoquest Pathology Sdn Bhd	
11.	Pathology & Clinical Laboratory (M) Sdn Bhd (PATHLAB)	
12.	Dunia Wellness Laboratories Sdn Bhd	
13.	BP Healthcare	
14.	Lablink (M) Sdn Bhd	