

I Histopathology and Cytology Laboratory

1 Location & Opening Hours

6/F, Public Health Laboratory Centre, 382 Nam Cheong Street, Shek Kip Mei, Kowloon.

8:42am - 5:30pm (Mon-Fri); close on Saturday, Sunday and Public Holiday.

2 Contact Information

General Enquiries	2319 8360
Histopathology Laboratory	2319 8343
Cytology Laboratory	2319 8341
Consultant Pathologist	2319 8337
Senior Medical and Health Officers	2319 8334 / 8339
Medical and Health Officers	2319 8333 / 8380 / 8381 / 8383
Scientific Officer/ Quality Manager	2319 8382
Facsimile	2776 2744

3 Materials Provided on Request

<u>Material / Container *</u>	<u>Code</u>
Plain Container (for Histopathology)	P27
Container with 10% formalin (for Histopathology)	P31
Frosted-End Glass Slide (for Cytology)	P15
Broom-type Sampler (Cervex-brush® for ThinPrep®)	P32
Container for Sputum Cytology, blue cap	P12
Container for Fluid Cytology, 50 ml	P11
Container for Urine Cytology, 50 ml	P29
Container, with 7.5% formalin (for FNA cytology)	P13
Container for Slide, with 95% alcohol (for FNA cytology)	P14
ThinPrep® Vial (for designated cervical cancer screening centers)	P28

* Please use unexpired (if applicable) material/container for test request

4 Tests Available

The accredited tests in Histopathology & Cytology Division are listed in HOKLAS website:

<https://www.itc.gov.hk/en/quality/hkas/doc/scopes/803P.pdf>

Specimen	Test	Container	Preservative	Request form	Remark
Surgical specimen	Histopathology	Plain	10% buffered formalin	DH2541	- Please refer to Annex 1, 4
Small biopsy					- Specimen should be fixed immediately with an adequate amount of 10% buffered formalin i.e. 4% formaldehyde, 5-10 times the volume of the specimen. - Storage: room temperature
					- Please refer to Annex 4

Specimen	Test	Container	Preservative	Request form	Remark
Skin	Immuno-fluorescence Study	Plain	Frozen Embedding Medium	DH2541	<ul style="list-style-type: none"> – Please refer to Annex 2, 4 – Storage: 4°C
Cervical specimen	HPV DNA Test / Cytology	ThinPrep® Please refer to Annex 3		DH2539	<ul style="list-style-type: none"> – Please refer to Annex 4 – Storage: room temperature
Sputum	Cytology	Container for Sputum Cytology, blue cap	Nil	DH2540	<ul style="list-style-type: none"> – First morning deep cough sputum is required. It should be collected before breakfast to avoid contamination with food particles, and preferably after mouth rinse. – Three consecutive morning sputum specimens are recommended as a routine to ensure the best diagnostic results. – Please refer to Annex 4 – Send immediately or store temporarily at 4°C.
	Asbestos bodies, Haemosiderin, Pneumocystis, Eosinophils (qualitative result)				<ul style="list-style-type: none"> – Please refer to Annex 4 – Send immediately or store temporarily at 4°C.
Tracheal/ Bronchial aspirate/ brush	Cytology	Plain			<ul style="list-style-type: none"> – Fresh specimen in saline should be sent to the laboratory as soon as possible (within same day). – Storage: 4°C – Please refer to Annex 4
Bronchial lavage	Differential count	Plain			<ul style="list-style-type: none"> – Fresh specimen in saline should be kept at 4°C with ice packing during transportation & sent to the laboratory as soon as possible (within same day). – Please refer to Annex 4

Specimen	Test	Container	Preservative	Request form	Remark
Urine	Cytology	Container for Urine Cytology, 50 ml	Nil	DH2540	<ul style="list-style-type: none">– Second morning or random fresh voided urine can be used.– Three samples collected on three consecutive days are recommended for optimal results.– Early morning urine is not acceptable, as the cells are degenerative.– Mid-stream urine specimens are unsuitable as the urothelial cells are often passed at the beginning and the end of voiding.– The specimen should be labelled “voided” or “catheterized” as the cytological features may differ.– Ureteral-catheter urine for suspicion of neoplasia should be appropriately labelled “right” or “left”.– Please refer to Annex 4– Send immediately or store temporarily at 4°C.
	Haemosiderin, Eosinophils, (qualitative result)				
Body fluid	Cytology	Container for Fluid Cytology, 50 ml	Nil		<ul style="list-style-type: none">– Fresh fluid, at least 20-50 ml (except Cerebral Spinal Fluid) is required.– If taken after office hours, the specimen should be kept overnight in the refrigerator at 4°C.– If delay of 1-2 days is expected (e.g. long holidays), an equal volume of 50% ethanol should be added as preservative.– Please refer to Annex 4
Knee joint synovial fluid	Cytology	Plain	Nil		<ul style="list-style-type: none">– Please refer to Annex 4– Send immediately or store temporarily at 4°C.
	Urate crystals (qualitative result)				
Fine needle aspiration from various sites	Cytology	Frosted-end glass slide for smear	95% alcohol or Spray fixative		<ul style="list-style-type: none">– Direct smears on glass slides should be fixed immediately before drying with 95% alcohol or with spray fixative (<i>obtainable from the Cytology Lab</i>). If the smears are kept in 95% alcohol and placed within mailer, the mailer should be placed within a screw-capped container.– The remaining material in the syringe should be rinsed into 7.5% formalin and sent together with the direct smears to the laboratory.– Please refer to Annex 4– Storage: room temperature
		Plain container for cell block	7.5% formalin		

5 Request Form

- (a) DH 2541 (*white in color*) : For histopathology
- (b) DH 2539 (*white in color*) : For cervical cancer screening
- (c) DH 2540 (*white in color*) : For non-gynaecological cytology
- (d) For paying cases, please contact laboratory for **pink** version of the above request forms.
- (e) “Name” and “HKID card number”: The reason for collection of these personal data is solely for patient identification purpose. These must be clearly filled in for data entry. If non-HKID card number is provided, please specify. These will facilitate future data retrieval.
- (f) “Clinical Summary & Diagnosis”: The reason for collection of clinical information is solely for clinical pathological correlation. These are important and must be entered accurately.
- (g) The laboratory is committed to complying with the Personal Data (Privacy) Ordinance and measures are in place to keep all confidential patient information safe and secure.
- (h) Name of clinic, requesting doctor (in BLOCK LETTER), doctor’s signature and assigned MO code have to be provided on the form.
- (i) Specimen type and test request should be clearly written.
- (j) For cervical cancer screening, please use one request form for one specimen.
- (k) Any amendment on the request form should be crossed out, signed and dated by the requesting personnel.
- (l) Please mark URGENT in RED on the request form if a report is needed urgently.
- (m) Abbreviations used in the request form
 - LMP – last menstrual period IUCD – intrauterine contraceptive device
 - CB – contact bleeding PCB – post coital bleeding PMB – post menopausal bleeding

6 Specimens Labelling and Handling

- (a) The cap of the container must be tightly closed to prevent leakage.
- (b) Label specimen (glass slides and vials) with patient’s name and one other unique identifier (e.g. HKID no., passport no., etc.). If the unique identifier submitted is other than HKID card number, please specify on the request form.
- (c) If more than one specimen type or specimens from different sites are sent from the same patient, the specimen type and site of the specimen shall be specified on the specimen container and request form. Please do not label on the cap of the container.
- (d) Specimens for histopathological and cytological examinations should be placed within transparent plastic bags with the designated blue color label “PHLC Histo & Cyto” to facilitate dispatching. Please pack specimens separately from request forms.
- (e) Specimens should preferably be sent to the laboratory on the same day, if specimens (without preservative) can only be collected late in the day, they should be kept in a refrigerator at 4°C and sent to the laboratory for processing on the next working day (Not applicable for bronchial aspirate/brush/lavage, which must be sent on same day). For fluid specimen an equal volume of 50% ethanol should be added as preservative if a delay of 1-2 days (e.g. long holiday) is expected.
- (f) Please refer to Annex 4 “Guidelines for Labelling of Specimens” for detail.
- (g) Please adopt safety precautions and use personal protective equipment during specimen collection according to your institution’s guidelines.
- (h) Please dispose used materials during specimen collection and handle spillage safely according to your institution’s guidelines and Code of Practice promulgated by the Environmental Protection Department.

7 Specimen Rejection

Under the following circumstances, specimen will be rejected:

- (a) Incomplete / Discrepancies of patient's demographic information
- (b) Specimen severely spilt
- (c) Request form without specimen
- (d) Request form with an unmatched /unlabeled specimen
- (e) Specimen type not specified on form
- (f) Improper specimen labelling

8 Specimen Receipt

- (a) In the morning of every working week-day (Mon-Fri), a daily specimen receipt slip will be issued to each clinic to acknowledge all specimens received by the laboratory in the preceding working day.
- (b) The specimens received on Friday will be listed & issued on the following Monday morning.
- (c) Clinics are advised to check for discrepancy (if any) and inform laboratory as early as possible.

9 Reporting of Results, Clinical Advice and Interpretation

- (a) Turn around time (TAT) is the number of working days between sample receipt and issuing a report (TAT% - percentage of cases reported within pledged time)
 - Surgical specimen: 14 working days (TAT₈₀)
 - Small biopsy: 4 working days (TAT₈₀)
 - Cervical cancer screening: 12 working days (TAT₁₀₀)
 - Sputum cytology: 7 working days (TAT₈₀)
 - Other non-gynaecologic cytology: 3 working days (TAT₈₀)
- (b) Larger specimens and specimens requiring special procedures (e.g. special stains, decalcification, immuno-histochemical or molecular study) may need more time before the final report can be issued. The clinician will be informed of preliminary findings, as soon as possible, on these specimens.
- (c) Telephone enquiry of result will not be entertained. Any request for laboratory results should be by fax.
- (d) All reports will be generated by Laboratory Information System (*ECPATH*) & transmitted by fax in batch daily (Mon-Sat) at 9pm for various clinics and 7am & 3pm for Kowloon Hospital.
- (e) The original request form will not be returned.
- (f) Please locate the fax machine for receiving test reports in a secured and enclosed place.
- (g) Clinical advice/ result interpretation is available by contacting the reporting pathologist.

10 Fax Report Summary

- (a) A check list of all reports faxed to individual unit will be issued as a cover page, accompanying the reports.
- (b) Clinics are advised to check for discrepancy (if any) and request for resend of missing/ incomplete report.

11 Test Referral

For provision of comprehensive diagnosis in unusual cases, ancillary test/ expert opinion from other institution may be necessary. The final report will be concluded after incorporation of all essential information including the ancillary test result/ expert opinion and the reporting pathologist's diagnosis.

12 Procedure for Requesting Patient's Material and Slides for Further Study and Review

For the purpose of patient management, clinician in charge may request patient's material in paraffin section/ glass slide for further study and review. For proper tracking and safe custody of all patients' diagnostic material, our laboratory has laid-down procedures for making such requisition. Please contact the laboratory for arrangement.

13 Coroner's Autopsy (Kowloon Hospital only)

- (a) Please refer to the revised standing circular on coroner's inquest. In general all cases with unnatural cause of death, suspicion of foul play or ill treatment and deaths within 24 hours of general anesthesia should be referred to the coroner.
- (b) Upon decease of a patient in the ward, the medical officer prepares request for post-mortem with case summary & sends to the admission office.
- (c) Admission office prepares document to coroner (with signature of Hospital Chief Executive) and obtains a reference number from police.
- (d) The medical record with relevant documents has to be sent to pathologist for information by special messenger before sending them to Queen Elizabeth Hospital mortuary.
- (e) The mortuary supervisor will coordinate with the police and inform the pathologist of the time for interviewing the relatives with the police.
- (f) All prepared particulars and the notification form to the coroner will be sent to the coroner's office.
- (g) The pathologist may proceed when the order to perform an autopsy is obtained.
- (h) The medical record will be collected by special messenger and return to admission office.

14 Clinical Autopsy (Kowloon Hospital only)

- (a) The deceased's clinical record, case summary, x-rays and written consent for full/limited autopsy from nearest relative have to be sent to pathologist.
- (b) The pathologist will arrange date and time of autopsy with the mortuary supervisor at Queen Elizabeth Hospital.
- (c) A provisional anatomical diagnosis will be issued within 24-48 hrs.
- (d) The final anatomical diagnosis will be issued within 6-8 weeks.

15 Users' Satisfaction, Comments and Complaints

The laboratory is committed to providing quality service with continual improvement. If users encounter problems with the services or have suggestions for improvement, please contact our Senior Medical Technologist at telephone: 23198331 or email: smt_phls10@dh.gov.hk. The Laboratory will also conduct regular customer satisfaction survey to seek users' comments and areas for service improvement.

Annex 1 Guidelines for Obtaining Skin Biopsy for Histopathology Examination

(A) Selection of Biopsy Site

- (1) Inflammatory dermatoses
 - It is important to select a representative portion of the eruption.
 - A well-developed lesion, not too early or too late, is preferred.
 - Avoid sites with secondary changes like excoriation or impetiginization.
 - Multiple biopsies on sites showing various stages of development are most informative in a gradually evolving lesion.
 - In a generalized eruption, biopsy from the trunk, arm and upper leg is preferable to that from the extremities (especially the lower leg).
- (2) Vesicular, bullous or pustular disease
 - A newly developed lesion not older than 24 to 48 hours is preferable, to avoid the problem of re-epithelialization.
 - Inflammatory component may change with time.
 - If immunofluorescence study is required, a separate unfixed specimen including the bullous lesion and perilesional skin is preferred.
- (3) Sites to avoid if possible:
 - palm and sole
 - elbows and knees
 - lower leg

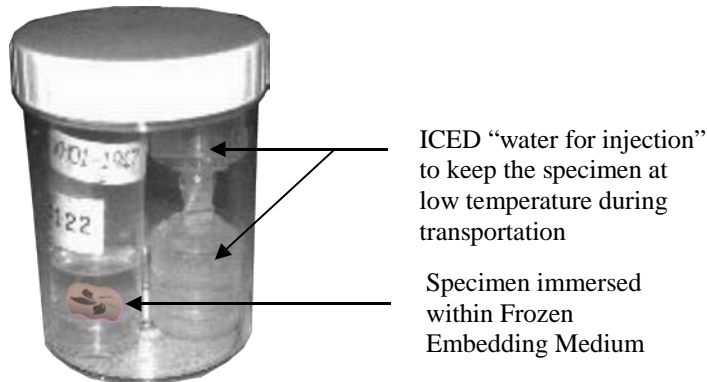
(B) Selection of Biopsy Method

Mostly dictated by the suspected disease process and individual preferences:

- (1) Superficial disease such as seborrhoeic keratosis, solar keratosis or wart
 - Shaving, scissors removal, curettage
- (2) Deep processes such as panniculitis
 - Deep incisional biopsy or big (> 4 mm) punch biopsy including the subcutis down to superficial fascia
- (3) Eruptions with actively progressing border and atrophic or sclerotic lesions
 - Elliptical incision bridging the area of normal and lesional skin; should also include the whole dermis together with most of the subcutis
- (4) Nodular, fungating, pigmented or suspected malignant lesion
 - Excisional biopsy is preferred. If incisional biopsy is more practical, one that extends beneath the deepest part of the lesion and includes as much of the lesion as possible is preferable.

Annex 2 Guidelines for Preparing Skin Biopsy for Immunofluorescence Study

- (A) Fresh skin specimens for immunofluorescence study should be coated with Frozen Embedding Medium. Specimens should NOT be wrapped up in gauze or immersed in normal saline. Suggested example of specimen preparation is illustrated below; the containers and Frozen Embedding Medium can be obtained from the Histopathology Laboratory.



- (B) In order to facilitate prompt delivery of fresh skin specimens to the Histopathology Laboratory for immediate handling, please attach a green label "Histo. Lab. Fresh specimen" to the laboratory request form for all fresh specimens.
- (C) Separate skin biopsy specimens and request forms for histopathology examination and immunofluorescence study are preferred as histopathological features are better preserved in fixed specimens. Please also refer to "Guidelines for Obtaining Skin Biopsy for Histopathology Examination" (Annex 1).

Annex 3 Guidelines for Obtaining Optimal Cervical Specimens

(A) Introduction

HPV DNA Testing is generally being adopted as primary methodology for cervical cancer screening for clients' age ≥ 30 years old while primary cytology screening is recommended for clients' age < 30 years old as transient HPV infection is considered common in this age group. Cytology triage for HPV DNA positive cases may be beneficial for clinical management. Only one methodology (either HPV DNA test or cervical cytology) should be selected for one particular client as clinically indicated.

(B) Specimen Collection

In order to enhance test validity and minimize false negative result, we need to optimize the quality of cervical samples submitted for testing. The followings highlight some practical aspects of specimen collection.




(1) Timing of Taking Cervical Samples

The sample should best be taken around mid-cycle. It is important to avoid taking cervical sample when the patient is menstruating, as excessive blood will significantly obscure cytological assessment. The patient should be instructed not to use a vaginal douche, pessary or any type of lubricant 24 hours prior to having a sampling.

(2) Exposing the Cervix

Most cancers and precancerous lesions arise in the transformation zone of the cervical canal. For a cervical sample to have maximum diagnostic value, the sample taker has to ensure that the whole transformation zone be sampled with well-preserved cellular material. The cervix must be visualized with the speculum in situ and under adequate lighting. Excessive lubricant to facilitate the insertion of the speculum should be avoided. If a bimanual examination is to be carried out, it should be performed after sampling to prevent lubricant contamination, trauma or dislodgement of diagnostic material.

(3) Obtaining Cervical Sample (ThinPrep®)

	<p>Step 1 A cervical sample is collected using :</p>	
<p>Broom-type cervical sampling device (Cervex-Brush®)</p>	<p>OR</p>	<p>Spatula ± Endocervical brush (Cytobrush®).</p>
<p>Step 2</p>		
<p>Instead of smearing the material on a slide, the sample device is rinsed into a ThinPrep® vial containing PreservCyt® transport medium, no additional fixative is required.</p>		
	<p>Broom-type device</p>	<p>Rinse the device in the vial by pushing it into the bottom 10 times, forcing the bristles apart. Finally, swirl the broom vigorously to further release material.</p>



The whole device is then discarded.

No detached brush inside specimen vial is allowed.

or



**Spatula ±
Endocervical
brush**

Rinse the spatula in the vial by swirling the spatula vigorously 10 times.

Rinse the endocervical brush in the vial by rotating 10 times while pushing against the vial wall. Finally, swirl the brush vigorously to further release material.



The devices are then discarded.

No detached brush inside specimen vial is allowed.

Step 3

Tighten the cap so that the torque line on the cap passes the torque line on the vial.

Specimen with severe leakage will be rejected.



Step 4

Properly label the specimen before sending to the laboratory.

(4) Use of Collection Instrument

The manufacturer's recommendations for use of a particular kind of collection instrument have to be complied with.

If a broom-type sampler (*Cervex-Brush*®) is used, the central long bristles should be inserted deep enough to allow the shorter bristles to fully contact the ectocervix. The brush is then rotated five times with gentle pressure by rolling the handle clockwise between thumb and forefinger (Fig. 4a).

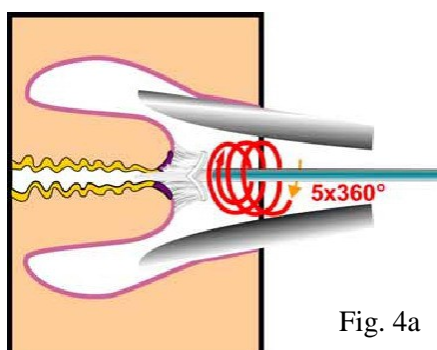


Fig. 4a

Broom-type sampler (*Cervex-Brush*®)

When using the spatula to collect sample, it should be applied with some degree of firmness and rotated around the full circumference of the cervix (Fig. 4b).

If an endocervical brush is required, this should follow the spatula sample as it may cause slight bleeding. The brush is gently inserted into the endocervix and rotated 1/4 to 1/2 turn in one direction (Fig. 4c).

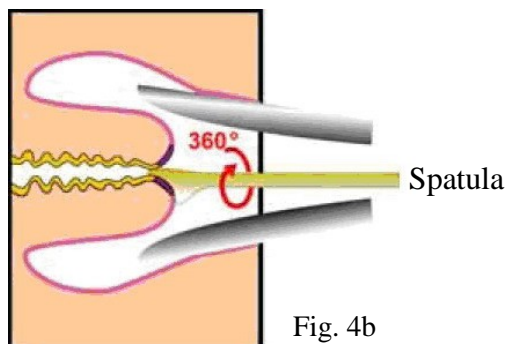


Fig. 4b

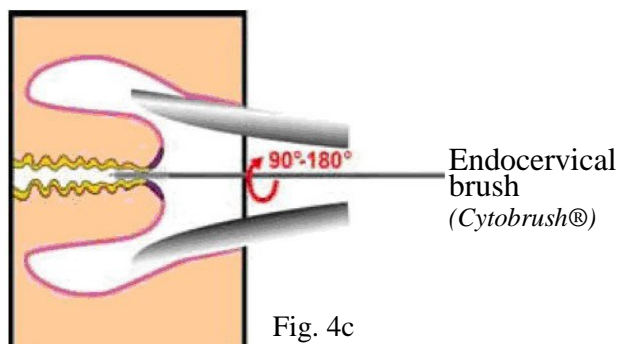


Fig. 4c

(C) Specimen Submission

All specimens should be submitted to the laboratory accompanied by a fully completed cervical cancer screening request form to assist interpretation. The specimen vial must be labelled according to set guidelines (see Annex 4).

The request form accompanying the specimen should include patient's name, one other unique identifier, age/date of birth, date of collection of specimen, type of specimen, name and code of requesting physician and clinic. Pertinent clinical details such as date of last menstrual period, whether the patient is pregnant, postnatal or postmenopausal as well as use of oral contraceptive and intrauterine contraceptive device usage should be given. History of previous abnormal HPV DNA, cervical cytology and histology results, history of cancer, radiotherapy, chemotherapy and gynaecologic surgery should be mentioned. Relevant clinical signs or symptoms such as abnormal cervical appearances, post coital or contact bleeding are essential.

The specimen collection method should be stated clearly on the form. The name (in block letters), the MO code and signature of the requesting doctor have to be provided on the form.

All specimens should be individually packed to prevent cross contamination by leakage and transported to the laboratory for processing.

(D) Ancillary HPV DNA Test for Cervical Cytology

For clients' age <30 years old, high risk human papilloma virus (HPV) DNA testing will be performed for triage of cases with first time diagnosis of atypical squamous cells of undetermined significance (ASCUS) and lack of previous abnormal history/ back to routine screening.

(E) Management of Abnormal Test Result

Please refer to the latest version of "Guidelines for Cervical Cancer Prevention and Screening" in HKCOG website (<http://www.hkcog.org.hk>) for management of abnormal results. In usual circumstances, no comment would be made in individual report and the guidelines can be followed according to diagnostic categories. For unusual cases, the pathologist may suggest further management strategy according to the particular findings and previous results.

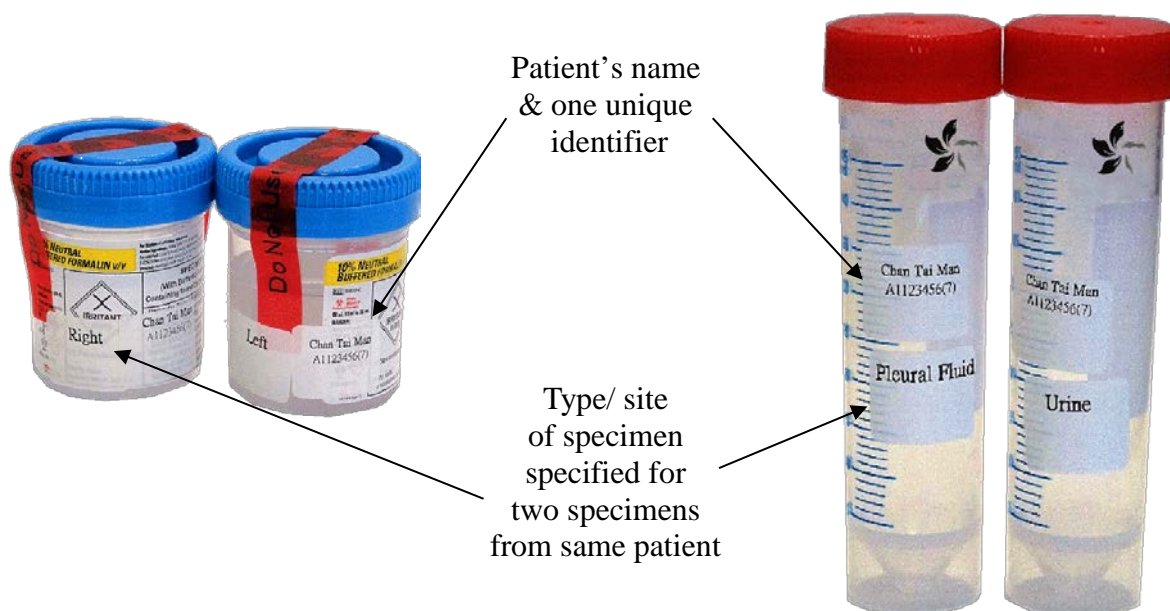
Annex 4 Guidelines for Labelling of Specimens

(A) Principle

- (1)** In order to ensure proper patient and specimen identification, specimens sent for Histopathology and Cytology examination shall be labelled with patient's name and one other unique identifier (e.g. Hong Kong identity number, passport number, etc.).
- (2)** All specimens without proper patient identification would be rendered unsatisfactory for evaluation and rejected without further processing.

(B) Specimen Containers (including ThinPrep®)

All specimen containers shall be labelled with patient's name and one other unique identifier. Serial number obtained from the request forms is not acceptable. Legible printing or pre-printed labels with the two identifiers are acceptable.



(C) Glass Slides (Fine Needle Aspiration)

For ease of inscription and the purpose of permanent record, frosted-end glass slides should be used.

- (1)** Write the name of the patient (which should be identical to that shown on the request form) in block letter on the frosted end of the glass slide.
- (2)** Write the unique identifier clearly (If the number submitted is other than the HKID card number, please specify on the form.)
- (3)** Due to limited labelling area, please skip the captions. e.g. (Name:) or (Hong Kong identity number:)

CHAN SIU MAY A123456 (7)

(✓)

Name : CHAN SIU MAY ID NO. : A123456 (7)

(✗)

- (4) Use HB pencils.
- (5) Always write the data in the preferred standardized format for easy checking in the laboratory.

CHAN SIU MAY A123456 (7)

(✓)

CHAN SIU MAY A123456 (7)

(✗)

CHAN SIU MAY A123456 (7)

(✗)

- (6) Please **do not** include the name of the clinic, the laboratory number, the marital status or other unnecessary information.

CHAN SIU MAY A123456 (7)

(✓)

CHAN SIU MAY A123456(7) M/30 25/5/2002

(✗)

CHAN SIU MAY A123456 (7) XXXX Clinic

(✗)

- (7) In order to minimize contamination of the slide surface by the gloves starch powder or skin surface squames, please cover the slide with a piece of card paper while inscribing on the frosted surface.