

PRE-ANALYTICAL ERRORS IN ANATOMIC PATHOLOGY

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AP LAB SERVICES



HISTOPATHOLOGY

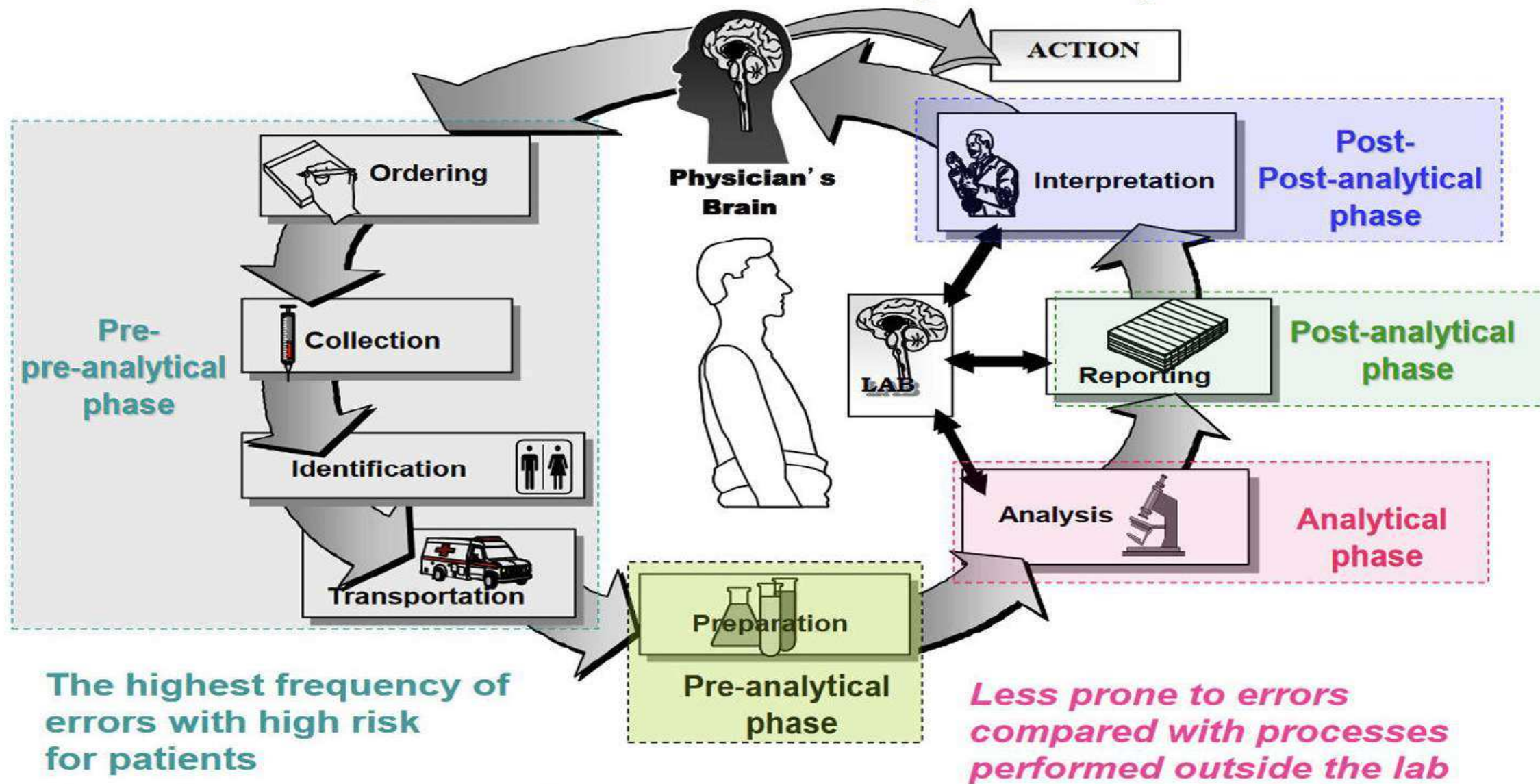
- Macro- & microscopic examination of tissues
- Biopsies & surgical resection specimens
- Frozen sections
- Ancillary services: Special stains, IHC, IF



CYTOPATHOLOGY

- Gynae
- Non-gynae: FNA, brushings, body fluid cytology
- FNA clinic: ROSE

What is the Pre-analytical phase?



What is an ERROR?

- **Major error**

An error that has a major effect on therapy that can alter the prognosis of a disease or that has a major effect on prognostication, exclusive of therapy.

- **Minor error**

An error that does NOT have a major effect on therapy that can alter the prognosis of a disease or that has a major effect on prognostication, exclusive of therapy.

Errors in Pre-Analytical Phase

- **Clinician error & Specimen collection phase**
 - Specimen from the wrong patient
 - Wrong surgical procedure
 - Inadequate tissue for diagnosis
 - Wrong fixative or media
 - Wrong container
 - Ordering the wrong test
 - Mislabeling or labeling illegibly a specimen
 - Providing misleading or inadequate clinical information





Errors in Pre-Analytical Phase

- **Specimen transport phase**
 - Specimen loss
 - Environmental factors that cause specimen destruction
 - Untimely delivery of a specimen
 - Delivery of a specimen to the wrong site



Errors in Pre-Analytical Phase

- **Specimen receipt & accessioning phase**
 - Incorrect order entry & accessioning
 - Assigning a specimen to the wrong patient
 - Misidentifying the site of origin of a specimen

Histo Lab ID		Reg. No		Date Received	14-07-2021
Patient Name					
I/C Number	5618	Age	61	Gender	Female
				Race	Malay
Specimen	(A)NASAL CAVITY, RIGHT (B)NASAL CAVITY , RIGHT				
Requesting Doctor					
Clinic/Ward					

Histo Lab ID		Reg. No		Date Received	11-2023
Patient Name					
I/C Number		Age	63	Gender	Male
				Race	Malay
Specimen	MEDIASTINUM				
Requesting Doctor					
Clinic/Ward	Anterior mediastinal mass for investigation. CECT Thorax (6/11/23) Incidentally there is a heterogen				
Clinical History					
MACROSCOPY					

Common errors in AP Lab HASA UiTM

- **Specimen does not tally with the request form**
 - No. of samples are not consistent with the form
 - Incomplete or incorrectly labelled request form or specimen
 - Mismatch labelling on the specimen & request form

Corrective & preventive actions:

- Clarification & rectification with requester
- All specimens must be labelled with the patient's name and at least one other unique identifier (e.g NRIC, MRN etc)
- Separate request forms for each sample (eg. 2 samples require 2 forms)
- Specimen must be correctly labelled and matches the form
- Label sticker should be put on the container, not on the lid

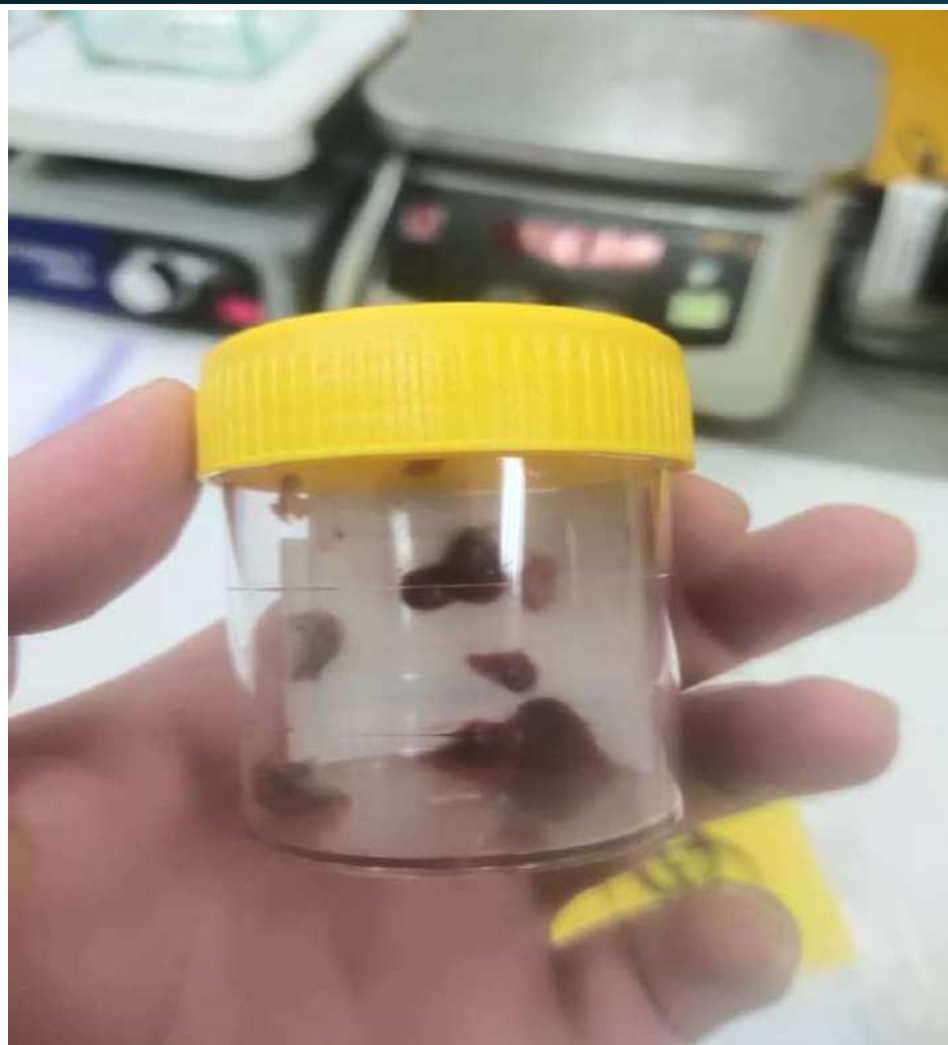
Common errors in AP Lab HASA UiTM

- **Problems with specimen container**

- Leaking
- Not enough formalin
- Wrong fixative
 - Skin biopsy for IF studies in formalin instead of saline
- Improper container
 - Using "bekas kuih raya"
 - Inappropriate size
 - The lid is not tight

Corrective & preventive actions:

- Clarification & rectification with requester
- Use appropriate size of container
- Use 10% neutral buffered formalin (except frozen section or biopsy for IF studies)
- Ratio of formalin volume to specimen volume is 10:1
- Use leak-proof container and make sure the lid is tightly sealed
- Small container should be transported in a biohazard bag



Common errors in AP Lab HASA UiTM

- **Multiple specimens in one container**
 - Eg. Tonsils & adenoid
 - Different tissues must be sent separately and correctly labelled, along with separate request forms
- **One specimen, one container, one request form**
 - **EXCEPT Skin tissue biopsy for IF studies – ONE FORM but TWO SPECIMENS in TWO SEPARATE CONTAINERS**

Common errors in AP Lab HASA UiTM

- **Inadequate clinical information**

- Patient's details
- History
 - Relevant history not indicated
 - Eg. Post-NAC mastectomy – history of NAC, tumour size before & after tx , radio findings
- Clinical diagnosis
- Specimen type, site
- Requester's name
 - Forms are filled in by a different person other than the person who performed the procedure

URGENT

ANATOMIC PATHOLOGY REQUEST FORM

URGENT

Name : [REDACTED]
MRN : [REDACTED]
I/C No : [REDACTED]
DOB : [REDACTED]
Age : 41y 7m 4d
Race : Malay
Gender : MALE
App.Date (Specimen) : N/A
Remark :

Clinic / Ward : HUITM - Daycare
Phone No : 0126480907
Date of Admission / Clinic Appointment : [REDACTED]
Requested By : [REDACTED]
Ordered Date/Time : 29-07-2022 09:43
Consultant in Charge :

Clinical History :

h/o lap appendicectomy early this year complicated with SSI - persistent discharge from wound site CT AP - collection at subcutaneous tissue at RIF Colonoscopy - no sinus or fistula, no collection, polyp at caecum, polypectomy done

Diagnosis :

Caecal polyp

Test Request :

HPE - Diagnostic Biopsy

Specimen :

COLON SIGMOID

Site :

N/A

TERIMA 1AUG'22 10:03AM

Specimen Collection :

Specimen Collection : 29-07-2022 09:43:37
Sample Taken by / Printed by : DR. AFIQ AIZAT RAMLEE
Sample Taken at : HUITM - Phlebotomy Daycare

Common errors in AP Lab HASA UiTM

- **Specimen orientation is not written in the request form**
 - Eg. mastectomy, wide local excision
 - Sutures present but not specified

Corrective action:

Complex specimens requiring orientation must be tagged accordingly & clearly indicated in the accompanying request form

Specimen rejection & Rectification

- **NO rejection policy**
- **ALL specimens are deemed precious**
- For certain requests which do not fulfil the unit's requirements, the requester shall be contacted to rectify the request by filling in the rectification form
 - Rectification is done prior to tissue processing
- The specimen will only be processed following satisfactory corrective actions

Rectification criteria

- **Specimens**

- No specimen(s) received
- Wrong specimen(s) received
- Incorrect no. of specimens received
- Inappropriate container
- Wrong labelling of specimen(s)
- Specimen(s) do not tally with request form
- Leaking container

- **Request form**

- No request form received
- Wrong request form received
- Request form torn/damaged/contaminated
- Incomplete request form

RECTIFICATION FORM

*Please return this form after rectification has been made

Patient's Name : [REDACTED]
 Registration No. / MRN : [REDACTED]
 Patient's ID / NRIC : [REDACTED]
 Ward / Clinic : Ward 7A
 Type of Specimen : Sebaceous cyst
 Test Request : HPE
 Date & Time Received : 29 July 2024
 Reason for Rectification : Specimen not in formalin.
 Informed By : Norinnon Samat
 Date & Time Informed : 29 July 2024 (9:00 am)
 Informed to : PPK / Staff Nurse : SN Seliha
 : Requester : [REDACTED]

Corrective actions (to be filled by requester):

immediately topup formalin.

Remark (to be filled by lab staff):

Corrective Action is done 29/7/24.

Further details; kindly contact Anatomic Pathology Laboratory, UiTM at 03 - 61265244 / 5053

RECTIFICATION FORM

*Please return this form after rectification has been made

Patient's Name : [REDACTED]
 Registration No. / MRN : [REDACTED]
 Patient's ID / NRIC : [REDACTED]
 Ward / Clinic : Daycare
 Type of Specimen : Skin tag (Right superior axilla)
 Test Request : HPE
 Date & Time Received : 15/2/24 @ 10:30 am
 Reason for Rectification : to Type of specimen on request form not
tolly with the type of specimen label on container (Right anterior
axilla skin tag)
 Informed By : MLI Ana
 Date & Time Informed : 15/2/24 @ 10:35 am
 Informed to : PPK / Staff Nurse : Pin
 : Requester : [REDACTED]

Corrective actions (to be filled by requester):

Change label of Specimen. from anterior axilla
skin tag to Superior Skin tag

Remark (to be filled by lab staff):

Done

Further details; kindly contact Anatomic Pathology Laboratory, UiTM at 03 - 61265244 / 5053

The background of the image is a dense, overlapping collage of numerous small, rectangular sticky notes. These notes are in four primary colors: blue, green, pink, and yellow. Each sticky note features a large, bold, black question mark. The notes are scattered across the entire frame, creating a vibrant and textured backdrop. In the center of this collage is a white rectangular box containing the word 'QUIZ' in a large, bold, black sans-serif font. To the left of the word 'QUIZ', there is a short, solid blue horizontal line.

QUIZ

Question 1

The following are pre-analytical errors in AP lab, EXCEPT:

- A. Specimen is labelled with one unique identifier
- B. Frozen tissue section is sent in formalin
- C. Using saline for skin biopsy submitted for IF studies
- D. Specimen orientation is not specified in the request form

Question 2

What is the recommended ratio of formalin-to-specimen volume?

- A. 1:20
- B. 1:10
- C. 10:1
- D. 1:1

THANK YOU

