



INTRODUCTION TO ANATOMIC PATHOLOGY

Dr Awla Binti Mohd Azraai
Anatomic Pathologist



ANATOMIC PATHOLOGY

HISTOPATHOLOGY

- MACRO & MICRO EXAM OF TISSUES
- BIOPSIES, SURGICAL SPECIMENS
- INTRAOPERATIVE FROZEN SECTIONS
- ANCILLARY SERVICES: SS, IHC, IF

CYTOPATHOLOGY

- GYNAE
- NON-GYNAE: FNA, brushings, body fluid cytology
- *FNAC clinic with ROSE

ROUTINE SURGICAL AND BIOPSY SPECIMENS

- All specimens must be sent to the designated Anatomic Pathology reception counter, Level 1, PPUiTM.
- If there are **multiple specimens** from the same patient, these must be completely collected prior to arrival to the counter WITH different forms for each sample.
- All specimens must be labelled with the patient's name and at least one other unique identifier (e.g NRIC, MRN etc).
 - The type of specimen must be clearly labelled on the container.

- Multiple specimens must be **labelled accurately** and this must be done by the medical officer/specialist. The staff must be responsible to re-check the details on the specimen containers prior to dispatch.
- All specimens for routine histopathology examination should be **fixed in 10% formalin** in **suitable leak-proof container**, unless stated otherwise (e.g. frozen section or biopsy for IF studies).
 - The volume of formalin used should be at least 10 times the volume of the specimen.
- Do not put large specimens in small containers as this would prevent proper fixation of the tissue and it may cause distortion to the specimen.
- **Complex specimens** which require orientation must be **marked or tagged** accordingly by sutures / staples. The orientation must be clearly indicated in the accompanying request form.
- If a specimen is of utmost importance, or if there is uncertainty in the method of sampling/suitable fixation of the specimen, please communicate directly with the pathologist.



REQUISITION FORM

- All specimens must be accompanied by a requisition form.
- All requests shall be made via UniMEDS.
 - Please select the relevant test request according to the category and provide relevant clinical info.
- For multiple specimens, please ensure that request for each specimen is done separately on the system. Requests for histopathology or cytology have to be filled in separate forms.
- If an urgent result is required, please tick the "Priority" column on the request page.
- Print the generated request form and the barcode sticker. Place the sticker onto the labelled specimen container.
- Any specific additional details can be written on the form (e.g urgent/biohazard).

FROZEN SECTION

- This service is ONLY offered during working hours (8 am -4pm), Monday –Friday
- All frozen section requests must be discussed with the surgical pathologist on-call at least 24-hour BEFORE procedure.
- **Please inform laboratory staff if a booked frozen section is cancelled.**
- All specimens must be **sent fresh without any preservative in a closed container**, accompanied by a completed request form along with the requester's contact number.
- All specimens should be sent immediately to the laboratory upon removal.
- Interpretation will be verbally given to the requesting surgeon via phone call and documented.
- High risk infectious material will not be accepted for processing (e.g tuberculosis).
- All cases scheduled for frozen section are best placed first in the operating list to ensure no disruption to the service.

IMMUNOFLUORESCENCE (IF) STUDIES

- This service is provided for renal and skin biopsies.
- All requests for IF studies must be discussed with the relevant pathologist on-call. For pre-planned biopsies, kindly inform lab staff at least three (3) days in advance.
- Renal biopsy:
 - At least 3mm core of fresh tissue, in a clean air tight container or in phosphate buffer solution (PBS). Do not put fresh tissue on gauze.
 - Send specimen to the laboratory immediately. If delay is anticipated, please transport in ice or gel ice.
 - Please send a separate biopsy fixed in formalin for ordinary light microscopic examination.
- Skin biopsy:
 - Place skin biopsy in saline or PBS, in a clean container.
 - Send specimen to the laboratory immediately. If delay is anticipated, please transport in ice or gel ice.
 - Please send a separate biopsy fixed in formalin for ordinary light microscopic examination.


SPECIMEN REPORTING AND TURNAROUND TIME (TAT)

ITEM	TAT
<i>Uncomplicated urgent biopsies</i>	5 working days
<i>Complicated urgent biopsies and routine surgical specimen</i>	14 working days
<i>Frozen section</i>	30 minutes (per specimen) from time of arrival to the lab to verbal reporting
<i>Renal / Skin biopsy with immunofluorescence</i>	14 working days
<i>Gynae / Non - Gynae cytology:</i>	14 working days

*Turn Around Time (TAT) is calculated from the date (or time) of arrival of the specimen to the laboratory to the date (or time) the report is verified

Rectification Criteria

1. Specimens with no request form, inappropriate request form, damaged, or incompletely filled request forms.
2. Incorrectly labelled specimen container
3. Discrepancy between details on request form and specimen container
4. Inappropriate specimen container



Common Pre-analytical Errors in Anatomic Pathology Laboratory

Goal of Anatomic Pathology

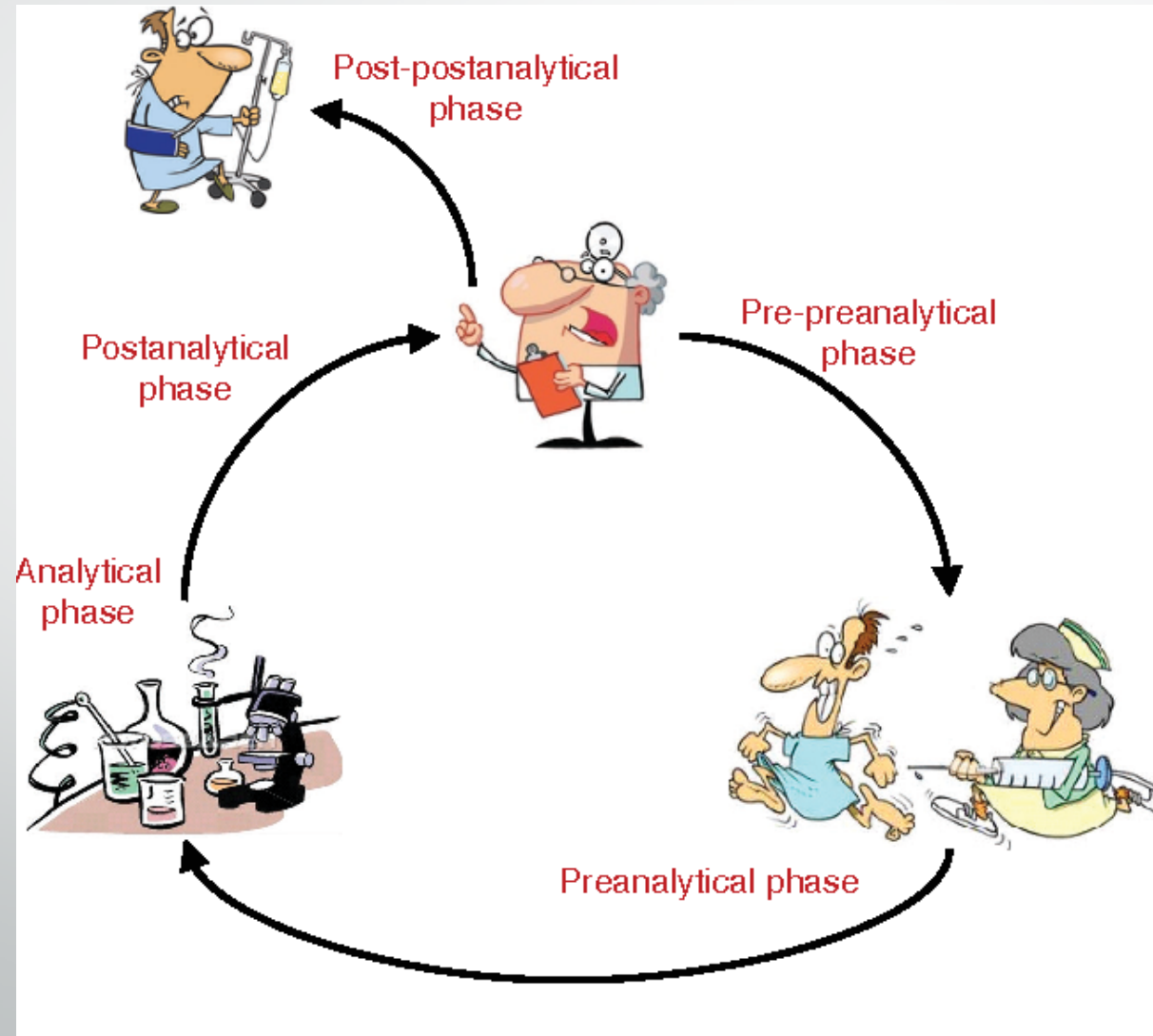
- To render a **correct and complete diagnosis** to the **correct patient** in a **timely fashion** in a way that is understandable and useful to the physician treating the patient.



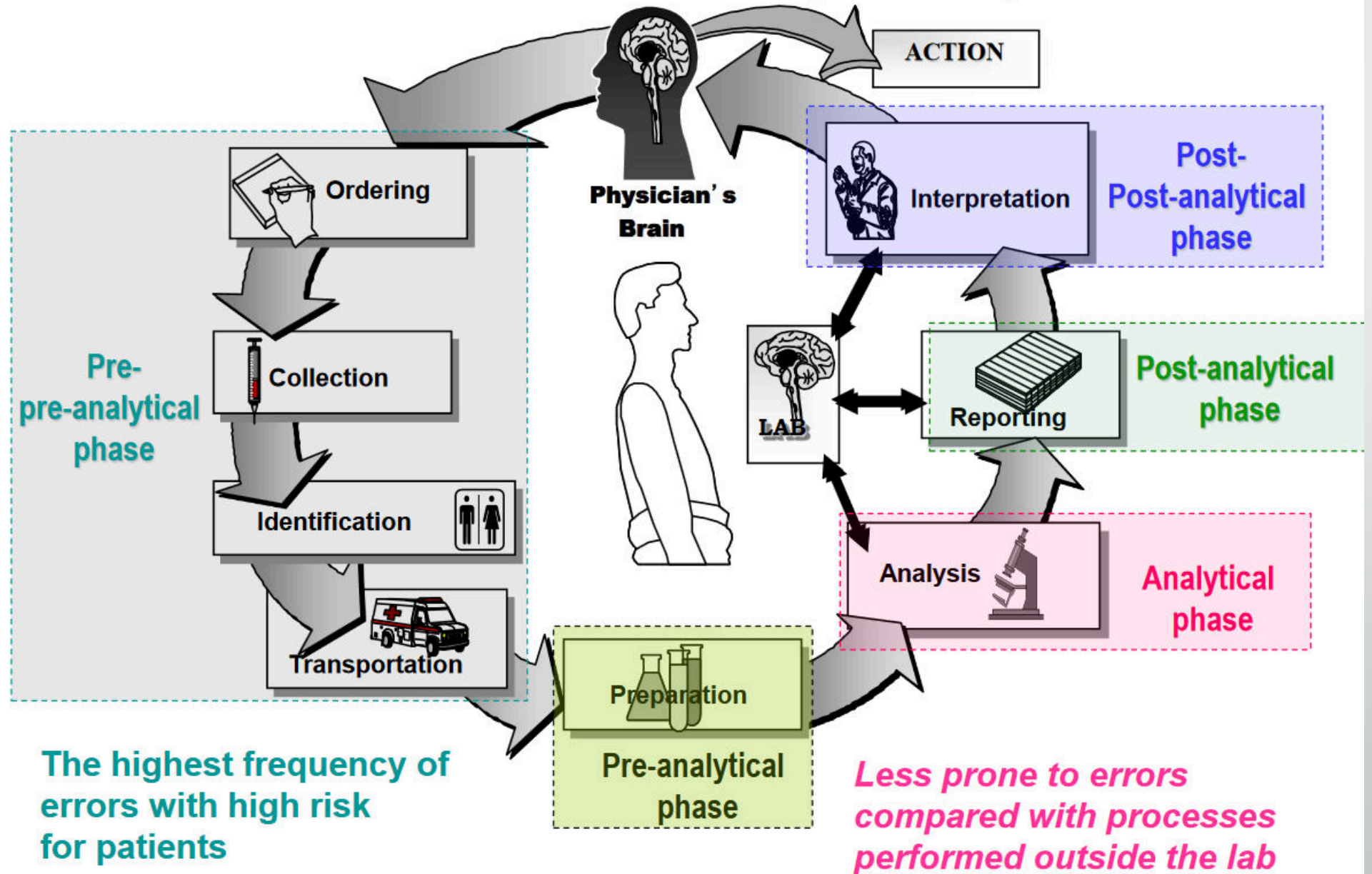
3 GOALS!

- CORRECT
- COMPLETE
- TIMELY

Test Cycle In Anatomic Pathology Lab



What is the Pre-analytical phase?



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Steps of preanalytical phase

**Preparation prior to
sampling**

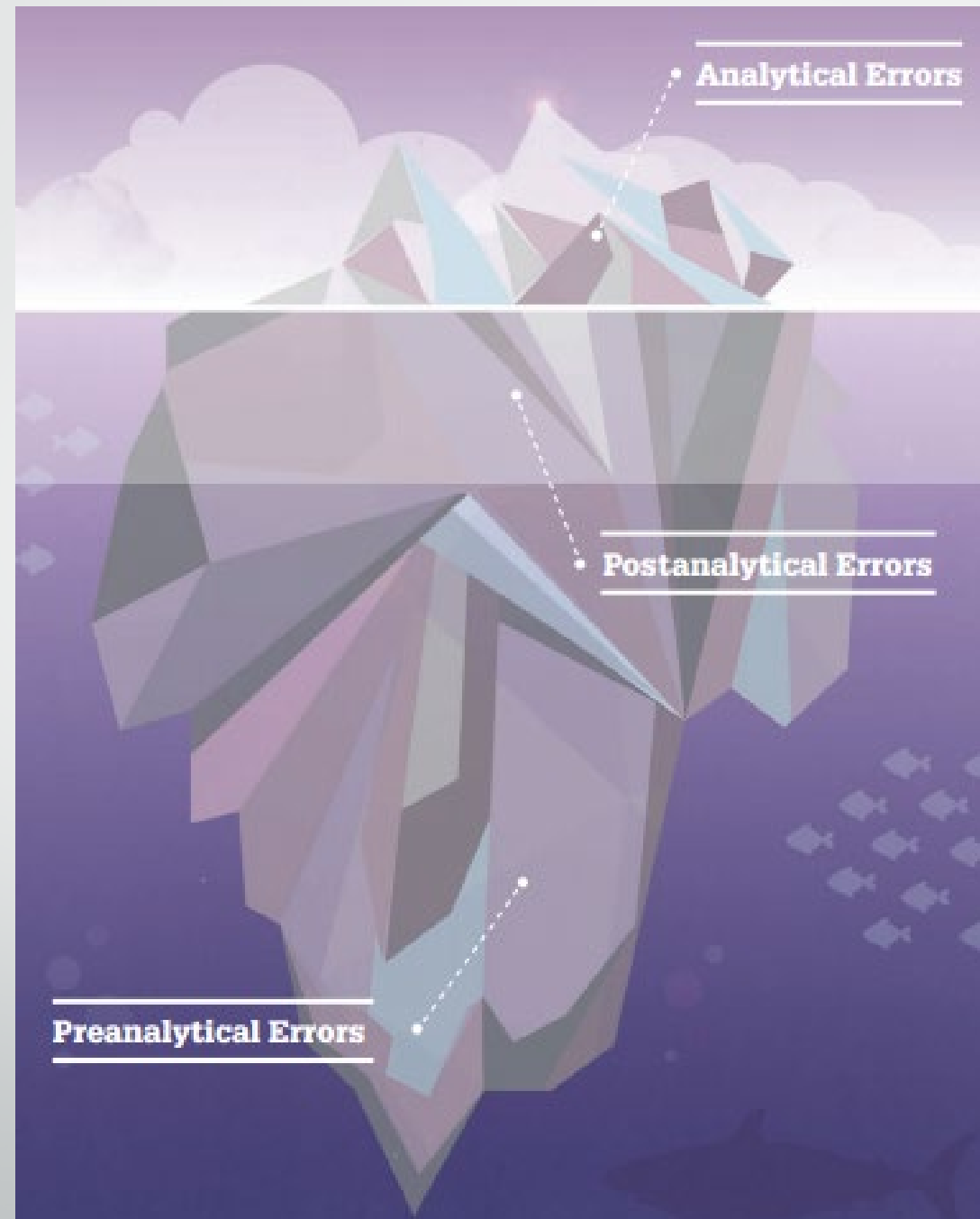
Sampling/handling

Transport/Storage

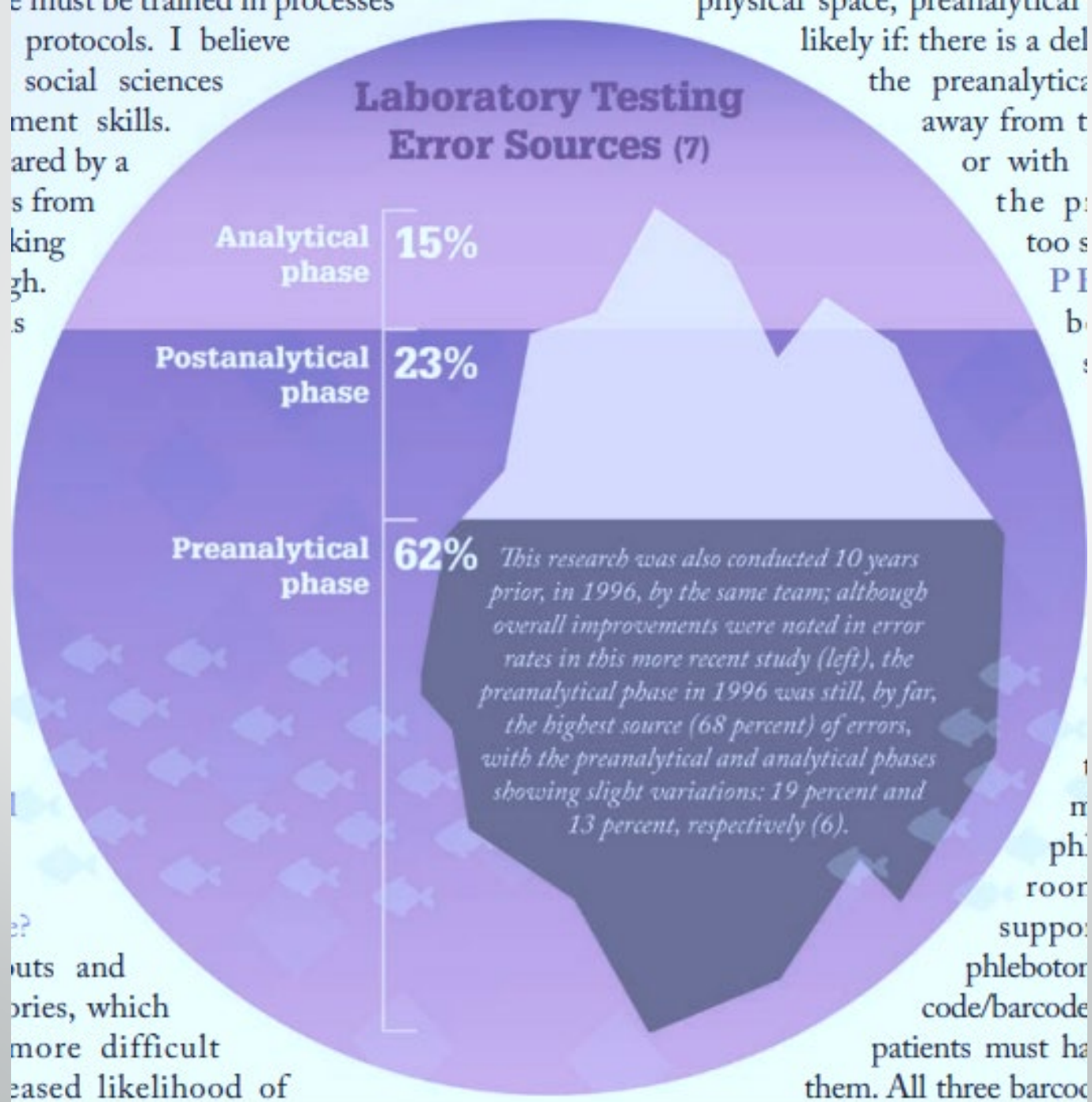
**Preparation
prior to analysis**

What is an ERROR?

- A **major error** in anatomic pathology is 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.
- A **minor error** is one that does not have a major effect on therapy that can alter prognosis or that does not have a major effect on prognostication, exclusive of therapy



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Errors in Preanalytical phase

Clinician error

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

Specimen transport phase

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

Receipt and accessioning phase

- Incorrect order entry and accessioning
 - Assigning a specimen to the wrong patient
 - Misidentifying the site of origin of a specimen

Common problems faced in UiTM lab

- **Specimen and form does not tally**

- AP Number on form and container must tally
- Different forms for every sample
- Specimen must be labelled and matches the form

- Do not know where to despatch the form

- Sticker should be put on the container not the lid

- **Problems with specimen container**

- Leaking
- Not formalin/ Insufficient formalin
- Improper container
 - Inadequate size
 - Use of “bekas kuih raya”
 - The lid is not tight

Issues

- Requester did not choose the proper specimen when requesting in unimeds, most write “any” and did not write the specimen on the container
- Labelling on the lid instead of the container
- Forms are filled in by a different person who did the procedure and it is unsure of who the actual requester is
- Different tissues are not separated ie left and right tonsils and adenoid
- Multiple requests in unimeds – can refer to IT

TAKE HOME MESSAGE

- Before you send the specimen, check
 - The form: Patient's particulars, History, specimen type, Surgeon's/ MO's name, Which clinic/ ward to despatch the result to?
 - The specimen: Is it labelled? What organ? Right or left? If it is tagged, is the indicator mentioned in the form? Is the container appropriate?
- If everything is complete, then the MLT will readily accept your specimen 😊



THANK YOU