Prevention of Potential Risk in Requisition and Passing of Histopathological Specimens

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Introduction:

Processing of histopathological specimens involves many steps. Mislabeling during requisition and passing of specimen is a high risk which could lead to serious consequences such as wrong diagnosis and treatments.

Problem Statement:

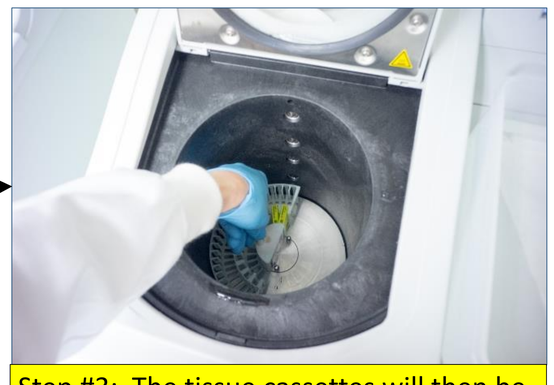
Presence of potential risk in mislabeling during requisition and passing of histopathological specimens.

Root Cause Identification Methodology:

Process mapping and observation were carried out over 2 weeks to Identify the potential risks in requisition and passing of histopathological specimens. 6 lab staffs were also interviewed to point out which area has the most tendency for error during the course of their work. Possible mislabeling was selected for further analysis using SHEL model and HFACS.

Step #1: Tech matched patient's particulars on form and specimen before accessioning and printing cassettes.

Step #2: Another tech will match the patient's particulars on form and specimen; match biopsy numbers on cassette, form and specimen bottle as well. Tissue will be grossed and put into the cassette by the tech.



Step #3: The tissue cassettes will then be recorded on a checklist before loading it into a tissue processor for overnight processing.

Identified Potential High Risk areas in the process:

- **Cassette printing**
  - Printing was done by manually keying in the lab number and patient's initials, risk of human error.
  - Reprint and additional printing requires an additional attention to the running cassette numbers.
- **Accessioning**
  - Possibility of swapping specimen bottles and request forms.

Results and Intervention

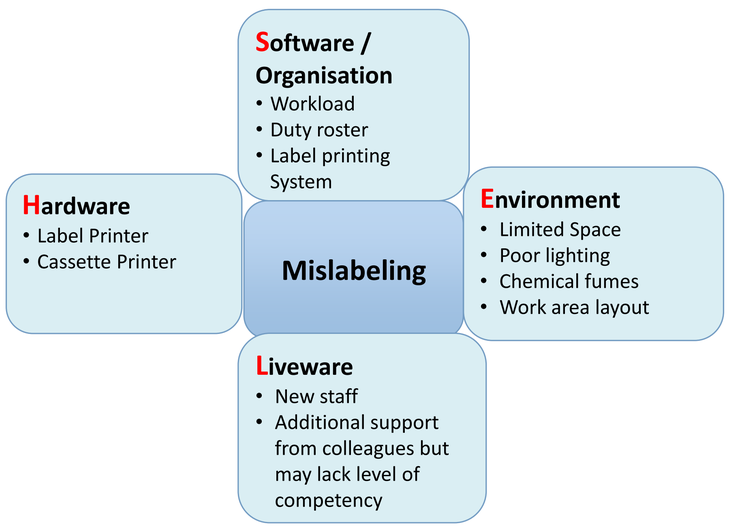
Possible Identified Root Causes:

- Staff fatigue
- New staff
- Physical and mental workload
- Staff level of competency
- Environmental factors i.e. limited space which give rise to workflow layout not ideal.

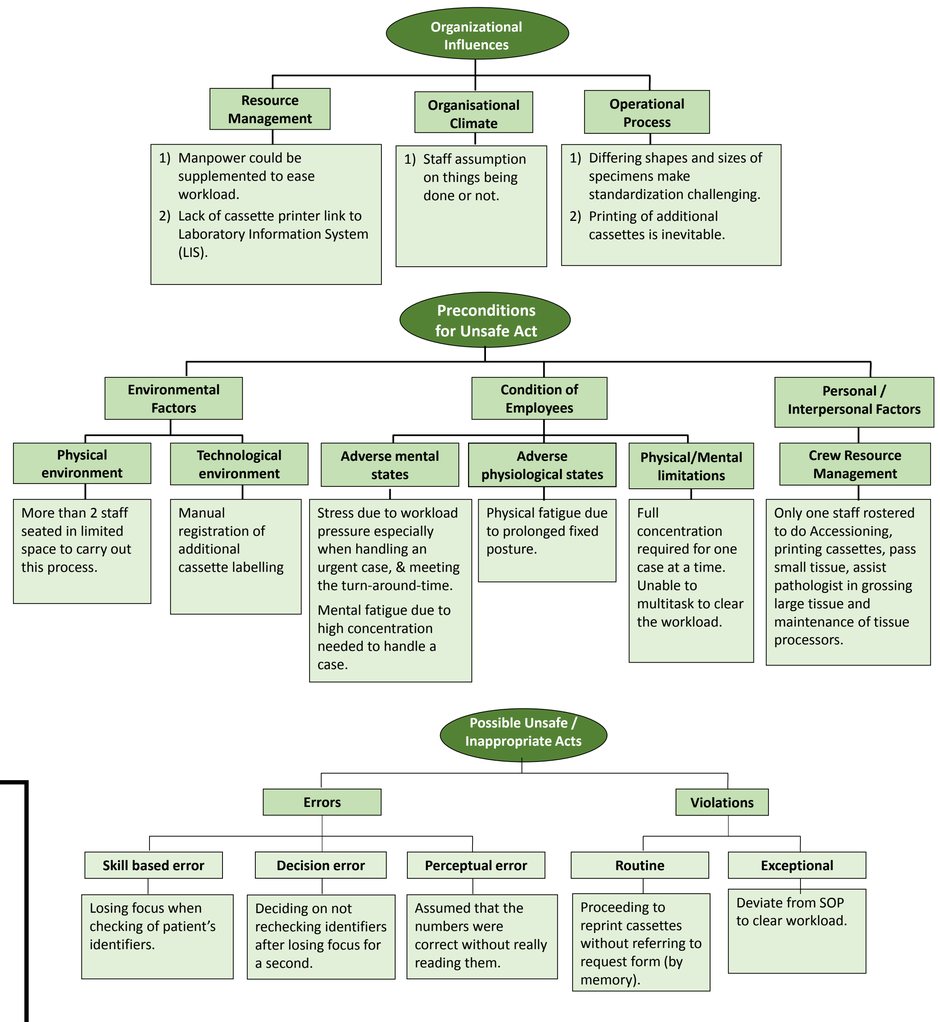
Recommendations to reduce possible potential errors:

1. Review ergonomics of work area to improve workflow.
2. Review possibility to reduce physical and mental workload i.e. reorganization of duty roster.

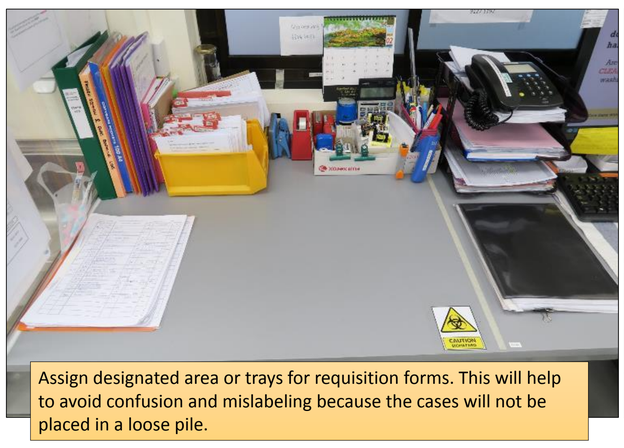
SHEL Model



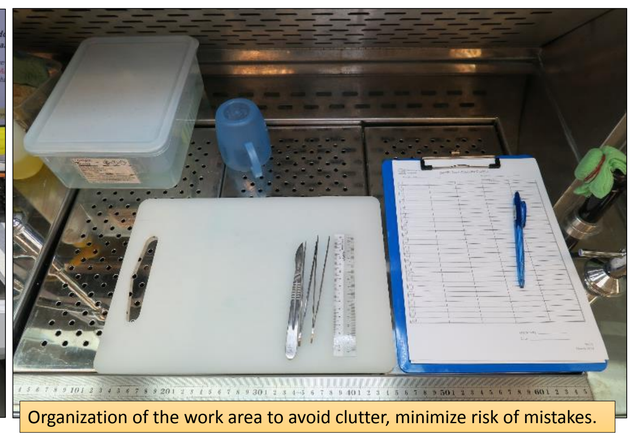
Human Factors Analysis and Classification System (HFACS)



Improving Ergonomics

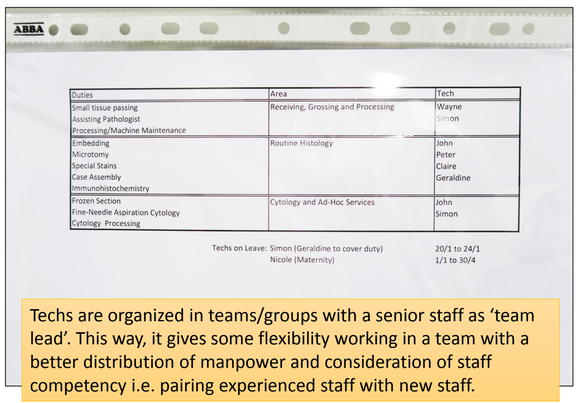


Assign designated area or trays for requisition forms. This will help to avoid confusion and mislabeling because the cases will not be placed in a loose pile.



Organization of the work area to avoid clutter, minimize risk of mistakes.

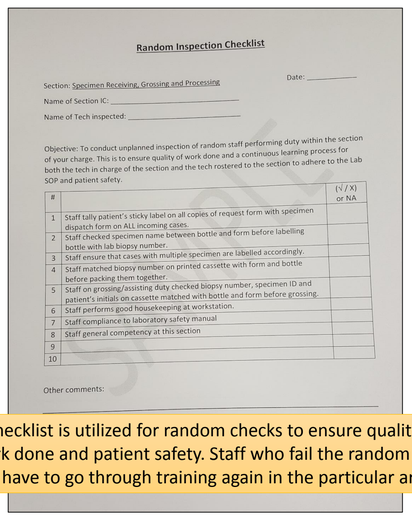
Organizing Manpower and Random Checks



Duties	Area	Tech
Small tissue passing Assisting Pathologist Processing/Machine Maintenance	Receiving, Grossing and Processing	Wayne Simon
Embedding Microtomy Special Stains Case Assembly Immunohistochemistry	Routine Histology	John Peter Claire Geraldine
Frozen Section Fine-Needle Aspiration Cytology Cytology Processing	Cytology and Ad-Hoc Services	John Simon

Techs on Leave: Simon (Geraldine to cover duty) 20/1 to 24/1
Nicole (Maternity) 1/1 to 30/4

Techs are organized in teams/groups with a senior staff as 'team lead'. This way, it gives some flexibility working in a team with a better distribution of manpower and consideration of staff competency i.e. pairing experienced staff with new staff.



Random Inspection Checklist

Date: _____

Section: Specimen Receiving, Grossing and Processing

Name of Section IC: _____

Name of Tech inspected: _____

Objective: To conduct unplanned inspection of random staff performing duty within the section of your charge. This is to ensure quality of work done and a continuous learning process for both the tech in charge of the section and the tech rostered to the section to adhere to the Lab SOP and patient safety.

#		(√/X) or NA
1	Staff tally patient's sticky label on all copies of request form with specimen dispatch form on ALL incoming cases.	
2	Staff checked specimen name between bottle and form before labelling bottle with lab biopsy number.	
3	Staff ensure that cases with multiple specimen are labelled accordingly.	
4	Staff matched biopsy number on printed cassette with form and bottle before packing them together.	
5	Staff on grossing/assisting duty checked biopsy number, specimen ID and patient's initials on cassette matched with bottle and form before grossing.	
6	Staff performs good housekeeping at workstation.	
7	Staff compliance to laboratory safety manual	
8	Staff general competency at this section	
9		
10		

Other comments:

A checklist is utilized for random checks to ensure quality of work done and patient safety. Staff who fail the random check will have to go through training again in the particular area.

Conclusion:

With proper training, regular breaks and job rotations bi-weekly, effects of the human factors can be minimized within the histopathology lab. Improvement to ergonomics will also help us prevent chances of forms hidden from view.

Work Cited:

Mislabeling of Cases, Specimens, Blocks, and Slides CAP study of 136 Institutions – *Raouf E.Nakhleh, MD; Michael O. Idowu, MD; Rhona J. Souers, MS; Frederick A. Meier, MD; Leonas G. Bekeris, MD*