

Cost & Efficiency Project : Optimizing Material Utilization in Mucosal and Trucut Biopsy Procedures

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OBJECTIVE

The objective of the project is to optimize the use of materials and improve efficiency in histopathology procedures at SKMCH & RC. Specifically, it aims to reduce the resource consumption and time spent on mucosal and trucut biopsy procedures, which currently involve preparing four tissue sections (H&E) across two slides. The goal is to lower costs, enhance diagnostic quality, and improve workflow efficiency while maintaining high standards of patient care.

METHODS

Data from 1st Jan to 30th June 2024 was collected and analyzed to evaluate the consumption patterns and associated cost of materials used in Mucosal and Trucut Biopsy Procedures at SKMCH & RC.

During this period:

- Consumed slides (count) extended cost was Rs. 1,797,036
- Consumed coverslips (count) extended cost was Rs. 742,254
- Consumed mounting media (ml) extended cost was Rs. 42,192
- Consumed printing (count) extended cost was Rs. 273,462
- Consumed paraffin (gm) extended cost was Rs. 364,032

Overall expenditure was Rs. 3,218,976.

STRATEGY IMPLEMENTATION

- New molds were procured.
- The molds were tested, and feedback was collected from the histopathologist.
- Upon receiving approval, staff were trained on the use of the new molds.
- The molds are now in regular use.

Gantt Chart

Sr#	Activities	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	June 2025	July 2025	Aug 2025	Sep 2025	Oct 2025	Nov 2025	Dec 2025
1	C&E Project Proposal & Approval												
2	Team formation												
3	Define requirements: identify the specifications of small molds												
4	Team meeting: discuss and finalize the decision to use small molds												
5	Search for supplier: identify the supplier												
6	Evaluate options: Compare different molds based on quality, price, and delivery time.												
7	Raise Material Purchase Request												
8	Follow up the MPR												
9	Receive the molds												
10	Evaluation and correction of mold size												
11	Training: Train staff on the new embedding and cutting process using the special-sized molds.												
12	Implement Changes: Start using the new molds.												
13	Take the feedback from pathologist												
14	Monitor Implementation												
15	Final presentation in Quality Council Meeting												



Figure 1 : Highlights the differentiation between old and new practices

Item	Unit Cost (Rs)	Pre implementation 01-01-2024 to 30-06-2024 Total CPTs: 16407		Post implementation 01-01-2025 to 30-06-2025 Total CPTs: 17794	
		Count	Extended Cost	Count	Extended Cost
Slides (Count)	46	39,066	1,797,036	20,696	952,016
Coverslips (Count)	19	39,066	742,254	20,696	393,224
Mounting Media (mL)	18	2,344	42,192	1,242	22,356
Printing (count)	7	39,066	273,462	20,696	144,872
Paraffin (gm)	3	121,344	364,032	122,106	366,318
		Total	3,218,976	Total	1,878,786

RESULTS

From January to June 2025, SKMCH&RC successfully reduced material usage for mucosal trucut biopsies, resulting in cost savings of Rs. 3,290,442. The new approach lowered costs **from Rs. 3,524,007 to Rs. 1,878,786**. This Outcome demonstrates the effectiveness of cost-optimization strategies and quality improvement efforts

Summary of Cost saving due to shift in practice

Total CPTs (over 6 months, Jan-2025 to Jun-2025) where changes are applicable	17797
Total cost if processed with old practice	3,524,007
Total cost when processed with new practice	1,878,786
Total savings	3,524,007 - 1,878,786 = 1,645,221
Estimated cost saving over one year	Rs. 1,645,221 x 2 = Rs. 3,290,442 per year.

CONCLUSION

From January to June 2025, SKMCH&RC minimized handling errors, streamlined slide reviews, enhanced visual comparisons, and achieved significant cost savings of **Rs. 3,290,442** in mucosal trucut biopsies through optimized practices and resource utilization.

