

# Turnaround Time of Surgical Pathology Reports in a tertiary care teaching hospital

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## ABSTRACT

**Aim:** The study was conducted to analyze the turnaround time (TAT) of surgical specimens received in the pathology laboratory with affiliated Ghurki Trust Teaching Hospital (GTTH). The rationale of the study was to help improve the patient care.

**Methods:** The data of 1000 biopsies was collected from the record in the histopathology lab of Lahore Medical and Dental College (LMDC). This included the site, type of biopsy and date of receiving the specimen and signing out of the report. TAT was calculated excluding the weekends and any public holidays. The different reasons which could delay in signing out the reports were also observed.

**Results:** The maximum numbers of cases were reported within 5 to 8 days, which are 612. The minimum TAT was 2 days and the maximum TAT was 15 days. The mean TAT was calculated to be 5.6 days.

**Conclusion:** The pace with which laboratory results are reported affects the institution as well as the patient

**Keywords:** Pathology report, turnaround time, surgical specimens

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## INTRODUCTION

Turnaround time is broadly defined as the time between accession of specimen by the lab and the issuing of final pathologist report. The timely release of the reports is one of the objectives of the quality assurance programs<sup>1</sup>. According to CAP the TAT for histopathological specimens in 90% of routine cases is within 2 working days and documented reports within 4 working days<sup>2</sup>. Histopathology is one of the sub-specialties of pathology laboratories. Almost all medical or surgical departments need histopathology reports as diagnostic aid<sup>3</sup>. A timely and accurate report can help clinicians and the patients with reference to treatment plans as well as for shorter stays in hospitals, reducing economic burden<sup>4</sup>.

The TAT of different labs can be different depending upon the availability of resources and this can be shortened to help the patients, clinicians and also for continuous quality improvement of the laboratory. Different reasons of delay at different levels of a surgical pathology reporting can be taken care of one by one, to shorten TATs, making them closer to the standard protocols set by different recognized authorities.

## MATERIALS AND METHODS

This study was carried out in histopathology department of Lahore Medical and Dental College, Lahore Pakistan. The data was collected with the permission from the head of department. The record of 1000 specimens with the date of accession, to the date of signing out of surgical reports was collected from requisition forms, from October 2016 to June 2017. The 10% formal saline fixed samples were received from different departments of GTTH; which were processed

and stained with eosin and hematoxylin. The TAT was calculated by excluding the weekends and public holidays. The number of specimens received from each department, the specimen type, the diagnosis, special techniques and other reasons affecting the TAT were noted.

## RESULTS

The study revolved around the TAT of 1000 samples received in the course of 9 months from GTTH. The samples were processed in the histopathology lab of LMDC where different types of biopsies and surgical specimen were received from 10 different departments. The number and percentages of specimens received is given in the table 1. The maximum number of specimens received was from surgical unit 1, were 370 (37%) in number. The eye department had only 1 out of 1000 cases (0.1%), which was the minimum as compared to the other 9 departments (Table 1). The turnaround times for all specimens were calculated, and then categorized in 4 groups as given in table 2. The maximum numbers of cases were reported within 5 to 8 days, which are 612. The minimum TAT was 2 days and the maximum TAT was 15 days. The mean TAT was calculated to be 5.6 days.

## DISCUSSION

Histopathology is one of the subspecialties of the pathology laboratories. All the medical and surgical departments need histopathology reports for helping in a definitive diagnosis. Assessing the turnaround time is important for timely reporting of histopathology specimens. There are many reasons for the TAT to be different in different labs, according to the facilities. The delays can be at any level from the receiving of the specimen, its grossing examination, processing, staining, slide release (to the

Received on 05-11-2018

Accepted on 08-02-2019

residents then to consultants and transcriptionists) and printing out of the reports.

The size of 1000 specimens included in the study ranged from small biopsies of millimeters to large organs as surgical specimen like amputations. The mean TAT of all specimens was 5.6 days. The college of American Pathologists (CAP) standard requires TAT of surgical pathology reports in 90% of routine cases to be within 2 days or less and documented report in 4 working days to expedite treatment plans<sup>2</sup>. The Royal College of Pathologists of Australia (RCPA) support TAT for final pathologist report being available for clinicians in 80% specimens within 5 working days, 90% specimens in 10 working days and 98% specimens in 15 working days<sup>5</sup>.

This study includes all the routine biopsy specimens. The larger specimen had more slides for preparation and examination. Specimens requiring special stains were also included in this study. With the available facilities in a tertiary care hospital in a developing country like Pakistan mean TAT of 5.6 days is acceptable with reference to CAP protocol and RCPA.

Another report about turnaround time says that the routine biopsy should be out within 2-3 working days, large cancer cases 3-4 working days and routine non cancer cases also in 3-4 days. Delays were related to more fixation time for large specimens, decalcification of bony specimen, re-grossing, immunohistochemistry, special staining and intradepartmental consultations<sup>6</sup>. In our study all types of specimens were included and the mean turnaround time was 5.6 days.

In a Nigerian tertiary care hospital the mean TAT was 11.10 days which did not include complex and bone specimens as compared to our 5.6 days mean TAT including complex and bone specimens. Also a report from Zarboetal says 95% and 98% of routine biopsy specimens were reported within 2-3 working days. In Spain a mean TAT of 6.24 days and a range of 2-27 days has been reported<sup>7</sup>.

The range of TAT in our study was 2-15 in which only one case took 15 days and another case took 2 days. The cause of delay of 15 days was due to many reasons which included unavailability of detailed clinical and radiological information, intradepartmental consultation, re-grossing and the fact that it was a case of well differentiated carcinoma. The other specimen was of a fibroadenoma breast which was received on Monday and was reported out the next day because it did not require additional processing or intradepartmental consultation.

The reasons for delay in the department are many. Major reasons were the involvement of consultants, residents and demonstrators in teaching and record keeping of classes, minimum typing staff, power failure, and absence of multi-head microscope for intradepartmental consultation to reduce the time. The data included in the study is small as it is collected for 9months period, which limits the generalizability of its findings. Addition of more data from the same institute or from different institutes will improve the reliability of the results. Our limitations also include, not accounting the actual reason of the delayed TAT and lack of comparison of TAT with accuracy of our reporting as reported in biopsy audit report. Further studies can be done in this regard.

The study can help in improving the TAT. This can be done by using of logs which cover every step beginning from accession date and time to the date and time of signing out of the reports. This also includes engaging people, improving communication skills in light of patient and clinician feedback. Teamwork among colleagues can help in exploring the potential problems and obstacles that might occur during improvement journey. Continuous quality improvement with reference to TAT should be done without comparison with other institutions.

## CONCLUSION

The pace with which laboratory results are reported affects the institution as well as the patient. The quality and safety considerations should always take precedence over expectations regarding turnaround times.

Table 1: Percentage of cases from different departments

Departments	n	%age
Orthopedics	248	24.8
Surgical Unit 1	370	37.0
Surgical Unit 2	167	16.7
Gynaecology	135	13.5
Urology	10	1.0
ENT	10	1.0
GI clinic	20	2.0
Skin and Plastic surgery	10	1.0
Oral Surgery	29	2.9
Eye	1	0.1

Table 2: Turn-around time of biopsy cases from different departments

Days	Cases	%age
1-4	306	30.6
5-8	612	61.2
9-12	77	7.7
>12	5	0.5

## REFERENCES

1. Ribe A, Ribalta T, Lledo R, Toras G, Asenjo MA, Cardesa A. Evaluation of turnaround times as a component of quality assurance in surgical pathology. *Int J Qual Health Care*. 1998; 10 (3); 241-245.
2. Saeed Alshieban, Khaled Al-Surimi. Reducing turnaround time of surgical pathology reports in pathology and laboratory medicine departments. *BMJ Quality Improvement Reports* 2015;
3. Ali S, Kathia U, Gondal M, et al. (May 08, 2018) Impact of Clinical Information on the Turnaround Time in Surgical Histopathology: A Retrospective Study. *Cureus* 10(5): e2596.
4. Vollmer RT. Analysis of turnaround times in pathology an approach using failure time analysis. *Am J Clin Pathol*. 2006; 126; 215-220.
5. Turnaround Time in Anatomical Pathology. Anatomical Pathology Advisory Committee. Royal College of Pathologist of Australia. 2019. [cited 2019 March 5]. Available from <https://www.rcpa.edu.au/getattachment/fc304ac0-948a-4845-90a1-89976f701f82/Turnaround-Time-in-Anatomical-Pathology.aspx>
6. Specimen turnaround time. Department of Pathology and Laboratory Medicine. Sacramento, California [Internet]; 2019.
7. Uchendu OJ, Eze GI. Intra-laboratory turnaround time (TAT) in a developing country: an audit of a histopathology department of a Nigerian teaching hospital. *Ann Trop Pathol*. 2013; June 4 (1); 41-45.