



Audit of Histopathology Request Forms Submitted in Laboratory of a Tertiary Care Hospital

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Abstract

Background: *The quality of the laboratory result lies in the quality of information provided in the laboratory request forms. Majority of laboratory errors arise from the preanalytical phase of sample testing and hence this study was conducted.*

Aims: *This study aims to assess the level of completion of histopathology request forms submitted for investigations in our institute.*

Methods and Material: *A review of all histopathology request forms received between January to December 2018 were evaluated to assess the level of performance in four domains of data in the request forms such as patient details, test request details, physician details, and specimen details. Descriptive statistical analysis was done*

Results: *In our study, only 12.2% of forms evaluated were fully completed. Patient identification details, the signature of requesting physician and request date were the most completed information (100%) and least completed information been timeline category for reporting (8.7%).*

Conclusions: *This study shows that patient clinical information and physician details were inadequately filled in our setting. There is a need to create awareness of the importance of appropriate filling of request forms among in house surgeons and referring physician and also encourage them to use self-inking stamps for physician identification. Regarding clinical data, the histopathology request forms may be reviewed and redesigned to allow physicians to fill the forms without omitting significant history.*

Keywords: *Laboratory request forms, histopathology, preanalytic errors, data analysis.*

Introduction

The current era of evidence-based medicine is increasingly dependent on reliable laboratory services. Errors in laboratory reports are generally classified into pre-analytic, analytic and post-analytic phase of sample testing of which majority

(50-70%) arise due to preanalytic errors (which are not under control of laboratory personnel) such as specimen transportation and delivery (mislabelling of container and wrong fixative) and absence of important clinical information in laboratory request forms, which can have serious effect on patient

care^{1,2,3}. Laboratory request forms are the first line of communication between clinician and pathologists which provides patients with relevant clinical details and information regarding the test to be performed. The quality/accuracy of the test result is dependent on the quality of information provided in the request forms, thereby helps mutual best practice for each other

This study aims to assess the level of completion of histopathology request forms submitted for investigations in our institute so as to find the degree of deficiencies in data provided by requesting physicians and also to emphasise the importance of appropriate filling of request forms in future.

Materials and Methods

This was a retrospective descriptive study. Histopathology Request forms for investigations received in our central laboratory between January and December 2018 were retrospectively evaluated to measure the compliance of referring clinicians in adequate completion of request forms. Each request form was assessed for the presence and completeness of the information requested therein: patient details; (identity-full name, age, gender, OP/IP number; clinical information- nature and duration of symptoms, site of lesion, relevant investigations including imaging, provisional clinical and differential diagnosis; type of surgery); test request details- Request date, Timeline category for reporting; physician details (name and signature of the requesting clinician, clinical unit); Specimen details- Date and time of collection of specimen. These data should be present on 100% of requests if completed correctly.

Results

A total of 114 histopathology request forms received during the study period and all were evaluated for patients details, test request details, physician details as well as specimen details. Out of 114 forms evaluated, only 12.2% of forms were fully completed and 100 (87.8%) had one or more

information missing. The results were analyzed and tabulated accordingly.

The rate of completion of data elements on the request forms are as follows; Table- 1,2,3,4

Patients name, OP/IP number, the signature of referring clinician, date of the request were the most completed information (100%) in all the forms. Name of the referring clinician(38.5%), nature and duration of symptoms(35%), relevant investigation reports(30.7%), time of sample collection(24.5%) and timeline category for reporting(8.7%) were the least provided information (less than 50%) in the decreasing order of frequency.

Table 1 Rate of completion of patients details

Patients details	Number of cases (out of 114)	Frequency of cases (%)
Name	114	100
Age	112	98.3
Sex	112	98.3
OP/IP number	114	100
Patients clinical information		
Nature and duration of symptoms	40	35
Site of lesion	88	77
Relevant investigation including imaging	35	30.7
Provisional/ differential diagnosis	108	94.7
Type of surgery	102	89.4

Table 2 Rate of completion of physician details

Physician details		
Name	44	38.5
Signature	114	100
Clinical unit	97	85

Table 3 Rate of completion of specimen details

Specimen details	Number of cases (/114)	Frequency of cases (%)
Date of collection	114	100
Time of collection	28	24.5
Specimen received in formalin fixative	102	89.8
Specimen received in appropriate container	97	85

Table 4 Rate of completion of test request details

Test request details	Number of cases (/114)	Frequency of cases (%)
Requesting date	114	100
Timeline category for reporting	10	8.7

Discussion

'Microscopic diagnosis is a subjective evaluation that acquires full meaning only when the pathologist is fully cognizant of the essential clinical data, surgical findings, and type of surgery' as stated by Juan Rosai⁴. The importance of appropriate filling of request forms is usually underestimated by the clinicians. Inadequate information or errors while filling out laboratory request forms can significantly impact the quality of laboratory results and, ultimately, patient outcomes. This study was an attempt to assess the level of completion of request forms by the referring clinicians, so as to put forth some deficiency correction management in near future. The significance of proper filling of laboratory request form is regularly emphasized at orientation programs for in house surgeons. It is the duty and discipline of the requesting surgeon to make sure that both the specimen container and the request forms are correctly and adequately completed.

Specimen Details

Date and time of specimen collection allow adequate appropriate time for tissue fixation and helps to plan a schedule for tissue processing. Immediate fixation of the surgical specimen will reduce the warm ischemia time which has an effect on test outcome. Unfixed specimens are unsuitable for special studies and no definitive microscopic diagnosis possible further. Inappropriate specimen containers may distort the specimen morphology and may prevent pathologist to obtain gross clues from it.

Patients Details

Patients demographic details helps to identify correct patients and allow cross-referencing of previous reports if available. Patients adequate clinical information allows relevant use of special stain, therefore, directs pathologist's to render a definite diagnosis. Inadequate clinical information was defined as the pathologists need for additional clinical information before a diagnosis is rendered,

regardless of the amount of information already present on the request forms.

Provisional clinical diagnosis/ differential diagnosis is not to bias the pathologists' mind rather know the surgeon mind and answer their questions regarding patients presentation. Information regarding the type of surgery allows the pathologist to choose an appropriate technique of grossing the specimen.

Test Request Details

Knowledge of the test required directs the sample to the concerned laboratory department. Requesting date doesn't have any clinical significance rather it acts as a check for Turn-around Time for reports which is a quality indicator. Timeline category for reporting allows prioritization of sample processing.

Physician Details

Details of requesting clinical unit and the physician details such as name and contact number will allow getting additional information easily and also to convey any urgent results.

Various studies from different regions have been reported to show deficiencies in filling up the request forms for various investigations^{5,6,7,8}. Despite numerous data elements on the request forms, clinical data were the most discussed in many studies. There are only limited studies available in regard to completion of histopathology request forms in the recent period, kindled us to do an analysis of the level of completion of histopathology request forms submitted in our laboratory.

In our study, only 12.2% of forms were fully completed which is higher than similar studies done by Olufemi et al, Jegede F et al with 1.3%, 9.4% respectively and Makubi et al showing 100% lack of fully completed information^{9,10,11}. This wide variation in the results of various studies could be due to deficiency/ implementation of strict hospital/ laboratory policies. The pulse of any laboratory request forms lie on the clinical information data which was completed in 94.7% of forms in our study, which was corroborated well with similar studies done by Burton et al., Nakhleb and Zarbo et

al., Kansay S et al with 93.9%, 97.6%, 96.8% respectively^{12,13,14}.

The other data parameters on request forms were analyzed as well and found concordant with previous similar studies done by Makubi et al and Adegoke et al.^{11,15}. [Table 5]

Table 5 Comparison of rate of completion of various parameters in the request forms

	Our study(%)	Makubi et al(%) ¹¹	Adegoke et al(%) ¹⁵
Patient name	100	100	-
Age	98.3	93	87
Sex	98.3	93	87
OP/IP number	100	97	95.4
Physician name	38.5	-	-
Signature	100	92.3	96

In our study, 10.2% of specimens were received in normal saline instead of formalin and 15% of the specimen were received in the inappropriately sized container. These results were corroborated with a similar study done by Akinfenwa et al with 20% specimens received with no fixative and 16.5% samples received in the inappropriate container¹⁶.

Conclusion

This study shows that patient clinical information and physician details were inadequately filled in our setting. Inadequately filled request forms may cause redundancy in laboratory services and may cause a delay in diagnosis while trying to retrieve such omitted information. There is a need to create awareness of the importance of appropriate legible filling of request forms among in-house surgeons and referring physician as well as to ensure prompt fixation of specimen and transportation. They can be encouraged to use self-inking stamps for physician identification. Regarding clinical data, the histopathology request forms may be reviewed and redesigned to allow physicians to fill the forms without omitting significant history.

Key Message

Inadequate filling of histopathology request forms can limit the advice of pathologists when

interpreting the results, hence regular audit on completeness of histopathology request forms by every laboratory acts as a quality check and also helps providing feedback loop for requesting physician which can be communicated them during interdepartmental meeting.

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