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Evaluation of Laboratory Request Forms Submitted to the Medical Laboratory Department at A Hospital in Northcentral Nigeria

Adesegun Elisha & Prof. C.S.S. Bello

Department of Medical Microbiology and Parasitology, Bingham University College of Medicine and Allied Medical Sciences

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***Corresponding author:** Prof. C.S.S. Bello

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Abstract **Original Research Article**

Laboratory forms are necessary for medical practitioners to communicate their requests and run a diagnosis in the laboratory. Laboratory request forms also serve as the communication medium between the requesting practitioner and the laboratory or the pathologist. Errors or inadequate information on laboratory forms can lead to a significant impact on the total quality of the result as well as the patient outcome. Therefore, laboratory forms must be properly filled out by the requesting practitioner for effective communication. Unfortunately, our experience in the laboratory shows otherwise, and there is a paucity of data to support our daily observation in this center. This is the main justification for this research. The purpose of this research is to examine the extent to which practitioners at Bingham University Teaching Hospital adequately complete laboratory forms submitted to the medical microbiology laboratory unit of the hospital.

Methods: All laboratory forms submitted along with specimens at the laboratory were examined for completeness by the requesting practitioner. Four major domains consist of the patients' identifiers, test request details, laboratory information, and the requesting practitioner's details. A total of 1,043, consisting of total laboratory requests between January 1st, 2022, and December 31st, 2024.

Results: A total of 1043 completed and submitted to the medical microbiology and parasitology laboratory for laboratory tests were evaluated. All the 1043 laboratory request forms had the patient's name fully completed. The completion rate for other variables is as follows. Age 93%, gender 93.4%, ward/unit 88%, specimen 85%, hospital number 85%, provisional diagnosis 82%, physician name/signature 92%, Specimen date 96%, time of specimen collection 0%.

Conclusion: Except for the patients' names, all variables were sub-optimally completed with particular concern for specimen time, a parameter that is extremely important for microbiology specimens. Like the common saying 'garbage in garbage out', the need for an accurate and complete completion of laboratory request forms cannot be overemphasized. These findings elucidate the need for effective and continuous quality control mechanisms in our hospitals.

Keywords: Laboratory Request Forms, Physician Request, Laboratory.

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INTRODUCTION

Laboratory request forms (LRFs) are essential communication tools between healthcare providers and laboratory personnel. They ensure that the correct tests are performed and that accurate results are communicated back to the requesting physician. Inadequate completion of LRFs can lead to errors, delays in diagnosis, and suboptimal patient outcomes (Jegede, F., & Mbah, H., 2016)

Several studies have highlighted the importance of adequately completing LRFs. A study conducted in Northwest Nigeria by Jegede et al. (2016) found that the level of completion of LRFs was suboptimal, with significant gaps in patient identifiers, test request details, and physician details. This underscores the need for improved training and communication between laboratory and clinical staff. Their study found that patient names were completed in 100% of the cases, whereas full physician information was provided only in 63.5%. Similar research conducted by Adegoke et al. (2011) at Obafemi Awolowo University, Ile Ife, Southwest Nigeria, found that the patient's name was the only data recorded all the time. Other variables such as the time of specimens' collection (36.5% of the time), date of birth of the patient (86.4%), working diagnosis (93.2%), and name of physician (93.2%), were not filled. At the University of

Lagos Teaching Hospital, Oyedeji et al. (2015) found that only 1.3% of the 7,841 laboratory forms were fully and adequately completed by the requisition physicians, with patients' names, physician names, and gender as the most completed variables. Other information, such as patients' age (68.0%), request date (88.2%), provisional diagnosis (65.9%), and patients' full address (5.6%) were inadequately completed.

RESULTS

Table 1: *Percentage of fully completed laboratory request forms submitted to the medical microbiology and parasitology laboratory at the Bingham University Teaching Hospital, Jos*

Variables	**N of fully completed**	**Percentage of fully completed**
Name	1043	100
Age	969	93
Gender	975	93.4
Ward/Unit	920	88
Specimen	891	85
Hospital #	992	95
Provisional Diagnosis	853	82
Name/signature of the Doctor	963	92
Date of Specimen	1000	96%
Time of specimen	No space for time	0%

DISCUSSION

This research aims to evaluate the completeness or otherwise of laboratory request forms submitted to the Medical Microbiology department of Bingham University Teaching Hospital Jos, between January 1st, 2023, and December 31st, 2024, with the overarching aim of using the data obtained for quality improvement.

The result indicates that only the patients' name is fully completed by the physician in all the 1043 samples examined. Our form does not have space for specimen collection time. As shown on Table 1 above, patient age and gender all have over 90% completion rate. Hospital numbers, the ordering physician name, and the signature also were completed over 90% of the time. Variables such as the ward or unit where the sample came from, the type of specimen, and the provisional diagnosis were completed about 80% of the time.

Our findings compared favorably with other centers. For example, Jegede et al. (2016) in Northwest Nigeria found significant gaps in patient identifiers, test request details, and physician details, with patient names completed 100% of the time but full physician information only 63.5%. At Obafemi Awolowo University, Adegoke et al. (2011) observed that only patient names were consistently recorded, while other data such as specimen collection time (36.5%) and physician names (93.2%) lacked completeness. Oyedeji et al. (2015) at the University of Lagos Teaching Hospital reported that only 1.3% of 7,841 forms were fully completed, with patients' names, physician names, and gender being the most frequently filled fields. These findings align well with our finding indicating a national issue that must be addressed as a matter of urgency. It must be mentioned that our finding contrasts with others in the areas of Time of Specimens collection. That selection is completely missing on our laboratory request forms.

Implication for Practice

Incomplete LRFs can directly impact patient care. Errors

in the total testing process, including pre-analytical errors such as incomplete LRFs, account for a significant proportion of diagnostic errors. These errors can lead to incorrect or delayed diagnoses, which in turn can affect patient outcomes and increase staff workload with significant financial implications for both the patients and the hospital. There could be some legal consequences for both the physicians and the hospital as well. Our finding is a call to hospital management to start quality improvement training and benchmarking with other Teaching Hospitals.

Limitations

This study is limited in scope and application because it was restricted to the Medical Microbiology laboratory. Other laboratories were not included in the study, which may affect the general application of these findings. Another limitation is that the reasons for physicians' failure to complete the forms were not explored. Therefore, mixed method research is suggested for further exploration of the underlined reasons for the failures to complete the forms as required.

Conclusion and Recommendation

Completing laboratory request forms is crucial for ensuring accurate and timely diagnostic testing. This seems not to be the practice in most centers in Nigeria as indicated by our findings by other researchers across the country. Healthcare organizations should invest in training, communication, and electronic systems to improve the quality of LRFs and ultimately enhance patient care. The introduction of electronic laboratory request forms has been shown to improve the completeness and accuracy of LRFs.

Regular audits of LRFs can help identify areas for improvement and ensure that forms are completed adequately.

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