Evaluation of request forms submitted to Haematology Laboratory in a Rural Tertiary Hospital in South-South Nigeria

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Abstract

Objective: *To evaluate the level of completeness of information on laboratory request forms at Irrua Specialist Teaching Hospital, Irrua.*

Method*: 4,500 laboratory request forms sent to the haematology department of Irrua Specialist Teaching Hospital, Irrua, within 7 months period were analyzed for specific parameters. The information provided on each request form was recorded in a spreadsheet and analyzed.*

Results*: Information mostly omitted were patients' age (58.02%), physician's name and signature 67.80% each of the request forms sampled.*

Complete documentation was observed in patients' names and investigation requested. Accurate recording of ward/clinic of patients was observed on 90.23% of the forms analyzed with hospital number, clinical details and consultant name appearing on 79.45%, 79.01% and 93.52% respectively. The date was observed in about 93.74% of the request forms audited and 80.66% showed eligible handwriting.

Conclusion*: This study showed that the pattern of completing request forms was poor. Vital information needed on the forms was missing. Inadequate information on laboratory request forms can lead to misinterpretation of laboratory results which inturn lead to misdiagnosis of patient's disease condition.*

Emphasis on the importance of adequate and completeness of data on laboratory request test form is strongly supported and periodic orientation should be given to the physician especially the newly inducted doctors by the laboratory personnel.

Introduction

Quality assurance is a wide ranging concept covering on matters that individually or collectively influence the quality of a product. It is a system of continuously improving reliability, efficiency and utilization of products and services.[1] It sets to improve the quality of health care, generate reliable and reproducible results and establish the credibility of the laboratory among doctors and the public at large.[1]

There are three components involved in laboratory quality assurance systems; these are; pre-analytical, analytical and post-analytical. Evaluation of result forms is a pre-analytical

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No conflicts of interest have been declared by the authors

component of quality assurance. Errors may occur during this pre-analytical phase which may lead to misidentification of clinical samples, difficulty in interpretation of laboratory results among many others.

Several studies have shown that most laboratory request forms sent to the laboratory are devoid of clinical details.[2][3] This is said to impact negatively on patient's outcome.[4] In a study conducted in South Africa, it was shown that laboratory results influence up to 70% of medical diagnoses.[2]

In a study conducted in Italy, it was shown that 61.9% of laboratory errors were due to pre-analytical errors while analytical and post-analytical errors account for 15% and 23.1% respectively.[4]

Laboratories have long focused their attention on the analytical aspect of quality control. However evidence accumulated recently showed that quality in laboratories cannot be assumed by merely focusing on the analytical aspect only.

These observations and paucity of reports on pre-analytical errors in Nigeria health institutions, informed this study, which focused on evaluating the laboratory request forms at a rural specialist teaching hospital in southern Nigeria.

Materials and Methods

This study was conducted in Irrua Specialist Teaching Hospital, Irrua, Nigeria. The hospital is located along Benin-Auchi expressway in Edo state. It serves as a referral centre for Edo state and other surrounding states of Delta, Ondo and Kogi states.

A total of 4,500 laboratory request forms sent to the Haematology department of Irrua Specialist Teaching Hospital within a 7- month period were analysed for completeness of information given.

Data Collection

Four thousand five hundred request forms submitted to the Haematology department between January and August 2013 were retrieved and studied. The information provided on each request form was recorded in a spreadsheet and evaluated using SPSS version 16.1. Patient confidentiality was maintained.

A frequency distribution table was created to summarize the data. Data collected is shown in table 1.

Table 1: Parameters on laboratory result forms. n = 4,50

Parameter	Numbers well written	Percentage (%)
Surname	4,500	100
Other name	4,500	100
Age	2,611	58.02
Sex	4,356	96.80
Ward/Clinic	4,060	90.23
Hospital Number	3,575	79.45
Clinical details	3,556	79.01
Consultant in charge	4,208	93.52
Physician's name	3,051	67.80
Signature	3,051	67.80
Date	4,218	93.74
Investigation required	4,500	100
Legible handwriting	3,630	80.66

Results

A total of 4,500 request forms were reviewed. The results are summarized in table 1.

Patient's information

All the forms recorded patient's names whereas 2,611 (58.02%) had age and 4,356 (96.80%) had gender. Hospital number was present on 3,575 (79.45%) of the laboratory request forms. About 93.74% of the laboratory forms showed dates and 90.23% of the laboratory forms recorded ward/clinic.

Clinician information

The consultant in charge was stated in 4,208 (93.52%) forms, Doctor's name and signature were equally stated in 3,051(67.80%) forms. Clinical details and investigation requested were recorded in 3,556 (79.01%) and 4,500 (100%) respectively.

Only 80.66% of the analyzed request forms showed legible handwriting.

Discussion

Laboratory errors are of utmost importance as laboratory data influences 70% of medical diagnoses and can significantly impact on the cost and outcome of patient's treatment (Plebani and Carraro).[7] In this study, we evaluated the level of completeness of information in laboratory request forms.

Our study revealed that patient's name and investigation requested were documented in all the laboratory forms analyzed. This is similar to the work done by Adegoke et al[7], Olayemi et al[8] and Burton and Stephenson[9]. This finding was not surprising because for receipts to be generated at the pay points, the name and the test requested are required and more so, request forms without names and test requested for will be turned down by the laboratory personnel.

Hospital numbers was not documented in 20.55% of the laboratory forms analyzed. This was lower than the work done by Adegoke[10], where 44% was omitted. In instances where samples from different subjects have the same names, information such as hospital number is used in identifying and sorting out both subject and sample.

Patient's ward/clinic was not stated in 9.77% of the laboratory forms analyzed. This work is similar to the work done by Adegoke et al[10] and Nutt et al[5] in South Africa in 2008[5]. Delivery of results from the laboratory to various wards/clinics may experience some delay by the omission of this vital information on the laboratory request form.

Demographic details like age was not stated in 41.98% of the request forms. This is higher than figures 5.8% and 25.8% respectively obtained by Pakisten[8] and Edeghonghon et al[6]. Gender was not stated in 3.2% of the request forms analysed. This was lower from the work done by Edeghonghon et al[6] and Pakisten[11] but slightly higher than that done by Bankole et al[9], who demonstrated 1.1% not documented.

The reference values for some tests such as haemoglobin concentration, red cell count, reticulocyte count, Erythrocyte Sedimentation Rate (ESR) etc vary with gender and age, underlining the need for their inclusion in laboratory request forms.

No clinical detail was provided in 22.7% of the request forms sampled. This is similar to the work done by Edeghonghon et al[6] and Nutt et al.[5] Information regarding date of collection of sample was absent in 6.26%. this error rate is similar to previously reported work done by Bankole et al[9] who demonstrated 5.6% of requested forms with omitted dates of collection of specimen. Absence of clinical details often leads to difficulty in interpreting results available.

Most clinicians 67.80% signed the request forms. However similar percentage indicated their names. The consultant in charge was stated in about 93.52% of the request forms

sampled. This acts as an impediment in trying to convey back to the requesting clinician if the name of the consultant in-charge is not stated on the request forms.

The observed frequency of legible handwriting in our study was 80.66%. This is similar to the work done by Adegoke et al[3]. This value is below that obtained by Chawla and Mallika (2010)[10], who clearly demonstrated 0.1% of the forms were not legible.

Conclusion

In conclusion, this study showed that patient's names and investigation requested was observed on all the forms sampled. Patient's age, physician's signature and physician's name were mostly omitted in forms audited. Clinical details of patients and hospital numbers were also absent at an appreciable number of the sampled request forms.

We recommend that medical house officers and other physicians should be adequately exposed to the laboratory since incomplete data on request forms can lead to mis-diagnosis of patient's disease conditions. From our study, it is advocated that emphasis should be placed on proper completeness of request test forms since this affects the laboratory diagnosis of the patient.

Acknowledgements

We acknowledge with thanks the laboratory scientists and ethical committee of Irrua Specialist Teaching Hospital, Irrua, for their support and permission to carry out this study.

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