

ADDIS ABEBA UNIVERSITY MEDICAL FACULTY DEPARTMENT OF RADIOLOGY

An Audit of Completion of Ultrasound Request form at BLH

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Paper submitted to the Department of Radiology, Addis Ababa University Faculty of

Medicine, for the partial fulfillment of specialty certificate in Radiology, November 2014

Acknowledgement

I would like to express my deepest gratitude to my advisor Dr. Tesfaye Kebede and Dr. SeifuTeferi, consultant, in the department of radiology, faculty of medicine, AAU, who helped me in all aspects of the development of the research paper to its final form including topic selection and research proposal development.

Finally I would like to extend my gratitude to friends and colleagues who helped and encouraged me from beginning to the end of this research.

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Abstract

Objective: To audit the adequacy of completion of ultrasound request forms referred to the radiology department from the different wards /OPD of the hospital

Design: Cross-sectional study

Place and duration of study: Diagnostic Radiology Department of Addis Ababa University of medical faculty, from October 15, 2014 to October 30, 2012.

Methods: A total of 218 ultrasound request form in study period were analyzed for completion using a blind ended questioner. The data were cleaned and entered in to SPSS-20 software package. Frequency and percentage were used for this categorical variable.

Result: A total of 218 ultrasound requests forms were reviewed. All of them had the names of the patients filled, 218 (100%) and almost all had their father name filled except 5(2.3%). Only 168 (77.7%) of them had their ages filled, and 164 of 218 (75.2%) had their sex filled (Table-1). One hundred and eighty nine (86.7%) had hospital number while, 29(13.3%) did not have information regarding hospital number. Detailed clinical data were filled in 184 (84.4%), and not mentioned at all in 34(15.6%) of them. Although 83.3% (181/218) of them had mentioned the requesting physician name, only 8 (3.7%) and 6 (2.8%) filled the relevant laboratory information and previous data respectively

Conclusion: We conclude that radiological investigation forms are still incompletely and inadequately filled. This will have effect on the quality and the overall service provided by the radiologist and may have effect sometimes on clinical decisions and outcomes. There is need to encourage the managing clinician to complete and adequately fill all the required information into the request form and appreciate its importance to patient's management. This can be achieved by increasing the awareness of referring clinicians through repeated continue medical

education in conjunction with the radiologists and the need for a regular clinical-radiological meetings.

Introduction

Good communication between patients, radiologists and referring physicians is a vital aspect of optimal health care. Without smooth information flow, even the latest technological innovations in medicine may be useless. This need can be most exemplified in requesting radiology exams. For example, if there is a lack of proper communication in the form of inadequate clinical history of the patient, then the radiologist may perform an unnecessary procedure or perform the inappropriate procedure. Inadequate communication can also lead to a decrease in quality of care for the patient. A detailed and thorough radiology report is a vital component of the communication between the radiologist and the ordering physician providing vital information to the ordering physician for the proper treatment of the patient.

The role of the radiologist in a medical team is to help in making a diagnosis that will aid in an effective and concise management of the patient. This can only be achieved if the clinicians give a detailed clinical history through a properly filled request form. Beside the usefulness of a radiological examination can be reduced if the clinical background and the specific problem to be answered is not provided with the request. Inadequate information can also lead to mistakes in patient identification and delay in returning reports to the correct destination, and can reduce the value of the report.

A radiology request is a clinical document completed by a licensed physician stating what procedure or examination is desired. This document contains what examination needs to be done, why the examination needs to be conducted, and on whom the examination will be performed. Also, inherent in the radiology request form is the clinical question that needs to be answered. The clinical question can come in many forms such as: "What is the cause of fever and leukocytosis in this patient?" or "Is this tumor malignant or benign?" or "Is there a fracture?"

Though this question is not always explicitly stated, it is important that the radiologist knows and identifies the clinical question inherent in the request form.

All request forms have clearly marked fields, for ease of completion by the requesting physician as well as ample space for pertinent clinical history. The request form must be completely filled out for the examination to be conducted. The standard is that all request forms received should contain the patient's name, age, address, telephone number, ward, clinical background, the specific question to be answered, examination to be Conducted, the name and signature of referring clinician and the name of the consultant responsible for patient's care.

Previous reports have shown that up to 20% of radiographic examinations are clinically unhelpful either due to inappropriate or wrong request (6). Thus to improve the radiological support and utilization there is need for adequately and relevant details of the radiological request.

Literature review

On one study done in the radiology department of a Nigerian specialist hospital in 2009 to audit x ray request forms the result showed that there were 138 (95.2%) CT scan and 7 (4.8%) MRI requested. Only the surname and examination requested were filled in all cases. About 95.8% of the addresses were not filled. Although patients' ages were provided in 90.3% of cases, 74 (57.0%) of them were only written as figures. Though clinical history was given in almost all patients, only 26 (18.2%) were detailed. Abbreviations which are not universally acceptable were used in all the forms. The study findings revealed that, radiological request forms are often inadequately filled. It is important that clinicians be educated on the value of correctly filling request forms.

In another study in Nigeria specialist hospital on an audit of completion of radiologic request form; two hundred and two request forms were analyzed. All the request had names on it however 89.1% had complete and adequate information while 10.9% have incomplete and inadequate information on names, one hundred and ninety-six (97%) had dates while, 6(3%) did not have information regarding date of request, space for the addresses were filled in 80 (39.6%) out of which only 24 (11.9%) had adequate and complete information. Clinical information were adequate and complete in 34.4%, only 6(8.3%) of those with previous x-rays submitted their previous film with the new request.

Similar study done in Scottish Livingstone Hospital done between 16 March to 30 May 2013 to assess the completeness of filling of the forms, details of biodata/clinical information, previous exposure and information about the requesting officer showed two hundred and two request forms were analyzed. All the request had names on it however 89.1% had complete and adequate information while 10.9% have incomplete and inadequate information on names, one hundred

and ninety-six (97%) had dates while, 6(3%) did not have information regarding date of request, space for the addresses were filled in 80 (39.6%) out of which only 24 (11.9%) had adequate and complete information. Clinical information were adequate and complete in 34.4%, only 6(8.3%) of those with previous x-rays submitted their previous film with the new request.

A study done on radiology request forms in 2004 in St, Luke's hospital, Malta showed that only 4% of the 200 request forms reviewed were completed in full. The percentages of the various fields completed were: patients name and surname – 100% patient's full address – 77%; patient's age – 29%; referring ward – 95% referring physician's signature – 100%; referring doctor's name and surname – 34%; name of responsible consultant – 91%; question to be answered – 25%. The patient's clinical background field was filled in 93%. However,these weremore often than not incomplete and unable to fulfill their purpose. The study concluded that there is ample room for change in local practice (2).

This proposal is intended to assess the radiological request forms for ultrasound in Black Lion University Hospital Radiology department that are requested from the different departments and help to identify gaps in the awareness of the necessity of proper fillings of the forms for the reporting radiologist.

Objectives

General

To audit the adequacy of completion of ultrasound request forms referred to the radiology department from the different wards /OPD of the hospital

Specific

To see whether the forms were properly filled or not

To compare the results with the available study done in another hospital and with the expected 100%

Methodology

Study design: Cross sectional study

Study population

All ultrasound request forms during the study period

Study period

From October 15, 2014- October 30, 2014

Sampling technique and size

All ultrasound request forms that came to the radiology department between October 15, 2014 and October 30, 2014 were assessed and findings were filled on a standardized questionnaire prepared by the investigator. The sample size corresponded to the total number of ultrasound requests during the study period.

Data collection

Standard questioners were prepared

Radiographers working at the sonographic unit were trained by principal investigator how to fill the questioner

The principal investigator followed the activity till it ended.

Statistical analysis

The collected data were checked for completeness, coded, entered in to SPSS version 20 statistical software packages, cleaned and analyzed by principal investigator

Frequency and percentage were used for categorical variables

Hundred percent of proper fillings for all the variables is the expected outcome, hence for validity of calculations, the research question to be answered was set as whether 99.9% of the forms well properly filled or not.

Ethical consideration

The study was reviewed and approved by the department of radiology at Black Lion University Hospital.

Result:

A total of 218 ultrasound requests forms were reviewed. All the request forms received were incompletely filled. All of them had the names of the patients filled, 218 (100%) and almost all had their father name filled except 5(2.3%). Only 168 (77.7%) of them had their ages filled, and 164 of 218 (75.2%) had their sex filled (Table-1). One hundred and eighty nine (86.7%) had hospital number while, 29(13.3%) did not have information regarding hospital number.

Table-1 Demographic data (population n=218)

Variable	Total	yes	%	No	%
Name	218	218	100%		
Father name	218	213	97.7%	5	2.3%
Age	218	168	77.1%	50	22.9%
Sex	218	164	75.2%	54	24.8%
Hospital number	218	189	86.7%	29	13.3%

The date of examination was not filled for 8 (3.7%) patients. Requested body part was mentioned in almost all except 12/218 (5.5%). Patient status was filled in 195; 175(80.3%) were ambulatory and 20 (9.2%) were bed patient. (Table-2)

Detailed clinical data were filled in 184 (84.4%), and not mentioned at all in 34(15.6%) of them. Although 83.3% (181/218) of them had mentioned the requesting physician name, only 8 (3.7%) and 6 (2.8%) filled the relevant laboratory information and previous data respectively. (Table-3)

Table-2 Additional information

Variable	Total	Yes	%	No	%
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Date of exam	218	210	96.3%	8	3.7%
Request body	218	206	94.5%	12	5.5%
Clinical date	218	184	84.8%	34	15.6%
Lab info.	218	8	3.7%	210	96.3%
Requesting Physician	218	181	83.3%	37	17.7%
Previous data	218	6	2.8%	212	97.2%
Patient status	Not mentioned	23(10.6%)			
	Ambulatory	175(80.3%)			
	Bed patient	20(9.2%)			

Discussion:

The radiology request cards are usually the only means of communication between a clinician and the radiologist; since there is little opportunity to discuss clinical cases and their management by both parties. However, additional information can be obtained by the radiologist directly from the patient or by contacting the clinician. The best possible service is provided to the patient only if a multidisciplinary approach is adopted by the various teams involved in the management. It must be stated that inadequate request form filling is a worldwide problem.

There is evidence that inadequate clinical information is associated with increased level of inaccurate report; while accurate clinical information is more likely to assist the radiologist in constructing a report which will in turn help the referring doctor with the management of the patient.

In our study the demographic data and clinical information that is supposed to guide the radiologist on some disease condition regarding reporting of the radiological investigation are defective and this will pose difficulties for radiologists while trying to write the report. It would also make it almost impossible for them to address the question/s posed by the referring doctor, an important suggestion that has been raised by the Royal College of Radiologist. These biodata tends to serve as a guide for radiologists to decide the appropriate radiological investigations and to avoid unnecessary examinations.

In our study the names and father names were almost completely filled as against findings by Depasquale and Crockford who claimed that only 4% of forms were fully filled while in our study about 98.5% have adequate and complete information regarding names of patient. About 94.5% of the request forms had part of the body requested for, as against 68.8% Aflobi O.A and 84.8% had clinical information on requested form more than Cohen *et al*,¹² where clinical

indication provided in only 71%. The age and sex were described in 77.1% and 75.2% respectively as compared to Aflobi O.A where only 44.1% of the request form had the age. The requesting physician name were provided in 83.3% of the request form, and this finding was comparable to Cohen et al, (6) where the medical officer's names were provided in 86% cases.

Previous study have shown that inadequate clinical information is associated with increased level of inaccurate report; however if it is adequate and accurate the radiologist report are better which indirectly affects positively patient's management and the need to ask specific questions and to provide full clinical details to aid radiological diagnosis. Subsequently, the final differential diagnosis is reached by combining the radiological findings with the clinical picture.

Conclusion

I conclude that radiological investigation forms are still incompletely and inadequately filled. This will have effect on the quality and the overall service provided by the radiologist and may have effect sometimes on clinical decisions and outcomes. There is need to encourage the managing clinician to complete and adequately fill all the required information into the request form and appreciate its importance to patient's management. This can be achieved by increasing the awareness of referring clinicians through repeated continue medical education in conjunction with the radiologists and the need for a regular clinical-radiological meetings.

Recommendations:

Hold meetings with individual clinical firms to discuss the findings of this audit, and the requirements of the Department of Radiology.

To design and provide a radiologic request form with a view to obtaining all the information required.

Using electronic ordering system which reduces the amount of time and paper wasted and increase the efficiency of the requesting process.

In specific cases send back individual forms which are incomplete and check the patient's notes to confirm the reason for the request

Reference:

1. University of Virginia. The Radiology Request and Report. The Radiology request and report website, 2004.
2. Ruben Depasaquale, Malcolm P. Crockford. Are radiology request forms adequately filled in? An audit assessing local practice 2004, 36-38
3. R Akinola, M Akinkunmi, K Wright, O Orogbemi. Radiology request forms: are they adequately filled by clinicians?. The Internet Journal of Radiology. 2009 Volume 12 Number 1.
4. AUDIT OF COMPLETION OF RADIOLOGY REQUEST FORM IN A NIGERIAN SPECIALIST HOSPITAL O.A. Afolabi¹, J.O. Fadare² and E.M. Essien³

Annex

Questionnaire on Radiological request information sheet

1. Name: Yes: No:
2. Father's name Yes: No:
3. Age: Yes: No:
4. Sex: Yes: No:
5. Requested body part: Yes: No:
6. Hospital number: Yes: No:
7. Status of the patient: Ambulatory: Bed: Not mentioned:
8. Date of examination requested: Yes: No:
9. Clinical diagnosis: Yes: No:
10. Relevant lab information: Yes: No:
11. Requesting physician: Yes: No:
12. Previous data on scanning: Yes: No: