

## An Audit of the completion of Radiology Request Form in Soba University Hospital (SUH) “are they appropriately filled in

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**Abstract:** Aims: Although radiology request forms are essential communication tools, their significance is extremely underestimated. We set out to evaluate the adequacy of completion of radiology request forms, and to assess adequacy of the current request form purposed for radiological investigations.

**Methods:** All request forms received during the audit period (1- working week) by the radiology department from 7:30 am to 3:00 pm were reviewed. For each request, blank/inadequately filled field got zero, and adequately filled field got one. This study was supervised by two directors, a Radiologist as a direct supervisor and SOBA's secretary of research and audit office as an audit professional.

**Results:** Total number of 216 requests were assessed and all were not adequately completed. The most frequently missed data were Referrer contact number and record number which were missed in 100%. Last menstrual period missed in 99.1% of female patient. Patient's name, age and Gender were missed in (1.8%, 18.8% and 26%) respectively. Clinical background and diagnosis were not given in 18.1% and 33.8% of requests respectively.

On bivariate analysis there was a significant correlation between referrer doctor name which was missed in 47.5 % of forms and the following data: Clinical problem, clinical diagnosis, previous radiology, and ward, date of the request, gender and age of the patient.

**Conclusions:** Radiology request form need to be modified to include more specific data and on the next phase of the audit effort is needed to impose writing referrer doctor name. The audit team should inform hospital's manager and medical staff in order to increase the awareness about adequate completion of the radiology request form.

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### I. Introduction

Radiology studies are important in establishing the diagnosis, screening patients and follow up response to treatment. AS many clinical condition look alike, this remain true for radiological studies. The descriptive appearance for the abnormalities can be pinned down to the most likely differential diagnosis by clinical data. Radiologists should be thought of as a part of multi-disciplinary teams, they help other clinicians reaching the diagnosis and, since the introduction of interventional radiology, they managed to provide treatment for different conditions.

The common misconception about the role of Radiologists – they are here just to perform investigations ordered by practitioners/specialists – has to change, responsibility for justification of an exposure lies with a radiological practitioner. This is usually the radiologist, who may only justify an exposure if sufficient relevant clinical information has been provided on the request form.

So, to achieve this goal, it is important to supply Radiologists/Radiographers with adequately completed request forms. A Radiology Request Form is a clinical document filled by licensed healthcare professionals. Though, it is an essential communication tool, its importance is highly underestimated. The Royal College of Radiologists in its referral guidelines (iRefer) assertively proposed that radiology request forms have to be adequately and legibly filled, thus avoiding any misunderstandings that may arise. Referrers should also declare the reasons behind their referral to enable the Radiologists/Radiographers to understand the clinical problem that they need to address.<sup>1-4</sup>

Ionising Radiation (Medical Exposure) Regulations (IRMER) 2000 state in Section 8,6,1 that: “Regulation 5(5) requires the referrer to supply the practitioner with sufficient medical data relevant to the medical exposure requested to enable the practitioner to decide whether the exposure can be justified. Regulation 6(4) requires the practitioner to consider the data provided by the referrer before justifying a medical exposure”.<sup>5</sup>

Inadequately filled requests consume time of a radiologist in searching or imagining the clinical condition of the patient<sup>6</sup>, and reduce effectiveness of the radiological study, thus reduce the value of the report. Inadequate information can also lead to mistakes in patient identification and delay in returning reports to the correct destination.<sup>7</sup>

There is no standard format for the request forms available, so different hospitals/organizations use their individualized format<sup>3</sup>. In this study we intend to audit for the adequacy of completion of radiology request forms in SOBA University Hospital.

### **Aims**

- To evaluate the adequacy of completion of the current radiology request forms.
- To assess the quality of the content of current request form.

### **Audit Standards**

Radiology request forms should contain all of the following information:

- The clinical background (includes: clinical problem, clinical diagnosis, previous radiology test, and other relevant history);
- The question to be answered;
- The patient’s complete name, age, address and phone number;
- The patient’s location (ward);
- The name and signature of the requesting clinician;
- The name of the consultant looking after the patient.
- Other standards implemented by the hospital: gender (and last menstrual period “LMP” if female); record number; date of request; radiological investigation requested; and referral contact number.

## **II. Material And Methods**

This study is designed to measure the degree of compliance in filling the request forms. A period of one week (working days) was chosen during January as to ensure coverage of variation in the provision of investigation modalities, during that period all request forms received by the radiology department were collected from 7:30 am to 3:00 pm (rush hours).

For each form, fourteen fields were assessed for the presence or absence of adequate information. Blank or inadequately filled field was given a 0 (zero) score, while an adequately filled field was given a score of 1(one). This study was monitored by two directors, a Radiologist as a direct supervisor and SOBA’s secretary of research and audit office as an audit professional.

Some standards (patient’s address, and phone number, the question to be answered, and the consultant’s name) deliberately were not included in the audited data, as no space is allocated in the current request form used at SBOA University hospital.

**Study Design:** Prospective observational study.

**Study Location:** Soba University Hospital is tertiary care teaching hospital located in Khartoum- Sudan.

**Study Duration:** January 2017 to March 2017.

**Sample size:** Total coverage of all request forms during period of the study.

### **Inclusion criteria:**

All radiology request form directed to Department of radiology during period of the study.

### **Exclusion criteria:**

1. Request form in informal headed paper
2. Non radiological request forms
3. Request forms outside the study period.

### **Statistical analysis:**

Data was analyzed using SPSS version 23 (SPSS Inc., Chicago, IL). The level  $P < 0.05$  was considered as the cutoff value or significance.

### III. Result

Total number of 216 requests were assessed, 114 were female (52.8%), and 102 were male requests (47.2%).

All requests were for routine investigations, except 8 requests which were urgent (as SUH is a referral hospital and all requests are for admitted patients).

Among the 216 requests assessed not any request was fully filled. Referrer contact number and record number were missed in all requests, in addition Last menstrual period is also missed in 99.1% and it was written in only one request (Table 1).

The patient' name was missed in 1.8%, the age in 18.8%, the gender in 26%, the ward in 44.4%, and the request date in 5.4%.

The clinical problem was deficient in 18.1%, the clinical diagnosis in 33.8%, and the other relevant field in 78.2%.

The investigation requested was absent in only one request, and the previous radiology in 92.6%.

The referrer doctor name was unwritten in 47.5% of the requests, and the signature in 14%. However on bivariate analysis there was a significant correlation (all with  $P < .05$ ) between referrer doctor name and the following data: Clinical problem, clinical diagnosis, previous radiology, ward, gender and age of the patient and date of the request.

**Table no 1:**Shows percentages and frequencies of missed data in request form.

Item of the request form	Percent of missed information	Frequency of missed data
Name of the investigation requested	0.5%	1
Name of the patient	1.8%	4
Date	5.4%	12
Referrer doctor signature	14%	30
Clinical problem	18.1%	39
Age	18.8%	42
Gender	26%	58
Clinical diagnosis	33.8%	73
Ward	44.4%	96
Referrer name	47.5%	106
Other relevant	78.2%	169
Previous radiology	92.6%	199
Last menstrual period	99.1%	113
Referrer contact number	100%	216
Record number	100%	216

### IV. Discussion

Radiology request form provides information about the patient's clinical problem and inadequately filled requests may reduce the usefulness of radiological examination and put patients on unnecessary risks of repeated exposure. Moreover, the radiologist needs to know the presenting compliance, past medical and surgical history, and the clinical diagnosis in order to use his/her expertise to choose the most appropriate and safe imaging modality and to decide whether the exposure can be justified. However, relevant clinical information was inadequately filled, clinical problem provided in only 82 % of the requests in this study which is lower than similar study, (at 86.9%)<sup>2</sup>. Clinical diagnosis was missed in 33.8 % of the requests studied and other relevant was missed in about 78.2 %.

Despite its importance in considering the possibility of pregnancy Last menstrual period is missed in 99.1% of requests, this finding is close to Akintunde O et al, (88.5%)<sup>2</sup>. In Scally request form pregnancy is a field that should be ticked by the investigator<sup>8</sup>, this might be more appropriate than our existing form where the referrer doctor should write the last menstrual period.

Name of referrer doctor is a mandatory field to assist in communication between the radiologist and manging team. However, we found this category missed in 47.5% of requests and this was the only variable which have significant association with clinical problem, clinical diagnosis, previous radiology, ward, gender and age of the patient and date of the request.

### V. Conclusion

In conclusion, radiological investigation forms are incompletely and inadequately filled. This will have detrimental effects on the quality and safety of the overall service provided by both the radiographer and the radiologist and may have halt clinical decisions and outcomes. There is need to encourage the managing clinician to adequately fill all the required information into the request form and appreciate its importance to patient's management.

Radiology request form need to be modified to include more specific data (pregnancy, diabetes, presence of asthma and previous reaction) and effort is needed to impose writing referrer doctor name. The audit team should inform the hospital manager and heads of the departments about the results of the audit. The audit team should distribute the audit report in the form of a leaflet to the whole medical staff in order to increase the awareness about adequate completion of the radiology request form.

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