



JRRS



**JOURNAL OF
RADIOGRAPHY &
RADIATION
SCIENCES**

OFFICIAL JOURNAL OF THE ASSOCIATION OF RADIOGRAPHERS OF NIGERIA (ARN)

ISSUE 1, VOL 33, MAY 2019/ ISSN:1115-7976

Journal Homepage: www.jarnigeria.com



Audit of Radiology Request Cards in a Tertiary Hospital in NorthWest Nigeria

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Received: 4 February 2019. Received re:revision: 26 April 2019. Accepted: 20 May 2019

ABSTRACT

Background: Radiology request cards are essential communication tools between physicians and radiation personnel. Clinical audit is part of quality assurance that guarantees patient care.

Objective: To assess the adequacy of patient data and clinical information filled in request cards sent to Radiology Department of our facility by referring clinicians.

Material and methods: Four hundred (400) radiology request cards were randomly selected from the records of the department and scrutinized for bio-data/clinical information.

Result: Completely filled request cards were 2/267 (ultrasound), 1/40 (computed tomography) and 2/93 (conventional x-ray).

Conclusion: Consistency in complete filling of radiology request cards in our facility was lacking. The audit revealed actual practice, and the need for improvement.

Keywords: Audit, Radiology, Request card, Completion, patient

Introduction

The radiology request card is an important tool for patient's clinical evaluation and management. It is a useful means of communication between a referring physician and personnel in radiology department. The card is a clinical document that states what investigation is to be done, the professionals to handle it, and the patient involved. However, the import of request cards appears to be underestimated [1, 2]. It is clearly suggested that all cards should be adequately and legibly completed, thus avoiding any misunderstandings that may arise. Referring doctors should also state the reasons behind their referral, thus enabling radiation personnel to understand the clinical problem that they need to address [3, 4].

Radiology has multiple modalities tailored towards different anatomical regions or special investigations. These include conventional x-ray, ultrasound, fluoroscopy, mammography, computed tomography, magnetic resonance imaging, amongst others. In our locality, each radiology department has a few or all of those modalities. In our center, as at the time of study, there were conventional x-ray, ultrasound and

computed tomography. Radiology request cards are therefore directed to the department where they are then sorted out into modality-specific investigations [5]. Previous studies have however, indicated that many radiology requests and radiographic examinations were clinically unhelpful because exams were not justified and cards were inappropriately filled [1, 6, 7].

These findings ignited the curiosity of the researchers as to the practice in AKTH. The outcome will influence recommendations to relevant authority. Physicians will also be guided.

Material and Methods

Ethical approval was obtained from the research ethics committee of AKTH. The audit was retrospective and cross sectional and involved 400 request cards of cases handled between March to September, 2018. The sample size ($n = 400$) was derived using formula [8]. Estimated daily throughput of requests was 30 (x-ray), 15 (Computed tomography) and 80 (ultrasound) giving a total of 125. Armed with this background analysis, stratified sampling technique was used to select 400 request cards over a period of 3 months.

Cards were accessed after documentation at the booking desk. Each card was evaluated for completeness of the fields. A field was considered completed when something was written there. Fields with wrong information were considered as uncompleted. Blank and completed fields were assigned a score of zero and one, respectively. Data capture sheet was used to document details on clinical impression, specific radiological investigation to be done, patient’s name, age, address and telephone number, originating clinic, name and signature of requesting doctor, and name of consultant responsible for the patient’s well-being [4]. A simple calculator was used to analyze data which were categorized based on imaging modalities.

Results

Table 1 shows sample size of patients according to modalities. Tables 2, 3 and 4 represented information on ultrasound, computed tomography and x-ray modalities. Two hundred and sixty-seven (267) ultrasound requests cards were reviewed with only 2 (0.75 %) being adequately filled. Forty (40) CT requests cards were reviewed with only 2.5 % (n = 1) being completely filled. Conventional x-ray had a total of 93 cards with 2.2 % (n = 2) being adequately. Figures i, ii, and iii are bar charts of biodata of patients referred for ultrasound, CT and x-ray.

Table 1. Demographic characteristics

Modalities	n (adults)		Total
	Male	Female	
X-ray	40	53	93
Ultrasound	93	174	267
CT	23	17	40
Total	156	244	40

Discussion

A multi-disciplinary approach to patient management is based on adequate communication between the various team members in order to provide the patient with the best possible services. Radiology request cards are essential communication tools used by doctors referring

patients for radiological investigations [1]. Four hundred request cards were evaluated (ultrasound = 267; x-ray = 93, CT = 40).

Table 2: Statistics on ultrasound request cards

Variables	n	Filling practice (%)	
		Complete	Incomplete
LMP (females)	174	43 (24.7)	131 (75.3)
Consultant	267	217 (81.3)	50 (18.7)
Doctors Name	267	239 (89.5)	28 (10.5)
Exam requested	267	266 (99.6)	1 (0.4)
Clinical details	267	261 (97.8)	6 (2.2)
Date	267	248 (92.9)	19 (7.1)
Signature	267	72 (27)	195 (73)
Ward/Clinic	267	248 (92.9)	19 (7.1)

LMP = Last menstrual period

Table 3: Statistics on CT request cards

Variables	n	Filling practice (%)	
		Complete	Incomplete
LMP (females)	17	2 (11.8)	15 (88.2)
Consultant	40	30 (75.0)	10 (25.0)
Doctor’s name	40	33 (82.5)	7 (17.5)
Exam requested	40	39 (97.5)	1 (2.5)
Clinical details	40	39 (97.5)	1 (2.5)
Date	40	34 (85.0)	6 (15.0)
Signature	40	16 (40.0)	24 (60.0)
Ward/Clinic	40	36 (90.0)	4 (10.0)

LMP=Last menstrual period

Table 4: Clinical information on x-ray request cards

Variables	n	Filling practice (%)	
		Complete	Incomplete
LMP (females)	53	14 (26.4)	39 (73.6)
Consultant	93	86 (92.5)	7 (7.5)
Doctors Name	93	86 (92.5)	7 (7.5)
Exam requested	93	93 (100)	0
Clinical details	93	93(100)	0
Signature	93	89 (95.7)	4 (4.3)
Date	93	22 (23.7)	71 (76.3)
Ward/Clinic	93	90 (96.8)	3 (3.2)

LMP: Last menstrual period

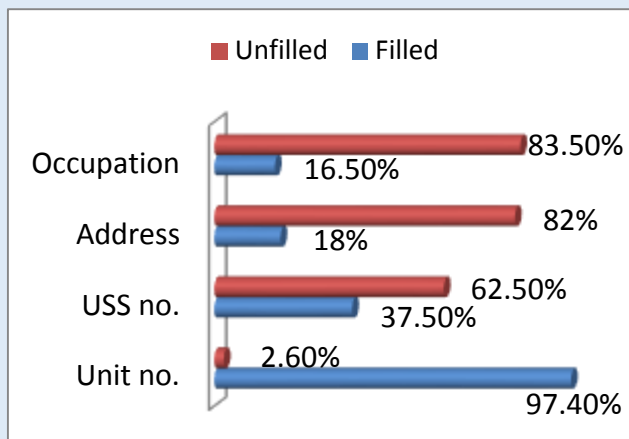


Figure i: Demographics on ultrasound request cards

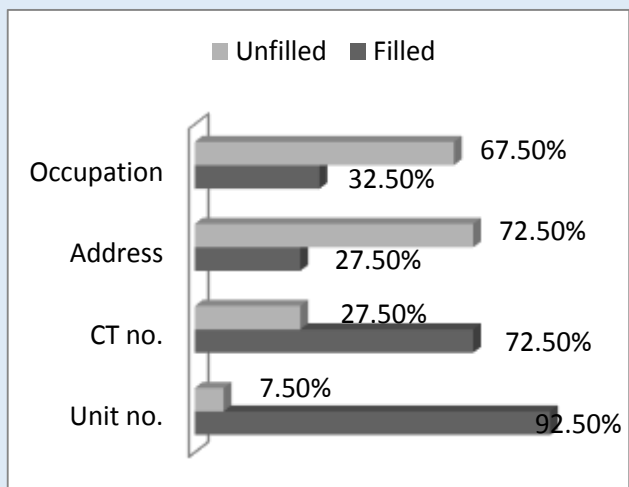


Figure ii: Demographics on CT request cards

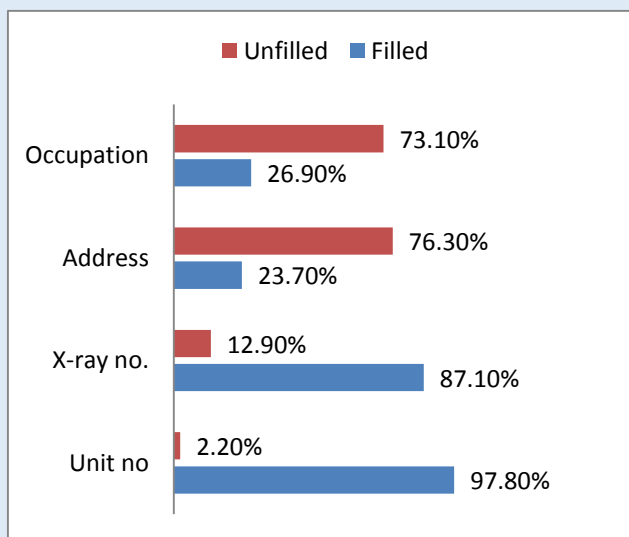


Figure iii: Demographics on x-ray request cards

Findings indicated that of the over eight specific details required on request cards, LMP of female patients and signature of requesting physicians were poorly documented. Other details were haphazardly filled, but a certain degree of consistency was noticed with date, ward, examination requested and clinical details. In the request for x-ray however, there was a sharp twist as almost all required information were given. Infact, examination desired and clinical details were never omitted. Interestingly, as fundamental as name could be for identification, it did not benefit from such consistency, contrary to a work seen in literature [4]. The consequence of inconsistency of names on request cards is the risk of issuing a report to the wrong patient.

In radiographic practice, imaging modalities are programmed specifically for a patient, or for specific genders guided by anthropometric parameters, especially age and BMI. Anthropometric parameters influence technical parameters to be activated and both guide the radiographer on the dose to administer [9]. Age is therefore an important issue to the radiographer when a request card is viewed. Although age was more often than not filled in the forms, it ought to have benefited from consistency. Other studies also shared in our similar experience of some random omissions in age of patients [1, 10].

Information listed on request cards are so important that there should be consistency in their filling. Gender was nearly-always consistent in line with findings from the literature [1], but patients' address was poorly documented. Address is useful in the identification of patient in case of confusion with other patients, location in the survey of a disease condition, and sometimes it is needed for a patient's recall if there is unexpected medical emergency.

Details on last menstrual period (LMP) guide radiation personnel on how to plan protection in cases of cyesis. Amenorrhoea in a woman of reproductive age, as as a matter of precaution, is a sign of gravidity until proven otherwise.

In one study [11], LMP was entered in 11.5 % of cases, which is below 11–26 % found in our study. Knowing who the physician is that referred patient is also important to ease communication in case of feedback. There was high fidelity in that regard in our center (75 – 92 %) but the omissions should be improved upon. Our findings did not deviate significantly from a similar work [1, 4]. In addition to seeing names of physicians on request cards, they ought to authenticate their requests by signing the cards. Our findings show that signature was one of the rarest information supplied (27.0 %) unlike the high degree of consistency (85.86 %) reported by another work [11]. Wards/clinics where patients emanate from guide radiation personnel in taking extra measures to prevent nosocomial infections. Patients with highly contagious and or lethal diseases will more quickly be identified through wards/clinics. This detail was provided as much as possible but not always, in tandem with a similar work [11].

Conclusion

A large number of radiology request cards in our facility had inconsistency in their details. Whereas clinical impression and examination requested were often documented, other equally relevant details had inconsistent documentation. Adequate communication by radiology department to referring clinicians on the appropriateness of filling request forms comprehensively will go a long way in putting radiation personnel at ease, aid faster service delivery and perhaps, a better outcome for patients.

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How to cite: Muhammad A. Khadija, Dambele Y. Musa, Mohammed Hassan, Sidi Mohammed. Audit of Radiology Request Cards in a Tertiary Hospital in NorthWest Nigeria. *J Rad & Radiat Sci*, 2019; 33 (1): 21 – 24