DOI: https://doi.org/10.53350/pjmhs2023172759

ORIGINAL ARTICLE

Are Clinicians Communicating Adequately with Radiologists Through Radiological Requisition? A Clinical Audit Assessing Current Local Practice

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ABSTRACT

Background: To prevent controversy, the request forms were selected to use a method of convenience sampling and also included forms from both inpatient and outpatient different department. The aim of this study whether the different request forms that were submitted to the radiological department and notice that the patients having complete information in each form of different department of radiology.

Study design: This was retrospective and descriptive study. The study was carried out at the department of Radiology, MTI Mardan Medical Complex, Mardan for six months duration from May 2022 to October 2022.

Methods: The total participants request form were 300 which distribute, 85 forms in CT (computated tomography), 105 forms in MRI (magnetic resonance imaging) and 110 forms in US (ultrasound image). The completeness of the data entered by the doctors was examined on the forms to avoid bias.

Results: Our audit information indicate that to analysed 300 request forms were filled out just the name of patients as well as part of examination. The different category of request form included name, age, diagnosis diseases, relevant history and Dr. Name or contact number.

Conclusion: The referring doctors managed to fail to fully and precisely fill out all of the disciplines. To recognize this system and communicate about how it may be done better, we suggest having discussions with radiologists and doctors from different departments.

Keywords: Radiologists, Radiology request form, Adequate.

INTRODUCTION

Radiologists play a significant role in patient safety by evaluating imaging tests and interacting imaging observations to medical doctors. Even though some trying to refer physicians may analysis imaging studies on their own, radiologists' reports have been demonstrated to be more clear and precise, resulting in enhanced patient care, and therefore it is essential that the reports be immediate, reliable, and respond the evaluation questions.[1, 2] For just a healthcare system, such may represent the most significant, commonly available measurements for evaluating the cost of radiology services. But even though starting to learn how to report imaging tests is an essential part of radiology residency skills training, instruction on how to structure a radiology report is oftenly under each hour annually. Often these students rather learn the skills of reporting by shadowing instructors, high ranking residents and collegues.[3, 4] Physician has now become increasingly reliant on imaging techniques, resulting in need for radiologic research performance improvement. Radiologists generally come all over imaging request form that neglect essential data needed for exact clinical evaluation.[5] The imaging report system is proposed as a marking scheme for evaluating the biologically meaningful data embedded in imaging requests. As important measures of quality, three types of data are recommended: perception, examination findings, and the analytic issue. This initiative is designed to enhance the quality of imaging requirements and clinical outcomes treatment. The plethora of facts starting to emerge from standard reporting systems, such as the Breast Imaging Reporting and Data System (BI-RADS) and Liver Imaging Reporting and Data System (LI-RADS), demonstrates the significance of such indicators (LI-RADS). The use of BI-RADS has been observed to communicate effectively between radiologists and going to refer health care professionals, having allowed for constructed analysis and, as a consequence, enhanced care for patients. These formal reporting strategies facilitate radiologists in having provided clear and precise results and scientific proof care management guidelines.[6, 7] Moreover, provided the input and output existence of healthcare professional correspondence, the efficiency of the radiologic question paper requisition is an essential topic that has not yet been deeply acknowledged. Radiology is a medical specialty that is divided into two subspecialties: both diagnostic and interventional radiology. Diagnostic radiologists investigate medical images to identify the source of a patient's condition, evaluate the outcomes of treatment, monitor for common diseases, and afterwards write radiology findings. Interventional radiologists, but at the other hand, have been using radiology photographs to assist methodologies.[8, 9] At the moment, radiologists who explain radiology image data are confined by speed, tiredness, and insight. Due to high expenditures, qualified radiologists are relatively rare. The task of medical image analysis is therefore frequently outsourced by healthcare systems. The patients may suffer harm as a result of diagnostic delays or mistakes. As a result, one solution is for an automated, precise, and effective DL algorithm to handle radiology reporting. X-rays, computed tomography (CT), magnetic resonance imaging (MRI), positron emission tomography (PET), and ultrasound are just a few examples of the various radiology images (US). Its most frequent imaging test worldwide that requires accurate interpretation right away in order to prevent existence illness is chest imaging.[10] The aim of this study whether the different request forms that were submitted to the radiological department and notice that the patients having complete information in each form of different department of radiology.

METHODOLOGY

This was retrospective and descriptive study. The total participants request forms were 300 which included 85 CT (computated tomography), 105 MRI (magnetic resonance imaging) and 110 US (ultrasound image). According to inclusion criteria included: epidemiological research, histological proven diseases and report get in imaging manners. Exclusion criteria: Not imaging report, not English language and not full text form. To observe the completeness of form entry of the following details by DR request. For example; demographical variables such as name, age, sex, previous history, contact number and department and name of the physician request. The approval letter was getting from the hospital ethical board. The information that was gathered and inserted into a worksheet was manually processed.

RESULTS

Our audit information indicate that to analysed 300 request forms were filled out just the name of patients as well as poart of examination. The different category of request form included name, age, diagnosis dieases, relevant history and Dr. Name or contact number.

Table 1: Fill different information of Radiology Application/request forms n=300

Knowledge Base Data	Sufficient data (n=300%)	Insufficient data (n=300%)
Name	300 (100%)	0 (0%)
Age	291 (97%)	9 (3%)
Sex	295 (98%)	5 (2%)
Relevant history	160 (53%)	140 (47%)
Relevant investigation	99 (33%)	201 (67%)
Area of body	250 (83.3%)	50 (17%)
Tentative prognosis	170(57%)	130(43%)
Department	215 (72%)	85 (28%)
Name of DR	30 (10%)	270 (90%)
Contact Number of DR	1(0.3%)	290 (97%)

The total participant request form 300 that none of them completely filled which divided request form included ultrasound image (US) was 110, magnetic resonance imaging (MRI) was 105 and computed tomography (CT) was 85. Mostly observed that two parameters completely filled in the forms such as participants' name 100% and part of examined 100%. The participant's age 97%, sex 98%, relevant history 53% and relevant investigation 33% form were filled. None of the forms contained complete information about the name and contact number of the DR who had filled the request form.

Table 2: Investigate the Application/ request forms of Ultrasound image n=110

Knowledge Base Data	Sufficient data (n=110%)	Insufficient data (n=110%)
Name	110 (100%)	0 (0%)
Age	90 (82%)	20 (18%)
Sex	93 (85%)	17 (15%)
Relevant history	60 (55%)	50 (45%)
Relevant investigation	10 (9%)	100 (91%)
Area of body	62 (56.3%)	48 (44%)
Tentative prognosis	60(55%)	50(45%)
Department	70 (64%)	40 (36%)
Name of DR	93 (85%)	17 (15%)
Contact Number of DR	2 (2%)	108 (98%)

There were 110 ultrasound request forms, which included the participant's bio-data profile. The request forms contained 55% relevant history and 9% relevant investigation. The physician's name and department were present in 85% and 64% of the forms, respectively. According to the above data, the Physician's contact number was 2% incomplete data.

Table 3: Investigate the Application/request forms of Magnetic resonance image n=105

Knowledge Base Data	Sufficient data (n=105%)	Insufficient data (n=105%)
Name	105 (100%)	0 (0%)
Age	95 (90%)	15 (14%)
Sex	92 (88%)	18 (17%)
Relevant history	82 (78%)	28 (27%)
Relevant investigation	12 (11.4%)	98 (93%)
Area of body	100 (95.2%)	10 (10%)
Tentative prognosis	60(57%)	40(38%)
Department	30 (29%)	80 (76.1%)
Name of DR	10 (10%)	100(95%)
Contact Number of DR	0 (0%)	110(100%)

MRI request forms 105 include information such as name, age, sex, and other bio-data profiles. Even though 78% of the forms had relevant history written on them, only 11.4% of the forms had relevant investigations. The physician's name and department were present in 10% and 29% of the forms, respectively. The physician's contact number was not written.

Table 4: Investigate the Application/request forms of Computed tomography n=85

Knowledge Base Data	Sufficient data (n=85%)	Insufficient data (n=85%)
Name	85 (100%)	0 (0%)
Age	81 (95.2%)	4 (5%)
Sex	83 (98%)	2 (2.3%)
Relevant history	55 (65%)	25 (29.4%)
Relevant investigation	11 (13%)	74 (87%)
Area of body	55 (65%)	30 (35.2%)
Tentative prognosis	50(59%)	35(41%)
Department	25 (29.4%)	55 (65%)
Name of DR	61 (72%)	24 (28%)
Contact Number of DR	0 (0%)	85 (100%)

All of the CT scan application form, for example, name 100% and age 95.2% were completely filled out. Relevant history was present in 65% of the forms, and relevant investigations were present in 13% of the forms. The forms appears to lack both of the preceding data, and neither of the forms also included trying to refer doctor's contact information.

DISCUSSION

The radiological requisition form serves as a crucial conduit between the referring physician and the diagnostic imaging doctor, therefore its quality is crucial. Before beginning any treatment, a health professional will quite often choose to have a report to encourage his medical evaluation. The patient therapies should receive could be impeded by a single mistake or inaccurate treatment plan. Only with effective communication between those who are involved in management can the patient receive the best care possible. The results of our audit show that despite the fact that a request form is the only means of interaction between the two doctors, their significance is tremendously underappreciated. A medical form filled by a qualified doctor is called a radiology application. Usually made on a basic radiology request form, the request to a medical radiology department demonstrates an application for a clinical radiologist's opinion. Modern medicine depends heavily on radiology, but many recently graduated physicians and radiologists believe that radiology education in med colleges is often insufficient.[11, 12] The key clinical facets of radiology, including assessing the appropriateness of imaging, comprehending how radiology departments prioritise investigations, comprehending negative challenges and responses, and interacting with the radiology department, are regions where trainees and radiologists may feel new doctors enter their career opportunities with insufficient preparation. This inability to communicate abilities can demotivate both the radiologist and non-radiology trainee, as well as raise the risk that patients will receive higher levels of radiation as a consequence of unnecessary treatment and improper imaging will be achieved.[13, 14] There is a long history of imaging request forms lack adequate comprehensive and accurate patient information of acknowledged the issue. Past audit reports in the same information from credible a systemic challenge with perfectly having to fill out radiology application forms.[15, 16] Our findings demonstrate that the complete bio-data of patients were correctly filled out on every request form included US, CT and MRI. This was estimated because when a form without complete information would not be eligible to go through the hospital's payment process. If the patient's information was absent, which could result in a serious mistake in recognizing the patient. The radiologist had very little chance to talk about clinical manifestations or ask any specific questions that might have aided in the radiological administration and diagnostic testing of the patient. Because neither of the forms contained the mobile number of the doctor inquiry. When the information given is incorrect, a patient may be exposed to radiation without needing to

be and/or undergo a test that is unsuitable for the situation, which could delay the patient's treatment and evaluation and add extra expenses for both the patient and the medical facility.[17, 18] Acquiring a properly completed request form would remove any hurdles that just might help stop receiving an accurate radiological diagnosis. It is necessary to maintain a balance between responses on proper use and reporting mistakes and gaudiness of a systematic trying to report strategy, its effect on patient treatment and clinical facility, and complying with payment necessities. It is the responsibility of radiology instructor to improve and integrate standardized reporting for their trainer. The implications of structured reporting on radiology learning is addressed in this article, alongside safety and quality concerns, interns the advantages and disadvantages, and proposals regarding how to utilize structured monitoring most successfully in a learning setting.[19, 20]

CONCLUSION

The referring doctors managed to fail to fully and precisely fill out all of the disciplines. To recognize this system and communicate about how it may be done better, we suggest having discussions with radiologists and doctors from different departments.

REFERENCES

1. Kim, W., Kim, J. H., Cha, Y. K., Chong, S., & Kim, T. J. (2023). Completeness of Reporting of Systematic Reviews and Meta-Analysis of Diagnostic Test Accuracy (DTA) of Radiological Articles Based on the PRISMA-DTA Reporting Guideline. Academic Radiology, 30(2), 258-275.
2. Henry, T. S., Kligerman, S. J., Raptis, C. A., Mann, H., Sechrist, J. W., & Kanne, J. P. (2020). Imaging findings of vaping-associated lung injury. AJR Am J Roentgenol, 214(3), 498-505.
3. Castillo, C., Steffens, T., Sim, L., & Caffery, L. (2021). The effect of clinical information on radiology reporting: a systematic review. Journal of Medical Radiation Sciences, 68(1), 60-74.
4. Scheetz, J., Rothschild, P., McGuinness, M., Hadoux, X., Soyer, H. P., Janda, M., ... & van Wijngaarden, P. (2021). A survey of clinicians on the use of artificial intelligence in ophthalmology, dermatology, radiology and radiation oncology. Scientific reports, 11(1), 1-10.
5. Ganeshan, D., Duong, P. A. T., Probyn, L., Lenchik, L., McArthur, T. A., Retrouvey, M., ... & Francis, I. R. (2018). Structured reporting in radiology. Academic radiology, 25(1), 66-73.
6. Tofighi, S., Abedi, A., Salehi, S., Myers, L., Reddy, S., & Gholamrezanezhad, A. (2021). Reason for exam imaging reporting and data system: consensus reached on quality assessment of radiology requisitions. Journal of Patient Safety, 17(4), e255-e261.
7. Abedi, A., Tofighi, S., Salehi, S., Latterman, P. T., Basques, K. D., & Gholamrezanezhad, A. (2019). Reason for exam Imaging Reporting and Data System (RI-RADS): A grading system to standardize radiology requisitions. European Journal of Radiology, 120, 108661.
8. Monshi, M. M. A., Poon, J., & Chung, V. (2020). Deep learning in generating radiology reports: A survey. Artificial Intelligence in Medicine, 106, 101878.
9. Mazurowski, M. A., Buda, M., Saha, A., & Bashir, M. R. (2019). Deep learning in radiology: An overview of the concepts and a survey of the state of the art with focus on MRI. Journal of magnetic resonance imaging, 49(4), 939-954.
10. Fleisher, A. S., Pontecorvo, M. J., Devous, M. D., Lu, M., Arora, A. K., Truocchio, S. P., ... & A16 Study Investigators. (2020). Positron emission tomography imaging with [18F] flortaucipir and postmortem assessment of Alzheimer disease neuropathologic changes. JAMA neurology, 77(7), 829-839.
11. Barakzai, M. D., Sheer, Z. Z., Muhammad, A., Alvi, A., Khan, N., Nizamani, W. M., ... & Siddiqui, S. (2021). Evaluation of radiology request forms in a tertiary care hospital: an audit with a focus on the impact of technological intervention. Cureus, 13(2).
12. Grimm, L. J., Redmond, R. A., Campbell, J. C., & Rosette, A. S. (2020). Gender and racial bias in radiology residency letters of recommendation. Journal of the American College of Radiology, 17(1), 64-71.
13. Vilar-Palop, J., Hernandez-Aguado, I., Pastor-Valero, M., Vilar, J., González-Alvarez, I., & Lumbreras, B. (2018). Appropriate use of medical imaging in two Spanish public hospitals: a cross-sectional analysis. BMJ open, 8(3), e019535.
14. Waite, S., Scott, J. M., Drexler, I., Martino, J., Legasto, A., Gale, B., & Kolla, S. (2018). Communication errors in radiology–Pitfalls and how to avoid them. Clinical Imaging, 51, 266-272.
15. Fatahi, N., Krupic, F., & Hellström, M. (2019). Difficulties and possibilities in communication between referring clinicians and radiologists: perspective of clinicians. Journal of Multidisciplinary Healthcare, 555-564.
16. Brady, A. P., Uberoi, R., Lee, M. J., Müller-Hülsbeck, S., & Adam, A. (2023). Leadership in Interventional Radiology–Fostering a Culture of Excellence. Canadian Association of Radiologists Journal, 74(1), 185-191.
17. Burns, J., Catanzano, T. M., Schaefer, P. W., Agarwal, V., Kim, D., Goiffon, R. J., & Jordan, S. G. (2022). Structured reports and radiology residents: friends or foes?. Academic radiology, 29, S43-S47.
18. Eze, J. C., Ugwuanyi, D. C., Ezugwu, E. E., Abonyi, L. C., Eze, C. U., & Ahumaraeze, V. C. (2019). Evaluation of Compliance of Adequate Filling of Radiology Request Forms in Nnamdi Azikiwe Teaching Hospital, Nnewi, Anambra State, Nigeria. Middle-East J. Sci. Res, 27(4), 250-254.
19. Dangal, A., & Maharjan, S. (2022). Clinical audit of computed tomography requisition form in a Himalayan country, Nepal. Journal of Medical Imaging and Radiation Sciences, 53(4), S11.
20. Kuvare, M., Amkongo, M., Karera, A., & Daniels, E. R. (2022). An Audit of X-Ray Request Form Completion at Two Namibian State Hospitals: How Compliant are the Doctors?. South African Radiographer, 60(2), 42-48.