

# A Review Study on Patient Safety and Quality Control in Nuclear Medicine

Jibon Sharma<sup>1</sup>, Arnabjyoti Deva Sarma<sup>2\*</sup>

<sup>1</sup>Department of Radiology, Gauhati Medical College, Gauhati, Assam, India.

<sup>2</sup>Department of Radiology, Assam downtown University, Guwahati, Assam, India.

## ABSTRACT

As is thought, Risk Management implies the identification of errors in patient care and therefore the connected reasons, with the aim of learning from such events to confirm that the mandatory actions square measure taken to forestall them from revenant within the future. Medical specialty should address this drawback per a dimensional logic, proposing additionally to the standard clinical risk management tools, skills developed over time concerning the protection of employees and therefore the safe use of health technologies. Conjointly security, understood within the broadest sense of the term, may be a drawback that contains a sturdy impact on the truth of the healthful structures. Specific attention to all or any aspects associated with security management, with specific relevancy those sectors of health care that over others may be instrumentally "hit" for no medical purpose, as threatening.

### KEYWORDS:

Quality, Patient, Medicine, Radiology, Oncology

### \*Corresponding Author:

Arnabjyoti Deva Sarma, Department of Radiology, Assam downtown University, Guwahati, Assa, India.  
E-mail: sarma.arnab1990@gmail.com

### How to Cite This Article:

Sharma J, Sarma AD. A Review Study on Patient Safety and Quality Control in Nuclear Medicine. *J Evid Based Med Healthc* 2022;9(10):37.

Received: 04-Apr-2022,  
Manuscript No: JEBMH-22-55150;  
Editor assigned: 06-Apr-2022,  
PreQC No. JEBMH-22-55150 (PQ);  
Reviewed: 20-Apr-2022,  
QC No. JEBMH-22-55150;  
Revised: 02-Jun-2022,  
Manuscript No. JEBMH-22-55150 (R);  
Published: 14-Jun-2022,  
DOI: 10.18410/jebmh/2022/09/10/37.

Copyright © 2022 Sharma J, et al.  
This is an open access article distributed under Creative Commons Attribution License [Attribution 4.0 International (CC BY 4.0)]

## INTRODUCTION

Safety may be a content of the standard of help. As a part of the clinical governance, risk management policies are a tool to confirm patient and operator safety.<sup>1</sup> As is thought, risk management implies the identification of errors in patient care and also the connected reasons, with the aim of learning from such events to confirm that the required actions are taken to stop them from reoccurring within the future.<sup>2,3</sup> Therefore, clinical risk management consists of tips, protocols, pathways, structure and clinical procedures and practices adopted inside a hospital to scale back the likelihood of events and actions probably capable of manufacturing negative or surprising effects on the state of patient health.<sup>4</sup> Additionally the utilization of EBM procedures will limit the prevalence of adverse events.<sup>5</sup> Nuclear medicine should address this drawback in line with a 3D logic, proposing additionally to the normal clinical risk management tools, skills developed over time concerning the protection of staff and also the safe use of health technologies. In any case, it's necessary to ensure that clinical groups have the acceptable skills that individual team members are attentive to their role and responsibilities which the atmosphere during which the team operates is safe.<sup>6</sup>

## LITERATURE REVIEW

### Nuclear Medicine

The responsibility for the error might rely on causes associated with the human issue and also the technical quality of the performance, however additional usually than not it should be attributed to the organization of company systems and to the methods of identification, treatment and help. It follows that the one that truly commits the error isn't essentially the foremost accountable. In order to confirm that their skills and competences square measure maintained, it's necessary to confirm that everyone clinical employees, as well as specialists, bear regular analysis. This could be achieved by collaborating in skilled change conferences and this seems even additional necessary in thought of employee's turnover. "No one has nevertheless learned a way to build the inevitable avoidable".<sup>7</sup> however a key to minimizing the chance of accidents is each for the organization and for the clinical activity and a good ability to speak between the varied operators operating along is needed. It is renowned to insiders that risk management procedures square measure developed in several phases like, error approach and error information, error correction, error analysis of the causes of error and last observation and implementation of the measures taken to stop the repeat of the error.<sup>8</sup> In diagnostic imaging procedures, there square measure many potentialities of the prevalence of a mistake like inadequate technique, failure of understanding, wrong diagnostic judgment, combination of many factors, wrongs in report and communication.<sup>9</sup> In the hospital setting, doable nuclear emergencies might occur whenever the employment of radioisotopes in sealed and unsealed type is employed, each for diagnostic functions and for therapeutic functions. thus within the case of medical specialty, aboard risk management procedures geared toward safeguarding errors and clinical accidents, there's a full series of safety procedures for patients and operators for the protection from "radiant" errors and accidents, that square measure enclosed within the radiation protection procedures within the broad sense.

The phases within which the chance will occur in medical specialty apply is divided in relevance the varied phases of performance. When prescribing the communicating, varied moment's square measure known like, identification of the patient, analysis of the chance to perform the service (justification), identification of appropriateness, the being of any contraindications, the right preparation of the patient. In the preparation section of the diagnostic or therapeutic procedure it's doable to spot the instant of drafting and printing the daily program, the method of distinctive the patient and also the style of service, the drafting of the anamnesis and also the ensuing forecast of adverse reactions, the compilation of labels, the preparation of the pharmaceutical and its identification in relevance the patient and also the service to be performed, the time of administration of the pharmaceutical. When the diagnostic or therapeutic procedure is performed, the doable error lurks once distinctive the patient, once checking the time and sort of service, throughout the space to and from the diagnostic section, once positioning the patient, the technical management of the service, the information process section, the iconographic copy and also the identification of labels. Finally, within the news and delivery phases of the report, once analyzing the photographs and quantitative knowledge, drafting, recording, transcription and printing of reports, approval and sign language of reports, close of reports and iconographic knowledge, delivery of reports. In every of the mentioned points you'll be able to verify the presence of a mistake, that appropriately known associate degree reportable in an auditing system, can permit avoiding the repetition. However an extra reason for risk issues, additionally to the protection procedures understood as "safety", simply reportable, those of safety understood as "security", that is, the interference of abnormal events for the aim of threatening, in medical specialty departments. We tend to speak here of the happening within which the sources of radiation unremarkably used for medical functions square measure used improperly. The goal to be set is to boost the amount of the "safety standard" with reference to the management of radiation sources employed in the medical field through the reduction of risk margins by exalting procedures that permit to optimize security, or to stop abnormal events, for the aim of threat, which might be enforced through improper use of those sources. the key safety issues square measure associated with radioactive contamination and doable internal radiation caused by radioactive isotopes in unsealed type that square measure employed in medical specialty.<sup>10</sup>

## DISCUSSION

Considering the characteristics of radionuclide's employed in medical specialty, it's clear that, in effect, any improper use of those substances isn't in the midst of a true risk for the population, in settled terms energies emitted by each the photonic and electronic parts, the half - life and also the quantities unremarkably command or created of the radioactive isotopes used, aren't like to cause concern during this sense. The matter is that any news of subtraction, so maybe the invention during a public place, of a supply of radiation taken within a hospital, may have psychological consequences on the population that square measure in no way insignificant. Three essential moments is known within the management of radiation sources at intervals health facilities, the handling of incoming material, the employment

of this material per the consolidated diagnostic - therapeutic procedures and also the disposal of outgoing radioactive material.<sup>14,15</sup>

### CONCLUSION

The safety of patients and operators within the medicine branch passes through the employment of absolute safety procedures that have an effect on several sectors of the management of aid firms. Equipment cannot be ignored they have to be fastidiously maintained, however additionally registered throughout the national territory. However operators should even be fastidiously designated and evaluated and that they should be ready to operate in adequately designed and equipped structures. On the far side these, registration and traceability of the presence of sources within the medicine Service concerning arrival, storage, usage, delivery of the remains in controlled waste, disposal (vector removal) and notification of disposal (final storage), represent the foremost licensed procedures to get rid of the danger of errors within the medicine departments. "Security, understood within the broadest sense of the term, may be a downside that encompasses a robust impact on the truth of the healthful structures gift within the national territory. The actual historical moment, characterized by the eye to the aspects of hindrance of doable terrorist matrix, needs explicit attention to all or any aspects associated with security management, with explicit relevance those sectors of health care that quite others may well be instrumentally "hit" for this purpose.

### REFERENCES

1. Mango L, Ascoli G. Clinical Governance: Application in Nuclear Medicine. *ARC Indian J Radiol Imaging* 2018; 3(1):1-6.
2. La Pietra L, Calligaris L, Molendini L, et al. Medical errors and clinical risk management: state of the art. *Acta Otorhinolaryngol Ital* 2005;25(6):339-346.
3. Wolf ZR, Hughes RG. Error Reporting and Disclosure. In: Hughes RG, editor. *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*. Rockville (MD): Agency for Healthcare Research and Quality (US) 2008.
4. Alam AY. Steps in the Process of Risk Management in Healthcare. *J Epid Prev Med* 2016;2(2):118.
5. Zegers M, Hesselink G, Geense W, et al. Evidence-based interventions to reduce adverse events in hospitals: a systematic review of systematic reviews. *BMJ open* 2016;6(9).
6. Mango L. Moderne strategie di risk management in ambito sanitario *Notiziario Elettronico di Medicina Nucleare ed Imaging Molecolare* 2007;3(4):51-56.
7. Roberts KH, Bea R. Must accidents happen? Lessons from high-reliability organizations. *Academy of Management Perspectives*. 2001;15(3):70-78.
8. Mango L. Assicurazione di qualita e sicurezza del paziente in medicina nucleare Q. *J of Nucl Med Mol Imaging* 2011;55(2):55-58.
9. Robinson PJ. Radiology's Achilles' heel: error and variation in the interpretation of the Röntgen image. *Br J Radiol* 1997;70(839):1085-1098.
10. Campanella F, Panebianco A, Salatti M, et al. Indicazioni per l' applicazione di una strategia di sicurezza finalizzata alla prevenzione di eventi anomali a fini di minaccia nelle strutture sanitarie che utilizzano radiazioni ionizzanti. *Risultanze del*

Gruppo di Lavoro costituito dall' ISPEL "Gestione in sicurezza delle fonti di rischio radiologico in campo medico" Report ISPEL 2007.

11. Gori C, Mango L. L'archivio radiologico e il censimento delle apparecchiature, in *Il Libro bianco della Medicina Nucleare in Italia a cura di L Maffioli N Mazzuca*. E Bombardieri AIMN 2005;4(06):172-173.
12. Mango L. L'area professionale in *Il Libro bianco della Medicina Nucleare in Italia a cura di L Maffioli N. Mazzuca*, E Bombardieri AIMN. 2006;1(08):36-38.
13. Mango L, Manzara A, Claudiani F, et al. La struttura del Reparto di Medicina Nucleare, in *Il Radiologo e il Management*; 8:127-141.
14. Sarma AD, Devi M. A comparative evaluation of USG & MRCP in patients of obstructive jaundice and assess their role as a useful diagnostic tool & correlate the USG & MRCP findings with operative / FNAC / histopathological / ERCP findings / therapeutic follow up wherever performed. *J. emerg technol* 2019;6(1):213-234.
15. Sarma AD. Role of MRI in Perianal Fistulas. *J appl sci comput* 2019;6(6):2493-2506.