Knowledge, Competency, and Efficiency of MRI Technologist Performing MRI Procedures and Protocols on Selected Hospitals in Laguna

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Abstract

Highly skilled MRI technologists are vital in providing precise imaging, essential for accurate diagnoses and patient safety. Their strong foundation in knowledge, competency, and efficiency significantly enhances the execution of MRI procedures and adherence to standardized protocols. This study utilized a descriptive correlational research design to investigate MRI technologists' knowledge, competency, and efficiency in performing MRI procedures. The findings indicate that these professionals possess a robust understanding of safety protocols and quality assurance, along with high levels of competency and efficiency in their work. Positive correlations among these variables highlight the interconnected nature of knowledge, competency, and efficiency and support the need for ongoing professional development. In conclusion, the study underscores that MRI technologists demonstrate commendable expertise in safety procedures and quality control while effectively adhering to established protocols and ensuring patient comfort during scans. Increased knowledge enhances competency and efficiency, creating an improvement cycle. To sustain and further elevate the performance and expertise of MRI technologists, implementing the proposed action plan will be beneficial for ongoing growth and development in this critical field.

Keywords: Knowledge, Competency, Efficiency, MRI Technologist

Introduction

Diagnostic medical imaging, driven by trained professionals called RadTechs, brings the invisible to the visible with technologies such as X-rays, MRI, CT, ultrasound, and nuclear medicine. RadTechs must adhere to strict guidelines to guarantee patient safety and generate high-quality images for proper diagnoses. MRI, for instance, is a non-invasive, radiation-free way of taking detailed images of soft tissues, and it is a safer alternative for some medical conditions.

MRI technologists value accuracy, safety, and patient health, trusting foundational knowledge and experience to assess complicated circumstances and guarantee high-quality

images. Extensive knowledge of MRI sequences, hardware, and magnetic field interactions with tissues is crucial for maximizing image quality and patient safety. As medicine progresses, such competencies are indispensable in generating quality diagnostic images and patient care standards.

Competency goes beyond technical expertise and integrates skills, knowledge, and behavior to complete tasks (Mirchuk, 2023). Regular evaluation and the development of competency are needed as medicine advances. Adequate preparation of the patient is key to MRI procedures. Technologists must be knowledgeable and competent about screening for contraindications, positioning correctly, and adapting protocols for certain groups of patients to enhance image quality and patient satisfaction (Sklar, 2024).

Professionals are better equipped to work efficiently, enhance processes, and attain the desired results by possessing the right blend of knowledge and competency. Smith (2023) emphasizes how MRI technology innovation boosts the efficiency of technologists and the quality of patient care. (Dagli, 2023) emphasizes that individual performance directly influences organizational success, competitiveness, and overall performance.

This study aimed to assess the knowledge, competency, and efficiency of MRI technologists in Laguna, Philippines, in applying procedures and protocols. While prior studies addressed these areas, none specifically examined real-world applications in this setting. Conducted between December 2024 and February 2025, it utilized quantitative methods, including questionnaire surveys, to evaluate how these factors influence MRI service quality indicators such as knowledge, competency, and efficiency with procedures and protocols. Statistical analysis identified gaps in knowledge, competency, and efficiency, which will guide the formulation of a strategic action plan to enhance MRI technologists' competence, promote professional development, and improve diagnostic imaging standards.

Methods
This research utilized a descriptive correlational design to assess MRI technologists' knowledge, competency, and efficiency in performing MRI procedures and protocols. A stratified random sampling method was used, targeting 45 radiologic technologists who practice MRI in different hospitals in Laguna from a total population of 50 respondents through the Rao soft calculator with a 5% margin of error and 95% confidence level.

A self-made questionnaire was employed as the main instrument for data collection. It consisted of three sections: Part I measured knowledge, Part II assessed competency, and Part III examined efficiency in performing MRI procedures and protocols, which was assessed using the Likert scale continuum of four. The questionnaires were submitted to field experts for clarity, relevance, and completeness feedback for instrument validation. Cronbach's alpha was used to test the reliability of the instrument, with the following findings: knowledge (0.904), competency (0.910), and efficiency (0.914), proving all indicators to be acceptable and reliable. Weighted mean and Pearson r correlation coefficients were used as the statistical tool in this study to describe the respondents' a) level of knowledge, b) competency, and c) efficiency in performing the MRI procedure and protocol.

Result and Discussion

The following are the study's most relevant findings on MRI technologists' knowledge, competency, and efficiency in performing MRI procedures and protocols.

Table 1

Respondents' Level of Knowledge on Performing MRI Procedures and Protocols: Equipment Operation

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Thorough understanding of the functions of various MRI components.	3.31	Very High	2
2. Knowledge of common issues in MRI equipment and troubleshooting techniques.	3.04	High	4
3. Knowledge of selecting and adjusting MRI machine settings for optimal image quality.	3.27	Very High	3
4. Knowledge of the importance of regular MRI equipment calibration and maintenance.	3.49	Very High	1
General Weighted Mean	**3.28**	**Very High**	

Legend: (Strongly Agree/Very high -4, Agree/High -3, Disagree/Low- 2, Strongly Disagree/Very Low -1)

Table 1 presents the respondents' level of knowledge regarding the operation of MRI equipment. The overall mean score for this category is 3.28, which reveals a very high level of knowledge in terms of equipment operation. It shows that respondents strongly understand various aspects of MRI equipment operation. The highest-ranked indicator, with a score of 3.49, pertains to respondents' knowledge of the importance of regular MRI equipment calibration and maintenance, which was interpreted as very high. The second-ranked indicator reflects a thorough understanding of how different MRI components function, which was rated as very high with a mean of 3.31. The third-ranked indicator got a weighted mean of 3.27, which relates to the knowledge of selecting and adjusting MRI machine settings for optimal image quality. The lowest-ranked indicator with a score of 3.04 involves the respondents' understanding of common issues troubleshooting MRI equipment, rated as "high.".

The data revealed that the respondents deeply understand the importance of regular MRI equipment calibration and maintenance. Proper calibration ensures the MRI machine produces accurate, reliable, and consistent results. Regular maintenance and calibration are vital for the MRI machine to perform optimally. Furthermore, it indicates that participants recognize the significance of these practices in maintaining diagnostic accuracy, which is critical in medical imaging. This understanding is a key aspect of ensuring patient safety and the accuracy of results.

According to Sodani (2024), to guarantee the precision and dependability of diagnostic imaging, it is essential to have a thorough awareness and knowledge of the significance of routine MRI equipment calibration and maintenance. Accurate diagnoses depend on the MRI equipment continually producing precise, high-quality results, which proper calibration

ensures before it becomes a serious problem. Professionals must also be aware if the machine is operating correctly and performing tasks throughout time.

Table 2

Respondents' Level of Knowledge on Performing MRI Procedures and Protocols: Image Acquisition

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Understanding of different MRI sequences.	3.42	Very High	3
2. Knowledge of adjusting scan parameters (e.g., slice thickness, resolution, timing) to optimize image quality..	3.49	Very High	2
3. Knowledge of proper patient positioning to minimize motion artifacts and ensure high-quality images..	3.58	Very High	1
4. Knowledge of identifying and correcting imaging issues.	3.36	Very High	4
General Weighted Mean	**3.46**	**Very High**	

Legend: (Strongly Agree/Very high -4, Agree/High -3, Disagree/Low- 2, Strongly Disagree/Very Low -1)

Table 2 data results indicate a very high level of knowledge among the respondents regarding performing MRI procedures and protocols regarding image acquisition, as evidenced by the general weighted mean of 3.46. Each indicator reflects a strong understanding of MRI principles. The findings revealed that the highest-ranked indicator, with a mean score of 3.58 and a verbal interpretation of very high, relates to the knowledge of proper patient positioning to minimize motion artifacts and ensure high-quality images. Following this is the respondent's knowledge in adjusting scan parameters, which secured the second rank with a mean score of 3.49, also interpreted as very high. Ranked third is the respondent's understanding of different MRI sequences with a mean score of 3.42, which got the same interpretation of very high. Lastly, the lowest-ranked indicator, the respondent's knowledge of identifying and correcting imaging issues, received a mean score of 3.36. Despite being the lowest, it still falls under the very high interpretation.

The highest-rated indicator reflects that respondents excel in ensuring correct patient positioning. Proper alignment reduces motion artifacts, enhances image clarity, and minimizes the need for repeat scans. This competency is essential, as patient movement significantly contributes to poor MRI image quality.

A strong understanding of procedures and techniques is essential for producing high-quality images, especially regarding patient positioning, which directly affects image clarity. Anatomical accuracy and pathology identification. An informed professional knows how to position patients correctly for accurate diagnoses, optimize scanning parameters, and minimize motion artifacts. Insufficient knowledge of placement methods can lead to poor-quality imaging, misdiagnoses, unnecessary repeat scans, and compromised patient safety (Abed & Sandean, 2022).

Table 3

Respondents' Level of Knowledge on Performing MRI Procedures and Protocols: Safety Measures and Quality Assurance

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Knowledge of patient screening for contraindications (e.g., pacemakers, metallic implants) to ensure MRI safety.	3.56	Very High	2.5
2. Knowledge administering contrast media and potential adverse reaction monitoring.	3.60	Very High	1
3. Awareness of potential hazards related to the magnetic field, radiofrequency energy, and noise, along with strategies for mitigation. and noise during MRI examinations.	3.47	Very High	4
4. Familiarity with emergency procedures for managing patient claustrophobia, equipment malfunctions, and medical emergencies.	3.56	Very High	2.5
General Weighted Mean	**3.54**	**Very High**	

Legend: (Strongly Agree/Very high -4, Agree/High -3, Disagree/Low- 2, Strongly Disagree/Very Low -1)

The table assesses MRI technologists' competencies across four key safety-related indicators, including their corresponding weighted means, verbal interpretations, and rankings. The overall weighted mean of 3.54 reflects a very high level of knowledge among respondents regarding MRI safety knowledge and practices. The findings indicate that all four indicators fall under the very high verbal interpretation category. Indicator 2, which focused on knowledge of administering contrast media and potential adverse reaction monitoring, received the highest weighted mean of 3.60. This was followed by indicator 1, knowledge of patient screening for contraindications to ensure MRI safety, and indicator 4, familiarity with emergency procedures for managing patient claustrophobia, equipment malfunctions, and medical emergencies, both of which got a weighted mean of 3.56. Lastly, indicator 3, "Identifying and Mitigating Potential Hazard," had the lowest ranking with a mean of 3.47.

The highest-rated competency suggests that technologists feel most confident administering contrast agents and monitoring patients. Properly using contrast agents enhances MRI imaging while minimizing potential adverse reactions.

Murphy (2022) emphasizes the ability and competence of MRI technologists to administer contrast agents and monitor side effects. It also emphasizes the necessity for stringent safety protocols by highlighting the patient- and agent-dependent nature of contrast agent reaction rates. It demonstrates how crucial MRI tech competency is in preserving patient safety during contrast-enhanced MRI treatments.

Table 4

Summary Table of the Respondents' Level of Knowledge on Performing MRI Procedures and Protocols

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Equipment operation	3.28	Very High	3
2 Image acquisition	3.46	Very High	2
3. Safety Measures and Quality Assurance	3.54	Very High	1
General Weighted Mean	**3.43**	**Very High**	

Table 4 illustrates the summary of respondents' level of knowledge in performing MRI procedures and protocols. The general weighted mean across all indicators is 3.43, reinforcing that respondents demonstrate a very high level of knowledge of MRI procedures and protocols. Among the indicators, "safety measures and quality assurance" received the highest ranking with a weighted mean of 3.54, interpreted as "very high," followed by "image acquisition," which ranked second with a weighted mean of 3.46, also interpreted as "very high.". Lastly, "equipment operation" ranked third with a weighted mean of 3.28, while still falling under the "very high" category.

The findings indicate that knowledge regarding safety measures and quality assurance is prioritized, suggesting that respondents feel most assured in their ability to uphold safety standards and ensure quality in MRI procedures. Despite the risks associated with MRI, the high rating suggests a strong awareness of patient safety, proper equipment handling, and adherence to established protocols.

Putra et al. (2022) emphasize that to create safer and more effective work environments, it is essential to provide employees with excellent awareness and to implement strict quality assurance procedures. A thorough understanding of safety protocols and quality control improves worker productivity and security. Knowledgeable workers are more likely to adhere to safe procedures, enhancing productivity and reducing workplace hazards.

Table 5

Respondents' Level of Competency in Performing MRI Procedures and Protocols

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Efficiently sets up and operates MRI equipment, ensuring all parameters were appropriately adjusted based on clinical requirements.	3.40	Very High	4.5
2. Ability to detect and troubleshoot recurrent technical problems of the MRI device.	3.24	High	8
3. Expertise in patient positioning in the MRI scanner to minimize motion artifacts and ensure high-quality imaging.	3.38	Very High	6
4. Adheres to standard MRI procedures for several clinical cases (e.g., brain, spine, and musculoskeletal imaging) to obtain maximum image acquisition.	3.40	Very High	4.5
5. Ability to adjust scan parameters (such as slice thickness, field strength, and image resolution) depending on the anatomical region and clinical indications.	3.31	Very High	7
6. Ensures patient's safety by properly screening for contraindications (e.g., pacemakers, metallic implants) before starting the MRI procedure.	3.56	Very High	2
7. Ability to identify MRI images and potential abnormalities	3.22	High	9
8. Adherence to MRI safety guidelines to safeguards the patients as well as staff members against unwanted exposure to the magnetic field.	3.58	Very High	1
9. Identifies and rectifies image quality problems, i.e., motion artifacts or insufficient signal-to-noise ratio, in MRI scans	3.16	High	10
10. Ensures MRI images are of diagnostic quality through quality assurance measures	3.44	Very High	3
Overall Weighted Mean	**3.37**	**Very High**	

Legend: (Strongly Agree/Very high -4, Agree/High -3, Disagree/Low- 2, Strongly Disagree/Very Low -1)

As seen in Table 5, the overall weighted mean of 3.37, or "very high," reveals that respondents have a high level of competency in conducting MRI procedures and protocols. This implies that they can operate MRI equipment, adhere to imaging protocols, uphold patient safety, and keep image quality standards. Among the skills rated, the best-ranked ability is the respondents' adherence to MRI safety guidelines to safeguard both patients and staff members against unwanted exposure to the magnetic field, with a score of 3.58. This highlights the respondents' excellent competency regarding MRI precautions. In line with this is ensuring patient safety by properly screening for contraindications before starting the MRI procedure (3.56), which comes in at second place again, reflecting respondents' dedication to patient safety. Competencies related to equipment operation and protocol compliance for high-quality diagnostic imaging also earned "Very High" scores. MRI equipment setup and

operation expertise (3.40) and adherence to standard MRI procedures for several clinical cases to obtain maximum image acquisition earned (3.40) were both ranked in 4th place. Ensuring MRI images are of diagnostic quality through quality assurance measures (3.44) shows the respondents' commitment to high-quality imaging. Expertise in patients' proper positioning to reduce motion artifacts (3.38) and the ability to adjust scan parameters by anatomical and clinical requirements (3.31) also belong to the "Very High" category, indicating their technical proficiency. Still, other competencies had slightly lower marks, suggesting some areas to focus on for improvement. Detection and troubleshooting of recurrent technical problems of the MRI device (3.24), as well as the respondent's ability to identify MRI images and potential abnormalities (3.22), both ranked as "high." The lowest-ranking competency is the respondent's expertise in identifying and rectifying image quality problems, i.e., motion artifacts or insufficient signal-to-noise ratio in an MRI scan (3.16).

Overall, the results proved that MRI technologists were highly competent in safety measures and protocol adherence to protect the patient and the MRI staff from unnecessary exposure to the magnetic field.

Strict adherence to safety procedures is essential in MRI settings to guard against potential risks associated with strong magnetic fields. MRI technologists must be highly competent in implementing safety measures to prevent serious problems. Extensive safety procedures have been put in place to reduce these risks, stressing the significance of rigorous screening procedures and restricted access to MRI zones to avert mishaps and guarantee a secure atmosphere for patients and medical staff. (Kragsterman,2025).

Table 6
Respondents' Level of Efficiency in Performing MRI Procedures and Protocols

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Complete MRI procedures within the expected time frame without compromising image quality.	3.33	Very High	4.5
2. Efficiently prepared and positioned patients for MRI scans, minimizing the time spent on setup while ensuring patient comfort and safety.	3.44	Very High	1
3. Effectively manage patient flow, ensuring that MRI scans are conducted promptly without unnecessary delays.	3.29	Very High	8
4. Quickly troubleshoot technical issues with MRI equipment (e.g., signal interference and improper settings) without causing significant delays in the procedure.	3.16	High	10
5. Efficiently prioritize tasks to ensure all essential steps in the MRI procedure (e.g., patient screening, setup, imaging) are completed without missing any important steps.	3.33	Very High	4.5

6. Efficient and accurate procedure execution in adhering to MRI protocol minimizes errors and ensures maximum patient safety	3.38	Very High	3
7. Assess and correct any image quality issues (e.g., motion artifacts, noise) during the procedure, minimizing the need for rescans.	3.31	Very High	6
8. Manage multiple patients and imaging tasks throughout the day, ensuring that each procedure is completed in an efficient and orderly manner.	3.29	Very High	8
9. Meets productivity goals for MRI procedures without sacrificing the safety or comfort of the patient.	3.42	Very High	2
Overall Weighted Mean	**3.32**	**Very High**	

Legend: (Strongly Agree/Very high -4, Agree/High -3, Disagree/Low- 2, Strongly Disagree/Very Low -1)

The data in Table 6 indicates that MRI technologists demonstrate a very high efficiency level in performing MRI procedures, as reflected by the overall weighted mean of 3.32.

The highest-rated efficiency is the ability to efficiently prepare and position patients for MRI scans (3.44), ranking first. This suggests that respondents are well-trained in minimizing setup time while ensuring patient comfort and safety, which is crucial for maintaining workflow efficiency. Following closely is the respondent's ability to meet productivity goals without compromising patient safety (3.42), which ranks second, highlighting their ability to balance efficiency with quality care. Additionally, efficient and accurate procedure execution in adhering to MRI protocol minimizes errors and ensures maximum patient safety (3.38) ranks third, suggesting that well-structured guidelines contribute to respondents' ability to perform procedures accurately and efficiently. Other competencies, such as completing MRI procedures within the expected time frame (3.33) and prioritizing essential tasks effectively (3.33), also received "Very High" ratings. These findings indicate that respondents can manage their workflow efficiently, ensuring all necessary steps are completed without unnecessary delays.

Furthermore, their ability to quickly assess and correct image quality issues during the procedure (3.31) ranks sixth, reflecting their capability to minimize rescans and improve overall efficiency. However, some areas received slightly lower ratings, indicating opportunities for improvement. Troubleshooting technical issues with MRI equipment (3.16) received the lowest ranking, suggesting that respondents may need additional training in resolving equipment-related challenges efficiently. Managing patient flow effectively and handling multiple patients throughout the day (all at 3.29) ranked eighth, indicating that while respondents are efficient in these areas, further optimization in workflow management could enhance overall productivity. Lastly, the respondent's ability to troubleshoot technical issues with MRI equipment (e.g., signal interference and improper settings) without causing significant delays in the procedure (3.16) emphasizes the potential benefit of further technical training.

These findings suggest that MRI technologists had a very high level of efficiency in patient preparation, workflow efficiency, and adherence to protocols to ensure patient safety during the procedure.

According to Abed and Sandean (2022), MRI technologists' skills are also essential factors to consider in maximizing workflow efficiency, with expertise in positioning being a major contributor to decreased scan times and enhanced image quality. Efficiency in patient positioning enables precise anatomical visualization, eliminates motion artifacts, and decreases the necessity for repeat scans, thereby improving productivity and patient throughput.

Table 7
Relationship Between the Respondents' Level of Knowledge and Level of Competency in Performing MRI Procedures and Protocols

Competency	Statistical Treatment (Pearson's)	p-value	Decision	Interpretation
Equipment operation	r=.757 (high correlation)	.000*	H_0 rejected	Significant
Image acquisition	r=.838 (high correlation)	.000*	H_0 rejected	Significant
Safety measures and Quality assurance	r=.819 (high correlation)	.000*	H_0 rejected	Significant
*Significant @.01				

Pearson's r values of (.757), (.838), and (.819) were obtained, indicating a positive and high correlation. This shows enough statistical evidence to support the null hypothesis being rejected, indicating a significant relationship between the variables. This means that the higher the respondent's level of knowledge in performing MRI procedures and protocols, the higher the level of competency.

Vitello et al. (2021) state that a competent person not only has theoretical knowledge but also knows how to put it to use in real-world scenarios, exhibiting flexibility and problem-solving abilities in both work and home settings. Knowledge and competency are closely related since a solid knowledge base improves one's capacity to complete activities effectively and acquire skills in a certain sector. The more knowledge one gains, the better equipped an individual is to apply it to practical situations.

Table 8

Relationship Between the Respondents' Level of Knowledge and Level of Efficiency in Performing MRI Procedures and Protocols

Efficiency	Statistical Treatment (Pearson's)	p-value	Decision	Interpretation
Equipment operation	r=.625 (moderate correlation)	.000*	H_0 rejected	Significant
Image acquisition	r=.638 (moderate correlation)	.000*	H_0 rejected	Significant
Safety measures and quality assurance	r=.715 (high correlation)	.000*	H_0 rejected	Significant
***Significant @.01**				

Table 8 presents the relationship between the respondents' knowledge level and efficiency in performing MRI procedures and protocols. Pearson's r values of.625,.638 and.715 were obtained, indicating a positive and moderate to high correlation. This shows that there is enough statistical evidence to reject the null hypothesis, indicating a significant relationship between the variables. This means that the higher the respondents' level of knowledge, the higher the efficiency in performing MRI procedures and protocols.

According to Smulovics (2024), efficiency is rooted in knowledge. It gives people the skill and know-how to carry out a task in an efficient and accurate way. However, a person must use knowledge in a way that directly pertains to fulfilling important goals to maximize efficiency. When an individual's purposefully deploy knowledge in a strategic and organized way it ensure their efforts leads to greater productivity and success.

Table 9

Relationship Between the Respondents' Level of Competency and Level of Efficiency in Performing MRI Procedures and Protocols

Variables	Statistical Treatment (Pearson's)	p-value	Decision	Interpretation
Competency and efficiency	r=.791 (high correlation)	.000*	H_0 rejected	Significant
***Significant @.01**				

For the relationship between the respondents' level of competency and level of efficiency in performing MRI procedures and protocols. Table 9 revealed that a Pearson's r value of.791 was obtained, indicating a positive and high correlation. This shows that there is enough statistical evidence to reject the null hypothesis, indicating a significant relationship between the variables. This means that the higher the level of competency of the respondents, the higher the level of efficiency in performing MRI procedures and protocols.

Effective use of competency reduces time, effort, and resource waste, which leads to efficiency. Overemphasizing competency can lead to delays, while overemphasizing efficiency might reduce quality. Both must be in balance. Efficiency and competency work in synergy to improve output, performance, and personal satisfaction. (2020, Kapur).

Conclusion

MRI technologists exhibit a commendable level of knowledge related to MRI procedures and protocol adherence. Their familiarity with safety protocols and quality assurance highlights their dedication to ensuring the safety of both patients and staff. Additionally, these professionals demonstrate strong competence in executing procedures, especially in maintaining protocol compliance, essential for achieving imaging accuracy and providing high-quality patient care.

The respondents also show impressive efficiency in positioning and preparing patients for MRI scans, successfully balancing patient comfort with procedural integrity. The findings indicate a beneficial linear relationship between knowledge, competency, and efficiency: as respondents' knowledge increases, so does their competency, which subsequently enhances their efficiency in conducting MRI procedures and following established protocols.

To further advance and enrich these essential skills, it is vital to implement an action plan focused on continuous learning, experiential training, and regular assessment. This proactive approach will not only help MRI technologists maintain their current expertise but will also empower them to adapt to advancements in MRI technology and evolving best practices, ultimately benefiting patient care and enhancing operational effectiveness.

Table 10
Researcher's Proposed Action Plan

Areas of Concern	Objectives	Activities	Time Frame	Focal Person	Budget Allocation	Success Indicators
Knowledge on MRI Equipment Operation	To sustain MRI technologist knowledge of how MRI machines operate, including scan parameters and imaging techniques.	Organized workshops on software updates and MRI machine operation. Provide access to certification courses and online learning resources Give hands-on training utilizing MRI equipment.	Every Quarter	Chief Radiologic Techno-logist MRI Techno-logists,	Php. 25,000.00	A significant 80% of MRI technologists score over 85% on knowledge assessment tests after completing the training.
Competency in Identifying and Correcting	To sustain the ability to detect and correct poor	Conduct case-based learning sessions to	Every Month	MRI Techno-logists	Php. 10,000.00	Within six months, the number of

Image Quality Issues	signal-to-noise ratios and motion artifacts	assess the quality of images. Practice MRI evaluation in real time. Discussion and peer review of actual cases.		Radio-logists Chief Radiologic Techno-logist		repeat scans due to image quality issues reduced by 75%
Efficiency in Troubleshooting MRI Equipment Issues	to maintain an exceptionally high level of diagnostic precision and operational speed while encouraging proactive troubleshooting, cutting down on downtime, and encouraging ongoing education to keep abreast of developing MRI technology.	Troubleshooting training, simulation, and drills for common MRI machine issues and improper settings. Collaborating with biomedical engineers to improve technical expertise.	Every Month	MRI Techno-logists Bio-medical Engineers Chief Radiologic Techno-logist Equipment Vendors	Php. 10,000.00	50% of MRI technical issues are fixed within ten minutes or less, reducing downtime.

The proposed action plan focused on sustaining MRI technologists' knowledge, skills, and efficiency in conducting MRI procedures and protocols, targeting specific areas for enhancement identified in the findings. It will strengthen the knowledge of MRI equipment operation through hands-on training and workshops. Additionally, it aimed to boost competency in recognizing and resolving image quality issues through practical experience and case-based learning. Efficiency in troubleshooting MRI equipment will be enhanced through simulation-based drills. Standardized checklists, audits, and refresher training will be implemented to ensure compliance with safety protocols.

Furthermore, ongoing professional development will be promoted through mentorship programs and incentives for MRI technologists to pursue advanced certifications or attend at least one professional conference each year. With this structured plan, hospitals and imaging centers were able to enhance diagnostic accuracy, streamline workflow efficiency, and uphold high safety and quality standards, ultimately resulting in improved patient outcomes.

Recommendation
To improve the effectiveness of MRI technologists, continuous education through well-structured workshops and training should be emphasized. The Chief Technologist can enhance this process by implementing MRI simulation software and conducting periodic assessments to refine hands-on skills. The Medical Director must invest in cutting-edge

equipment and regularly update protocols to optimize workflow and elevate patient care standards. Collaboration with radiologists will further enhance diagnostic accuracy and troubleshooting capabilities. Additionally, regular competency evaluations will help ensure adherence to best practices. Research efforts should prioritize evidence-based training, the exploration of emerging technologies, and the integration of AI. Finally, key stakeholders must review the proposed action plan to sustain excellence in MRI procedures and protocols.

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