

Perspectives

Medico-legal responsibilities in radiological practice: A perspective on reducing risk

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Introduction

Radiological interpretation is essential to patient care, yet it is inherently susceptible to error and miscommunication. Approximately 4% of all radiology reports contain errors, a statistic that underscores both the complexity of image interpretation and the medico-legal implications inherent in the practice of radiology. [1] This article offers a reflective analysis on radiologists' medico-legal challenges and practical strategies to reduce litigation risk and improve patient safety.

Common Causes of Malpractice in Radiology

Malpractice claims in radiology stem primarily from diagnostic errors, procedural complications, and communication failures. [2] Among these, diagnostic error remains the leading cause, particularly in breast imaging, where missed or misinterpreted findings frequently result in delayed cancer diagnoses. Vascular injuries during interventional procedures also pose substantial medico-legal risks.

Although communication errors are less commonly cited in lawsuits, they often exacerbate clinical consequences and contribute to patient dissatisfaction. Thus, the medico-legal risk in radiology extends beyond technical accuracy and into interpersonal and institutional communication systems.

Legal Framework and Accountability

Depending on the jurisdiction and context, radiologists may be held liable under civil, criminal, or administrative law. [1, 2] Civil liability often arises from acts of negligence or a breach in the duty of care, while criminal liability may apply in cases of gross negligence or recklessness, particularly when harm results. In Thailand, specific laws govern medical liability and patient protection, including Section 402 of the Civil and Commercial Code and Section 59 of the Criminal Code. Awareness of these legal structures is essential for radiologists to protect themselves and reinforce professional responsibility and ensure informed clinical practice.

Communication: A Pillar of Protection

Failure to communicate effectively remains a persistent vulnerability in radiological practice. Incomplete reports, lack of recommendations for follow-up, and inadequate documentation of verbal discussions can all contribute to poor outcomes and potential litigation. Miscommunication is especially hazardous when delivering bad news, obtaining informed consent, or disclosing errors.

Radiologists must prioritize structured and comprehensive reporting that includes clinical context, findings, limitations, and a clear impression. Direct communication with referring physicians should be documented, particularly in urgent or ambiguous cases. In the digital era, this also means safeguarding patient confidentiality and securing imaging data through appropriate encryption and anonymization.

Liability Insurance and Risk Mitigation

Professional indemnity insurance is an essential component of clinical radiology practice. It provides financial protection and promotes a culture of accountability and quality improvement. Beyond insurance, adherence to established guidelines and evidence-based protocols serves as a robust defense against claims.

Standardized communication practices, ongoing professional development, and the cultivation of a safety culture within departments can help reduce medico-legal risk.

The Role of Artificial Intelligence (AI)

AI offers a promising adjunct in reducing human error and enhancing diagnostic precision. However, its integration also introduces new legal and ethical questions. Radiologists remain ultimately responsible for image interpretation, and AI should serve as a decision support tool rather than a substitute. Transparency in AI deployment, algorithm validation, and documentation of its role in clinical decision-making will be vital to maintaining professional standards and legal defensibility.

Conclusion

Radiologists operate at a critical intersection of technology, clinical medicine, and patient care. As such, they carry significant responsibility for accurate image interpretation, effective communication of findings, ethical engagement, and the protection patient rights. By understanding the medico-legal landscape and actively adopting risk-reduction strategies, radiologists can safeguard their patients and professional integrity.

Lessons Learned

The intersection of radiology and the law reveals that clinical excellence alone does not mitigate medico-legal risk. Highly competent radiologists may face litigation due to systemic failures, ineffective communication, or insufficient documentation. One of the most valuable lessons is the importance of proactive risk awareness—not waiting for adverse events to highlight vulnerabilities.

Another key insight is that miscommunication is not always negligence, but oversight—whether in failing to relay incidental findings, omitting recommendations, or underestimating the value of direct dialogue with referring physicians. Additionally, the emotional and financial toll of litigation serves as a reminder of the need for institutional support systems, including mentorship, legal counsel, and structured peer review.

Practical Recommendations

1. Implement structured reporting that includes clinical context, relevant comparisons, clear impressions, and limitations. This enhances clarity and reduces ambiguity in interpretation.
2. Document all verbal communications with referring physicians, especially for critical or unexpected findings. Brief notes in the report or within the PACS system can serve as vital records.
3. Improve informed consent processes for interventional procedures, ensuring patients understand risks, benefits, and alternatives.
4. Participate in multidisciplinary meetings to strengthen communication channels and enhance collaborative decision-making.
5. Invest in regular medico-legal training and continuing education in risk management, especially related to emerging technologies like AI.
6. Promote a culture of safety and openness where errors can be disclosed, analyzed, and learned from without fear of retribution.
7. Ensure adequate liability insurance is in place, and review coverage regularly in light of evolving practice patterns.
8. Respect digital confidentiality protocols, including the anonymization of teaching images and the encryption of sensitive data.

References

1. Biswas S, Biswas S, Awal SS, Goyal H. Malpractice and lawsuits in radiology: what the radiologist should know. *Egypt J Radiol Nucl Med* [Internet]. 2023 [cited 2025 Apr 22];54:19. Available form: <https://ejrnm.springeropen.com/articles/10.1186/s43055-023-00971-9>
2. Jena AB, Seabury S, Lakdawalla D, Chandra A. Malpractice risk according to physician specialty. *N Engl J Med* 2011;365:629–36. doi: 10.1056/NEJMsa1012370.