

INTERNATIONAL SYMPOSIUM ON RADIOLOGY, NUCLEAR MEDICINE, AND DIAGNOSTIC IMAGING



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Structured Reporting as the Key to Patient-Centered and Responsible AI Integration in Radiology

Patient experience has become a central quality indicator in radiology. Beyond diagnostic accuracy, clarity, transparency, and safety in communication are now essential. Traditional free-text reports increasingly fall short of these expectations.

Recent studies (2022–2025) demonstrate that structured reporting systems significantly improve the consistency, completeness, and comprehensibility of radiology reports. Enhancements such as patient-friendly summaries, illustrations, and glossaries have been shown to improve understanding, reduce anxiety, and decrease unnecessary follow-ups. Structured reporting thus provides the foundation for truly patient-centered communication.

At the same time, artificial intelligence (AI) has made remarkable progress in radiology. Generative models and specialized algorithms can increase reporting efficiency by up to 15% without compromising diagnostic quality. However, these benefits unfold fully only when AI outputs are embedded into structured workflows. Structured reporting systems serve as an 'AI hub,' harmonizing heterogeneous outputs and translating them into consistent, verifiable, and patient-friendly reports.

Nevertheless, risks must be acknowledged. Evidence shows that even experienced radiologists can be influenced by incorrect AI suggestions ('automation bias'), leading to reduced diagnostic accuracy. Furthermore, concerns have been raised about potential 'deskilling' or cognitive offloading—where overreliance on AI erodes critical diagnostic skills over time. Other studies, however, suggest that well-integrated AI can support training and enhance learning rather than diminish expertise.

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Conclusion

Structured reporting provides the essential framework to ensure patient experience and safety in an era of increasing AI adoption. It enables radiology to harness the opportunities of AI while mitigating risks such as automation bias and skill degradation. As such, structured reporting is a key enabler for the responsible digital transformation of radiology.

Keywords

Structured reporting, patient experience, radiology, artificial intelligence, diagnostic accuracy, patient-centered care, communication in radiology, automation bias, deskilling, cognitive offloading, reporting efficiency, digital transformation, human-AI interaction, medical communication.

Biography

Dr. med Igor Toker, MBA, is a board-certified radiologist and Chief Medical Officer at Neo Q Quality in Imaging GmbH, Berlin.

His work focuses on the intersection of radiology, artificial intelligence, and digital transformation in healthcare. Dr. Toker has extensive experience in developing and implementing AI-assisted structured reporting solutions to enhance diagnostic quality, efficiency, and patient experience. He is a frequent speaker at international conferences and contributes to publications on guided reporting, sustainable radiology, and value-based digital healthcare