Editorial

The present supplement of Applied Medical Informatics is dedicated to the 2nd edition of the jRoMedINF Conference 2026, a hybrid conference hosted by the "Carol Davila" University of Medicine and Pharmacy of Bucharest, Romania, and centered on the theme Medical Data Lifecycle: From Collection to Decision Support. The conference took place on 14–15 May 2026 and brings into focus a central pillar of modern healthcare: the medical data lifecycle.

Distinguished invited speakers contribute insights into key areas such as healthcare innovation in Romania, the role of technologies in automated coding of clinical documents, the changing landscape of Artificial Intelligence, as well as the importance of cybersecurity in digital health ecosystems.

The contributions presented at this edition reflect a perspective on how medical data is generated, processed, and ultimately transformed into actionable knowledge. The breadth of topics demonstrates a clear evolution from isolated data handling approaches to fully integrated, data-driven healthcare ecosystems. From biosignal acquisition and advanced imaging to large-scale population datasets and wearable technologies, the diversity of data sources illustrates the growing complexity and richness of the medical information landscape.

A key element emphasized throughout the conference is the need for effective data structuring and interoperability. Several contributions address the challenges associated with extracting meaningful information from unstructured clinical documents and regulatory sources, as well as ensuring compatibility across heterogeneous systems. These efforts underline the importance of standardization and integration as prerequisites for efficient data utilization and cross-disciplinary collaboration.

The role of artificial intelligence and advanced analytics is prominently featured across the program. Machine learning and deep learning approaches are increasingly employed in areas such as medical image analysis, signal processing, disease detection, and predictive modeling. These technologies are not only enhancing diagnostic accuracy but also enabling the identification of patterns and relationships that would otherwise remain undetected. At the same time, the conference acknowledges the need for robust validation, explainability, and clinical relevance of these models.

Equally important is the translation of analytical outputs into decision support systems. A significant number of contributions focus on predictive tools for disease progression, risk stratification, and public health surveillance. Such approaches demonstrate the potential of medical informatics to support both individualized patient care and population-level interventions, thereby contributing to improved health outcomes and resource optimization.

Beyond the technical dimension, the conference also addresses critical aspects related to implementation, ethics, and trust. The integration of digital technologies into clinical workflows

requires not only technological readiness but also organizational adaptation and user acceptance. Issues such as cybersecurity, data privacy, and the ethical use of artificial intelligence are recognized as essential components of a sustainable digital health ecosystem. Furthermore, studies exploring public perception and acceptance highlight the importance of aligning technological innovation with societal expectations.

Another dimension of jRoMedINF 2026 is the emphasis on education and knowledge dissemination, including digital platforms designed to support healthcare professionals in adapting to the rapidly evolving digital environment. This reflects a broader understanding that the success of digital transformation depends on continuous learning and interdisciplinary collaboration.

We would like to express our sincere gratitude to all those who contributed to the success of the 2nd jRoMedINF 2026 scientific event. First and foremost, we extend our deepest appreciation to our distinguished invited speakers for their valuable contributions and inspiring presentations. Their expertise and insights have significantly enriched the scientific program and provided meaningful perspectives on the evolving landscape of medical informatics and the medical data lifecycle. We are also grateful to the reviewers of the submitted abstracts for their rigorous evaluation, constructive feedback, and dedication. Their efforts ensured the high scientific quality and relevance of the contributions included in this supplement. Our thanks go to all active participants, whose research contributions, discussions, and engagement have created a dynamic and collaborative environment. Their work reflects the diversity and innovation that define the field of medical informatics today. Last but not least, we acknowledge with deep appreciation the members of the Scientific and Organizing Committees for their commitment, professionalism, and sustained efforts in planning and delivering a successful conference. Together, your contributions have made the 2nd jRoMedINF Conference 2026 a meaningful platform for knowledge exchange and advancement in medical informatics

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