

MY HIGHLIGHTS OF THE 2025 SORSA-IAFR CONGRESS

Report by Yanda Peter, Cape Peninsula University of Technology.

Overall, the conference was exceptionally well organised - congratulations and thank you to the organisers. The speakers and content were appropriate for an international conference, and the registration process was smooth and efficient. While the digital app for viewing the program and speaker details experienced occasional issues, likely due to network traffic, it was nonetheless an innovative and forward-thinking solution that reflects the digital era. The self-scanning stations for CPD points were convenient and user-friendly. Parking arrangements were well managed, with a simple and efficient process. Catering was diverse, offering a wide variety of options which I believe accommodated different dietary preferences, including vegetarian and vegan choices.

The presentations were interesting and covered a wide range of topics such as forensic radiography, artificial intelligence, ethics in radiography, radiation protection including optimisation and diagnostic reference levels, and radiography education. The lineup of speakers was very impressive and included the following international guest speakers:

1. ISRRT president Dr Napapong
2. Forensic expert Prof Thali
3. Radiation protection expert Prof Rehani
4. Rontgoen foundation president/ IAEA radiation protection specialist Prof Vassileva
5. ISRRT Europe and Africa regional director Mr Håkon Hjemly

SUMMARY OF SOME OF THE INTERESTING PRESENTATIONS

The ISRRT president's presentation titled ISRRT – The way forward highlighted the ongoing efforts of the ISRRT including training of radiographers and radiotherapists in resource constrained settings such as the Pacific Islands and Madagascar. This presentation also highlighted ISRRT collaborations with other global organisations including WHO and IAEA. It was interesting to hear that the lack of recognition for the radiography profession is a common issue that affects developed countries like Spain as well. My key takeaways from this presentation were the society's future intentions to build a network of specialist radiographers through teleoperations, amplify global professional representation, and collaborate with industry partners to guide innovations. Also of note was the aim to grow the newly established

International Academic Network with the goal to connect universities globally for the purposes of advancing research, education and lifelong learning in radiography.

Prof Thali's presentation - The dead tell tales emphasised the role of radiography/ imaging in forensic cases. I liked his slogan "Without radiographers you are dead", it symbolised recognition for the profession and its important contribution to both medicine and forensics. The role of emerging, cutting edge, high technology Virtopsy approach which involves use of Virtobot (Robotic system) and CT scanners was noteworthy. The advantages of virtopsy include doing away with the need to cut the body in order to perform an autopsy, the 3D view of the body, the availability of documentation/ images/ evidence for years. Not cutting the body means the dignity is preserved which aligns with many African cultures that value preservation of the body. The use of metaphors throughout the presentation made it interesting and easy to listen to. The key message was in forensics "Every scene has a story behind the obvious" and "the truth in forensics lies not in an eyewitness account but a reconstruction under uncertainty to reveal what actually happened" which can be achieved by "entering the theatre after the curtain falls".

Prof Rehani's presentation "Impact of newer technologies on patient dose and stochastic risk" served as an eye opener against the belief that new is always better, particularly when it comes to radiation safety. He explained how the newer CT scanners can result in higher radiation doses compared to the older units. He attributed these high doses to the newer scanners' capability to give high tube current (mA) that can go up to 1300 vs 500 mA which was the maximum in older units, the introduction and common practice of performing multiple phase exams and a considerable number of the patient population with higher BMI. Prof Rehani also demonstrated how the high radiation dose in digital images can go unnoticed using a comparison between an overexposed film and an overexposed digital image. In contrary, Prof Rehani reported that the newer angiographic units result in up to 50% radiation dose reduction compared to older units. In conclusion, he emphasised the responsibility of the radiographer in ensuring protocol optimisation, dose monitoring and smart use of system features in continuous attempts to reduce radiation doses to patients.

The presentation on "Roles and responsibilities for recurrent imaging from a radiation protection perspective" by Prof Vassileva highlighted the importance of benefit-risk analysis for each imaging request/ examination as a first step to radiation protection. Patients that undergo recurrent imaging examinations can reach accumulative doses of more than 100 mSv, which increases their cancer risk. This emphasises the importance of the justification and optimisation radiation protection principles in cases of recurrent imaging to reduce patient risk.

Some of the justification processes, e.g. clinical decision support systems, are AI driven; these can be linked to the dose monitoring system to help clinicians make an informed decision about the level of radiation risk for each patient. Radiographers play a key role in protocol and technique optimisation. Key strategies are staff education and adherence to standardised protocols. DRLs also play an important role in dose optimisation. In addition to the standard DRL, there is a newly introduced concept – Recurrent Exposure Reference Level – which is being investigated. My takeaway from this presentation is the need for personalisation of patient dosimetry using such techniques as individual dose tracking in an era where there is focus on person centred healthcare.

Mr. Håkon Hjemly's presentation, titled "Radiographers and AI: Opportunities and Concerns," began by addressing the long-standing misconception that radiographers are merely button pushers. He emphasized, *"Radiographers are not just button pushers; they serve as the vital link between technology and the patient."*

AI is here to stay, and measures should be put in place to ensure safety. The European Union introduced an Artificial intelligence Act to ensure AI systems are safe, transparent and respect fundamental human rights. This Act mandates transparency and accountability measures for high-risk AI systems and human oversight when using AI systems which requires radiographers to fully comprehend the abilities and limitations of AI and be able to duly monitor its operation including malfunction and unexpected performance and take appropriate action to ensure safety.

The rise of AI presents the following requirements and opportunities for radiographers:

- adaptability to new workflows, technologies and new roles
- development of core skills that will enable effective supervision of AI
- staying updated with latest AI technology
- enhancing skills in areas that cannot be replaced by AI, e.g. patient care, and complex problem solving and decision making

Concerns:

- reduced ability to think due to overreliance on AI
- responsibility for AI errors
- informed consent
- AI cost

Take home message: AI + radiographer intelligence = better health services

Prof Kekana presented on Ethical challenges related to AI in healthcare. The key message from this presentation was the importance of using large volumes of high-quality images which are representative of the different ethnical groups to ensure accuracy of AI. Because AI is not a person and cannot be legally liable, humans (producers and users of AI tools) remain accountable for any AI errors. Radiographers have a responsibility to validate AI decisions. Therefore, AI cannot fully replace the human radiographer. It is crucial for radiographers to fully understand how to safely monitor AI operations.

MY CONCLUSIONS

A common theme across the summarised presentations was the undeniable role of AI and its integration into various aspects of radiography. As radiographers, it is essential that we upskill and prepare ourselves to work effectively alongside AI technologies.

Radiation protection/ safety remains a critical issue, which can be hindered or improved by the introduction of newer imaging technologies. The increased accessibility of medical imaging services and associated recurrent imaging, and the numerous phases for certain CT protocols are among the potential contributors to higher radiation doses.

The numerous presentations on Diagnostic Reference Levels (DRLs) reflect the growing adoption of this critical research and the anticipated implementation of DRLs for various imaging procedures and clinical indications in South Africa, in line with recommendations from the International Commission on Radiological Protection (ICRP).