

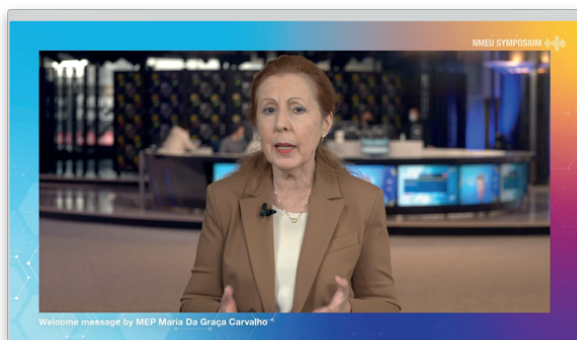
Nuclear medicine is already transforming fight against cancer, MEP Da Graça Carvalho tells NMEU symposium

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NMEU SYMPOSIUM

Nuclear medicine is already transforming the fight against cancer and other critical conditions, Portuguese MEP Maria Da Graça Carvalho told the annual Nuclear Medicine Europe (NMEU) Symposium.

The MEP told the ‘Personalised Medicine Fighting Cancer: The Promise of Nuclear Medicine’ symposium on November 17 that radiological breakthroughs offered new hope against cancers and disorders. “Nuclear medicine promises the shortest path to precision medicine and can intervene in the fight against cancer, but also in cardiac and neuropsychological disorders. It is already transforming the way diseases like cancer and mental health conditions are treated,” she said.



Graça Carvalho, a member of the MEPs Against Cancer group, said that nuclear medicine would be further enhanced in coming years as artificial intelligence (AI) helps improve image reading, while other technologies lead to better image quality, shorter acquisition time and lower radiation doses. “In recent years, there has been huge progress in the fields of chemistry, radiology, scanner technology and computational analysis of complex patterns - and these have resulted in sophisticated methods to diagnose, detect, and successfully treat cancer,” she said.

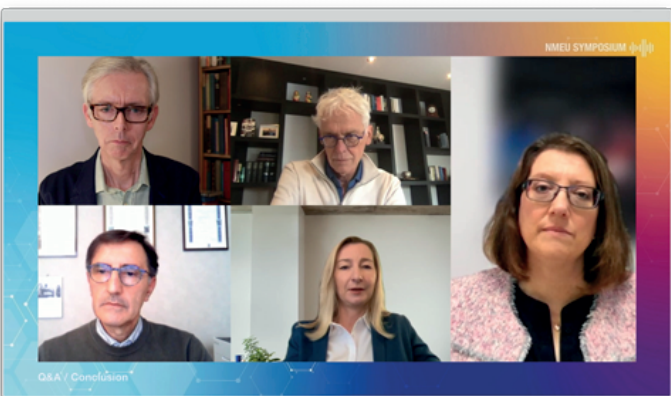
Noting that many of the world's top researchers and strongest companies in the sector are European, she said it needed EU backing. “We need to facilitate the availability of nuclear medicine through the seamless connection of hospitals and distribution sites across the EU, enabling education, skill creation and awareness, and promote further research and infrastructure development,” she said.

NMEU President Antonis Kalemis said there was a risk, as the world continued to battle the coronavirus pandemic, that the fight against cancer might be overlooked. “Cancer was Europe’s biggest killer before COVID-19, and it will still be there long after the lockdowns end,” he said. “There is no vaccine for cancer, but there are treatments. Nuclear medicine is now more precise and powerful than ever as it diagnoses and treats cancer patients. It is the safest and most-effective way to beat the disease, but it needs more support from policymakers.”

Fred Verzijlbergen, the Professor in Nuclear Medicine in Radboud University Medical Centre, said that nuclear medicine’s imaging and treatment offered the best of both worlds. “It provides both structural and functional information about organs and tissues,” he said, showing how images have become increasingly precise, especially when different systems are combined, like PET and CT. “The combination allows clear location and visualization, of benign and malignant tissues. PET-CT is a clear game changer.” Prof Verzijlbergen, who is also the President of the Dutch Society of Nuclear Medicine, said that while nuclear medicine is not cheap, it is cost effective in many oncologic situations, like staging lung cancer, diagnosing pulmonary nodules, staging lethal lymphomas.

Jolanta Kunikowska, the Professor at the Nuclear Medicine Department, at Warsaw's Medical University, said that it was crucial for everyone involved in nuclear medicine to work together. "We need to understand each other in this multidisciplinary area," she said. The teams would include a clinician (an endocrinologist or urologist), an image specialist (a radiologist), and oncologist, a surgeon, and a radiation therapy specialist Prof Kunikowska, who is also President of the European Association of Nuclear Medicine (EANM) said all the members of the multidisciplinary team need education and training to know how to manage the interaction with the patient. "The most important thing is to sit and talk with the patient," she said.

Nicola Fazio, the Director of the Division of Gastrointestinal Medical Oncology and Neuroendocrine Tumours at the European Institute of Oncology, in Milan said the emerging field theranostics - the combination of therapeutics and diagnostics - can change mentalities in the nuclear medicine sector, especially with multidisciplinary teams (MDTs). "We should think and approach theranostics in a different way," he said. "Theranostics is a wonderful term that suggests we can find the right therapy for any condition – but it does not mean all patients will benefit. We need more predictive factors, and AI can help."



Ken Hermann, the Chair of the Department of Nuclear Medicine at the Universitätsklinikum Essen, said the sector may struggle to scale up as it faces a significant increase in demand over the next few years. "Even in Germany, there are probably not enough theranostic centers and insufficient trained personal," he said. "Academics and industry have to join forces to successfully scale up approved therapies." He also said there were questions about whether some of the systems that recently emerged, like PRRT and PSMA, would be able to lead the way in nuclear medicine. "Are they just one-hit wonders? Is it really just plug and play? We need to know if they can go beyond peptides and small molecules," he said.

Johannes Czernin, the Medical Pharmacology Chief at UCLA's Ahmanson Translational Imaging Division, explained that over time, nuclear medicine saves money as it means fewer, but more effective treatments. "Cost assessments are blind. Cost effectiveness assessments are needed," he said, explaining how using PSMA imaging on 40,000 patients a year would save \$1.2 billion out of a total \$6 billion cost. "Scaling up medical imaging and access to nuclear medicine can induces substantial health benefits for patients. Imaging alone results in markedly improved health care outcomes in developing and developed countries," he said. "Scaling up quality of care, diagnostics and therapeutics in developing and developed countries may be the best investment socially and economically as lifetime productivity will increase substantially."

Mart-Jan Blauwhoff, the Scientific Marketing Director at Curium Pharma, outlined the challenges for the complex radiopharmaceutical supply chain due to the relatively short half-lives of the isotopes. "They are often ordered on one day and then produced the same day, delivered the next morning and used in hospital," he said. "The transportation of isotopes is subject to strict regulations and often has to go with airfreight. COVID and Brexit has added to the complications." Mr Blauwhoff, who is also the Co-chairman of the NMEU Communication Working Group, said that the modest reimbursement costs of nuclear medicine in many European countries meant several companies had left the field, while the remaining ones are struggling.

Helen Barker, the Vice President Regulatory Affairs, Blue Earth Diagnostics, explained the changing EU regulatory environment surrounding radiopharmaceuticals. Dr Barker, who is also the Chair of the NMEU RA&Q Working Group, outlined the changes set to come into force on January 1, 2022, when new rules on Clinical Trials Regulation (EC 536/2104) are implemented, which is the biggest change to radiopharmaceutical regulation since 2001. "All stages of study conduct are impacted by this recommendation, study design, study planning, study, submission, study, conduct and closing down and study," she said, warning that the biggest changes with the greatest impact for radiopharmaceuticals will be the scrapping of country specific protocol amendments. "The new regulation is a new way of working for companies and will require changes to existing processes and procedures."