

The rapidly evolving field of nuclear medicine

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In the context of promoting research and development into nuclear medicine, FAST organised the 'Rapidly Evolving Field of Nuclear Medicine' event on Friday, June 28th 2024. As an independent national centre of expertise and collaboration, FAST (1) is devoted to driving innovation in therapy development. Serving as a dynamic network infrastructure, FAST consolidates knowledge, fosters dialogues, and engages an extensive range of experts. The aim of this meeting was to inform involved parties, expedite collaboration, exchange results, and strengthen the ecosystem. To engage all relevant stakeholders, FAST organised the meeting together with Astrid Freytag and Wim Oyen of the Dutch Ministry of Health, Sandra Heskamp of DECISIVE and Guus van Dingen of FORESIGHT.

The event offered an in-depth exploration of the most recent developments in the Dutch nuclear medicine ecosystem. Over a hundred experts attended the event, representing a diverse mix from the field: academia, the private sector, and a combination of regulators and and policymakers.

The day commenced with a plenary session, moderated by Mark Wijsman. After a short welcoming address, Johan Klunder (patient perspective), Bastiaan Privé (Radboudumc, physician perspective) and Famke Brouwer (TRACER, drug development) exemplified how the use of medical isotopes impact clinical care, drug development and their daily lives during the fireside

chat. Chiel Scholten (Technopolis) shared compelling insights into the Dutch innovation ecosystem and Technopolis its recommendations for this ecosystem to become the European hotspot for nuclear medicine (2). The plenary session continued with a presentation of the Special Envoy Medical Isotopes of the Ministry of Health, Wim Oyen, about his assignment and the roadmap he is preparing together with the stakeholders of the ecosystem (3). Bart Cornelissen, co-initiator of DECISIVE, provided an overview of this initiative and how the DECISIVE consortium envisions to create an unprecedented nuclear medicine ecosystem to establish the Netherlands as the world leader in the field of nuclear medicine diagnostics and therapeutics. Guus van Dongen, co-initiator of FORESIGHT, explained that high-precision molecular imaging is a powerful enabling technology for efficient drug development and better treatment decisions and how the FORESIGHT consortium envisions to seize the opportunities the technology presents. If you would like to learn more about the initiatives, get involved or contribute you can contact the co-initiators of DECISIVE (4) and FORESIGHT (5) or get in touch with the Special Envoy, Wim Oyen (6) (see signature at the bottom for contact details).

Subsequently, participants engaged in matchmaking sessions focused on three specific themes: i) enabling technology in drug development, ii) diagnostics use (and patient stratification), and iii)

therapy. Moderators facilitated these sessions with the aim of connecting participants with similar interests and stimulating potential collaborations. The day proceeded with four breakout sessions. These sessions were categorised into the following themes: i) Nuclear Medicine - What's in it for you?, ii) Human capital - How to keep up with demand of specialised personnel, iii) Improve innovation and valorisation - What should a centre for innovation and valorisation do? and iv) Implementation in the clinic - All you need to know about registration, reimbursement and access. Each session was expertly led by experienced moderators (Mark Wijsman, Mark Rijpkema (Radboudumc), Alexander Turkin (Oncode Institute) and Marlous Kooijman (FAST)), contributing to in-depth discussions on the topic and providing an opportunity to connect with experts.

During the break-out session '*Nuclear Medicine - What's in it for you?*' a fireside chat was moderated by Mark Wijsman. The main conclusions were that the opportunities of nuclear medicine as treatment and diagnostic tool for the patients should be capitalised. To successfully do so, several challenges still have to be overcome. Firstly, all these diagnostics and treatments can only become broadly available for patients when they are offered at an affordable price. Although urgently needed, there is no clearcut solution yet and this challenge needs to be addressed. Secondly, for the development of radiopharmaceuticals

specific infrastructure and expertise is necessary. The availability of infrastructure and expertise is limited and the effective use of the available resources should be organised in a (virtual) national centre of expertise. Thirdly, the supply of medical isotopes might become insufficient in the future. Again urgently needed, but there is no clearcut solution yet and this needs our attention.

The take home messages from the *'Human capital - How to keep up with demand of specialised personnel'* break-out session were very clear. Industry and academia should join forces in education. Many courses are available but the field is very fragmented. An overview and coordination is needed. The societal awareness of nuclear medicine is very low. We need to enthusiasm students at high school level already about our exciting and promising field.

In the break-out session *'Improve innovation and valorisation - What should a centre for innovation and valorisation do?'* it was concluded that the challenges for innovation and valorisation for radiopharmaceuticals are widely recognised and are very similar to the challenges for all pharmaceuticals in development. To improve innovation and valorisation scientists should be incentivised to go to the Technology Transfer Offices (TTOs). The TTOs should be better equipped to help scientists and preferably centrally organised to make effective use of the available expertise and learn from each other's practices. Early interactions with industry were identified as success factors of innovation and valorisation. Building a business case for radiopharmaceuticals is more challenging for radiopharmaceuticals than for other pharmaceuticals due to the dependencies on the logistics of medical isotopes and the short shelf-life of radiopharmaceuticals.

During the break-out session *'Implementation in the clinic - All you need to know about registration, reimbursement and access'*, it was clearly explained that radiopharmaceuticals are regulated at the European level following the same principles as other pharmaceuticals. There are specific guidance documents describing the requirements for radiopharmaceuticals. In some cases requirements in overarching guidance documents are conflicting with the specific requirements for radiopharmaceuticals. It is not clear which requirement is prevailing in such a case. Reimbursement and access are arranged at national level. The reimbursement system in the Netherlands is based on solidarity and is reaching its boundaries taking into account the pipeline of promising but often expensive drugs. Together we need to redesign this system and make it future proof. Whereby we strive for a system that should guarantee availability, accessibility and affordability.

The day concluded with a plenary session during which the take-home messages from the break-out sessions were shared. Reflections on the day, the urgency of the topic, and key takeaways were discussed. Additionally, the future of nuclear medicine and the role FAST can play were considered. FAST's next steps involve discussing with stakeholders the creation of a collaboration hub, envisioned as a virtual national expertise centre, to improve coordination, knowledge sharing, and innovation. With a shared commitment to follow-up on the recommendations to strengthen the innovation ecosystem of nuclear medicine and become the European hotspot for nuclear medicine, participants were encouraged to actively contribute. Only together, we can make a profound impact on the future of

nuclear medicine.

The slides of the meeting can be downloaded using the following link: [Wrap up of an insightful gathering in the rapidly evolving field of nuclear medicine \(fast.nl\)](#) ♦

Footnotes

1. Home - FAST, subscribe for the FAST newsletter (Nieuwsbrief - FAST) and follow FAST on LinkedIn (Future Affordable Sustainable Therapies: Overview | LinkedIn) FAST website (www.fast.nl/en) en FAST linkedIn pagina (<https://www.linkedin.com/company/fastnl>)
2. FAST report (March 2024) Recommendations to improve innovativeness and earning capacity to become a European hotspot for nuclear medicine.
3. The roadmap will be presented on Monday October 21st from 9:30-11:00 at the EANM 2024 and Friday November 8th from 10:00-16:00 in Utrecht. For more information contact Astrid Freytag (ad.freytag@minvws.nl)
4. Sandra Heskamp, professor Nuclear Imaging and Therapy in Immuno-Oncology Radboudumc, co-initiator of DECISIVE, Sandra.Heskamp@radboudumc.nl
5. Guus van Dongen, professor Imaging and Biomarkers, Amsterdam UMC, co-initiator FORESIGHT, gams.vandongen@amsterdamumc.nl
6. Contact through Astrid Freytag, policy officer Program directorate medical isotopes at Ministry of Health, Welfare, and Sports, ad.freytag@minvws.nl

MEETING



Images of the meeting