



# PHYSICS

## 2022 ESTRO Physics Workshop: Science in Development

### Justification and optimisation of kV imaging in IGRT

7 - 8 October 2022, Lisbon, Portugal

*Chairs: Nuria Jornet and George Ntentas*



#### *Participants at the workshop*

We were delighted to host a group of motivated and fun delegates in one of the workshop streams last October in Lisbon. The topic was the justification and optimisation of kilovolt (kV) imaging in image-guided radiation therapy (IGRT).

Twenty-seven delegates (20 medical physicists, three radiographers and four industry partners) from Europe, the USA and Australia gathered in Lisbon to discuss and propose the areas in which more research was needed. The delegates discussed and split into working groups to decide projects and the corresponding working parties. Additional representatives from industry participated to ensure that the issues were acknowledged by the main manufacturers and that solutions were proposed.

**On the first day**, delegates and invited speakers outlined the current challenges and identified issues in the clinic.



**On the second day**, vendors and other delegates presented. The group identified three areas of interest and three working sub-groups were created.



- The first group will work on guidelines for image and dose optimisation in imaging in radiotherapy that centres across the world can implement in their departments.
- The second group will form a consensus on imaging dose measurement methodologies in cone beam CT and dose index to be used in radiotherapy, including the potential for use of Monte Carlo tools.
- The third group identified the need for a vision paper to describe expert consensus on the direction of travel and future developments in the field. It was agreed that the participation of industry representatives would increase the likelihood of prompt technological adoption.



## *Thoughts by one of the participants, Professor Tomas Kron*

I had the opportunity to attend the 2022 European Society for Radiotherapy and Oncology (ESTRO) physics workshop with both 'inside' and 'outside' perspectives. I have been an ESTRO member for many years and very much identify as a radiotherapy physicist; however, I work 17,748km (thanks Google) from Lisbon, in Australia. It was exciting to see that the five topics chosen for the workshop sounded as exciting and relevant from Down Under as I hope they were seen to be in Europe.

While I was participating in the 'kV imaging dose in radiotherapy' working group, it was the opportunity to hear what had happened next door, through the wrap-up sessions at the end of each day, which was really stimulating. A second social event at the end of the workshop perhaps could have provided even more opportunity to enjoy this mix. The second highlight for me was the seamless integration of vendors. This was particularly relevant for our group, as imaging dose, its documentation and let alone optimisation are still in their infancy and it was great to have highly competent representatives of manufacturers who could comment, explain and (we hoped) take suggestions back to their employers.

Being a first-time attendee at an ESTRO physics workshop, I am curious to discover how well the working group can continue to work together and actually develop documents. It seems easy when you talk face-to-face but a bit more daunting when confronted with an empty piece of paper and the normal clinical workload to handle. Given the mix of experiences of the participants and the inclusion of vendors and diagnostic physicists, we have a unique opportunity to come up with something pragmatic. If it can help to change practice, it would result in significant patient benefits.

In summary, 2022 is the first year in which I have participated in an ESTRO physics workshop; it is unlikely to be the last.



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