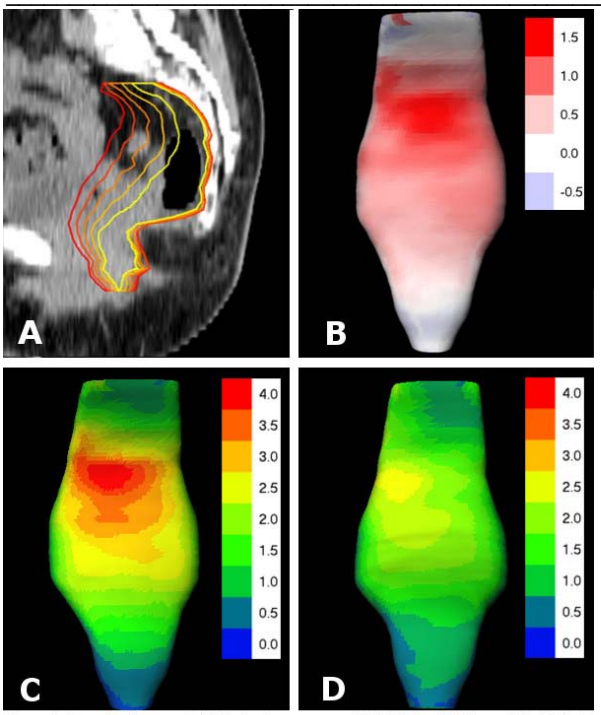

Figure 1. Example of generated LOP structures on a sagittal CT slice (A). Figures B to D depict anterior views of 3D representations of the (average) CTV. Figures C and D present the required margins in the case of bony anatomy based corrections and when using our LoP approach, respectively. Figure B shows the difference between the two methods. All measurements are in cm.

Debate: We don't need better dose calculation, it's doing more bad than good

SP-0622
For the motion
E. Sterpin[1]
[1]*Katholieke Universiteit Leuven, Oncology, Leuven, Belgium*

Advanced dose calculation algorithms have demonstrated excellent performance against measurements for complex treatments and heterogeneous phantoms. Thus, it is natural to consider those as the best candidates for treatment planning. Because the dose calculation is more accurate, so will be the treatment and its outcome improved. This seems intuitively obvious.
However, a broader view on our clinical practice may temper this conclusion. In our clinical practice, we are using dose prescriptions from past experience that was typically based on less accurate dose calculation algorithms. Also, we are using safety margins for geometrical uncertainties that are based on hypothesis that simplify considerably the physics of dose deposition, but yet seem to provide adequate coverage and safety for the majority of the patients.
We will show during this debate that changing the dose calculation algorithm considering our present practice will not necessary have a positive impact for the patients. Therefore, the introduction of such algorithms in clinics should be made cautiously.

SP-0623
Against the motion
T. Knöös[1]
[1]*Lund University Hospital, Malmö, Sweden*

Debate: Are we precisely inaccurate in our adaption?

SP-0624
For the motion
M. Leech[1], M. Kamphuis[2]
[1]*TCD Division of Radiation Therapy, Radiation Therapy, Dublin, Ireland Republic of*
[2]*Academic Medical Centre, Radiotherapy, Amsterdam, The Netherlands*

This debate will critically discuss recent developments in adaptive radiotherapy (ART). Adaptive radiotherapy is being introduced in many departments nowadays and one of the main question is if there is sufficient evidence to safely do so?
In the debate, the inaccuracies of the process will be discussed profoundly. What is the accuracy of the process as a whole? Do delineation errors and dose calculation errors still make ART really worth the effort? Or can these errors safely be corrected for?
Another aspect that will be discussed is risk management. Procedures are often not supported by software released for this purpose. In case of e.g. plan selection, different manual steps are made which are probably prone to human errors. What is the impact of these human errors? On the other hand, do we really have to wait for optimal software to be release and keep patients treated in a sub-optimal manner?
Last but not least is the lack of sufficient knowledge on tumor spread e.g. in the case of gynecological tumors. If we reduce the treatment area, aren't we going to miss our target? Will this in the end increase local relapse rates instead of reducing toxicity? From a different point of view it can be argumented that we will never get knowledge of the exact tumor location if we keep treating patients with a (too) large safety margin.

SP-0625
Against the motion
M. Kamphuis[1]
[1]*Academic Medical Center, Academic Physics, Amsterdam, The Netherlands*

Joint abstract submitted

Debate: Moving away from 2 Gray: are we ready for a paradigm shift?

SP-0626
This house believes that larger fraction sizes will be the standard-of-care for the majority of curative treatments by 2025
J.R. Yarnold[1]
[1]*The Institute of Cancer Research and The Royal Marsden NHS Foundation Trust, Radiotherapy & Imaging Department, Sutton, United Kingdom*

A significant proportion of curative schedules still use fraction sizes ≤2.0 Gy, mostly on a once-daily basis five times per week. These practices are likely to diminish further over the next 10 years, driven independently by advances in biology and physics. Although randomised trials in the 1980s and '90s confirmed squamous carcinomas of the head and neck and bronchus to be relatively insensitive to fraction size compared to the dose-limiting late-reacting normal tissues, it is now well established that adenocarcinomas of the breast and prostate share comparable, or perhaps greater, sensitivity to fraction size than the dose-limiting late normal tissues. Hypofractionation is increasingly adopted as a standard of care for women with breast cancer, and practices are changing for men with prostate cancer too, diseases account for 28% and 17%, respectively, of all UK radiotherapy courses. High dose brachytherapy and novel external beam techniques exclude adjacent normal tissues from the high dose zone so effectively that prescribed dose is limited mainly, if not exclusively, by tissues in the paths of entry and exit beams. The impact of stereotactic radiotherapy in common cancers remains to be established, but early results for early stage lung cancer look encouraging, particularly when the benefits of acceleration are factored in. There is therefore ample justification to support a prediction that accelerated hypofractionation will be a standard of care for the majority of curative treatments well before 2025.