

AbstractID: 2577 Title: Volumetric Image-Guidance for Therapy: Performance, Quality and Opportunity

The recent developments in the field of imaging technology for specialized applications opens new and exciting frontiers for therapy guidance. In the context of radiation therapy, there is a growing expectation of volumetric imaging in the context of therapy. This expectation is coming in numerous forms ranging from CT-on-rails to megavoltage and kilovoltage CT systems embedded in the treatment system with each of these offering unique features and capacities that will be evaluated in the near future as this technology makes it's way into the clinical setting. The merits of image-guidance are difficult to dispute and multi-faceted. Clinical experience with one such technology has provided insight into the dimensions over which this technology might have impact on the therapy of cancer patients. While these technologies have been justified on their potential to improve the performance (accuracy and precision) of the therapeutic intervention - offering reduced toxicity and increased probability of cure through dose escalation - it is clear that this is not the limit of their value. The near-term benefits may be in their capacity for increasing the quality with which we execute conventional therapy regimens. Alternatively, the capacity of these systems to identify opportunities to make refinements to the therapy as the dynamic nature of the disease and therapy process is exposed may be their greatest contribution. Overall, the new information provided by these systems will change the face of radiation therapy.