

Northeast Oklahoma Streamlines Halcyon Planning with EZFluence

Northeast Oklahoma Cancer Institute, Claremore, OK

Northeast Oklahoma Cancer Institute (NEOK) in Claremore, OK has successfully implemented EZFluence, Radformation's automated 3D planning software, into its clinical workflow to complement its Varian Halcyon linear accelerator. As a result of their efforts, the department has seen a dramatic reduction in the time required to plan their 3D conformal plans and justify their IMRT/VMAT plans for billing.

Challenge

Certain treatment planning techniques, such as VMAT and IMRT, lend themselves quite readily to the Halcyon's 6MV flattening filter free (FFF) beam. The planning is, for the most part, straightforward and expeditious.

However, when 3D conformal radiotherapy (3D CRT) is required, the techniques that must be used to produce an acceptable plan can prove onerous and time-consuming due to the very nature of the unflattened beam.

While their department has proven successful in securing authorization to use the more complex planning and delivery techniques, there remains a significant portion of their patient population (~14%) that require 3D conformal planning techniques.

Analysis

Considering only the time spent by the dosimetrist, NEOK determined a typical RapidArc plan required approximately 1.5 hours of planning effort. IMRT was found to require a similar time allotment, approximately 2 hours per plan. In contrast, the electronic compensation (eComp) planning technique involved as much as 16 to 20 hours of dedicated planning time per plan, with an average between 8 and 10 hours.

Planning times being what they are, the dosimetrist spends approximately 63% of the total treatment planning time (adjusting constraints, coverages, balancing fluences, etc.) on 14% of the center's patient population.

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Implementing EZFluence

The primary consideration in implementing EZFluence was to determine if the script could significantly reduce treatment planning time without a compromise to plan integrity.

Results

Based on their experience, not only were the script inputs easy to understand and manipulate but also, from the very first application, EZFluence delivered comparable or superior plans. Moreover, planning times plummeted.

With EZFluence, the dosimetrist now spends an average of 20-30 minutes on planning a patient requiring 3D CRT in contrast to the 8-10 hours previously spent manually generating a single plan.

“We don’t even plan manual electronic compensators anymore. We rely solely on EZFluence due to the impressive time savings.”

– Leonard Berbee, NEOK dosimetrist



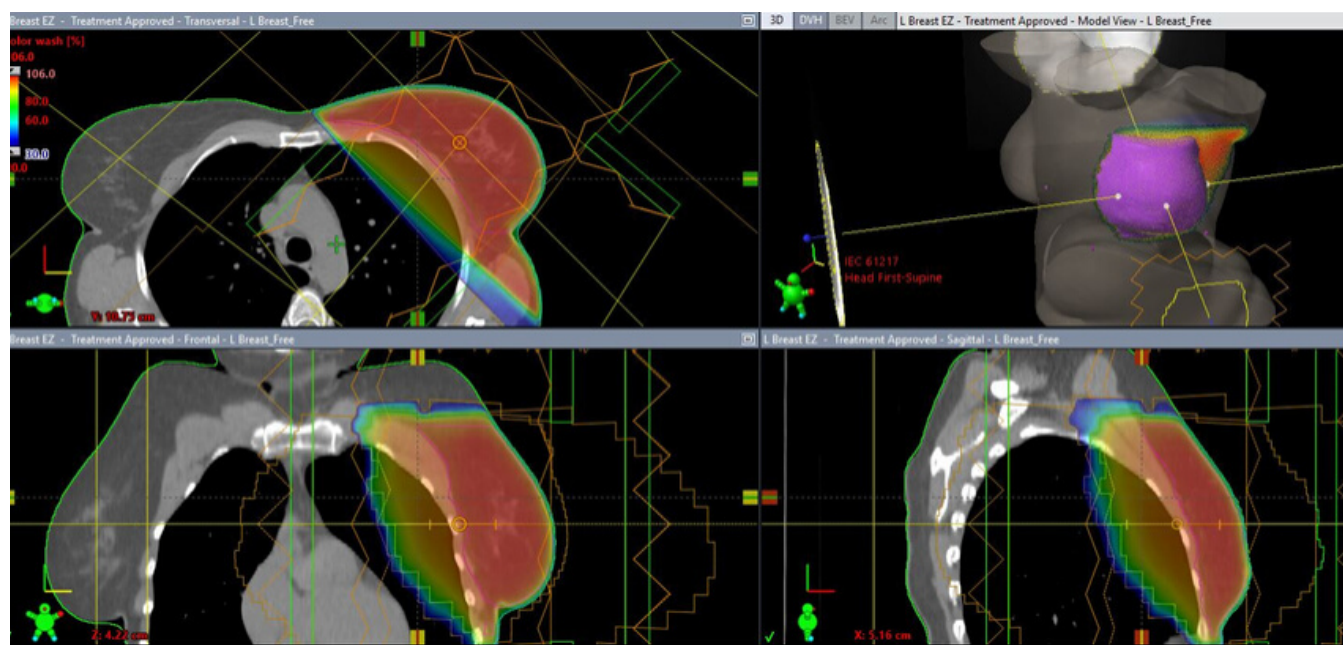
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Using EZFluence to develop 3D CRT plans for the Halcyon results in a **dramatic decrease in treatment planning time, as much as 90%**, without any loss of target coverage, increase in hot spot volumes, or erosion of OAR sparing.

NEOK has found EZFluence useful not only for automating 3D-CRT planning for the 14% of their patients that require it, but also to expedite IMRT/VMAT justification plans for billing purposes. Due to insurance scrutiny of IMRT for breast, skin, and lung, their department now uses EZFluence for approximately 50% of their planning needs.

“While it’s tempting to hawk only the cost-savings aspect of EZFluence, perhaps the more important point is that our dosimetrist can now devote more time to other, more demanding and complex treatment planning techniques for difficult treatments. The end result is fewer touch points in the creation of our plans and the enhanced ability to handle ‘overflow’ situations.”

– Jennifer Fisher, NEOK physicist



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The Halcyon was designed by Varian for fast, efficient, and standardized treatment delivery. The team at Northeast Oklahoma Cancer Institute has leveraged these benefits in developing a department with a reputation for its efficient workflow. As a Halcyon demonstration site, NEOK has shown it's possible to treat approximately 15-20+ patients within a half-day time window.

By incorporating EZFluence into its workflow, the department extended speed and efficiency to the planning side of operations, easing dosimetry constraints and reducing the burden required to produce top-quality treatment plans.

