

Plan Evaluation

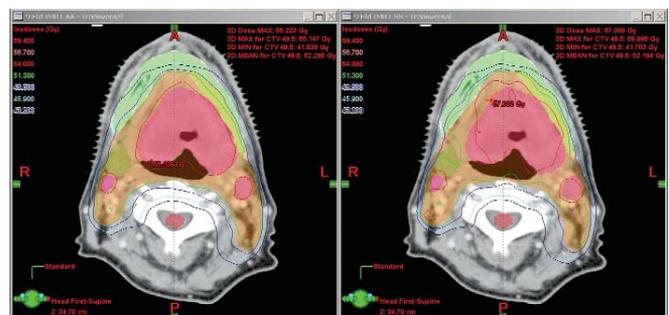
Comparing different plan modalities helps an oncology team decide on the optimal method for therapy. With Eclipse, clinicians can combine, compare, and evaluate different treatment modalities including 3D conformal, intensity-modulated radiation therapy (IMRT), electron, proton, and brachytherapy on a single integrated planning system. They can also conveniently compare candidate plans in order to decide on the most effective course of patient treatment. Eclipse workstations can be distributed throughout a clinic so plans can be evaluated anywhere, anytime, which speeds up the planning process.

Multiple Dose Displays

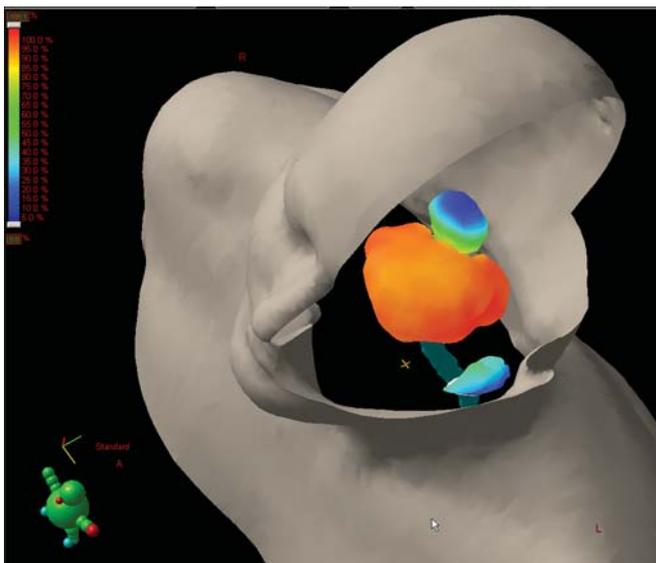
Clinicians can evaluate plans on fused multi-modality images with customizable 2D and 3D dose displays. In the beam's eye view (BEV) and 3D views, Eclipse renders isodose surfaces as wire frames or solid surfaces with user-selected colors, transparencies, and values. Interactive field-weight adjustments automatically update all dose displays giving the clinician immediate feedback. Dose cloud and surface dose renderings complement differential and cumulative dose-volume histograms (DVHs), as an effective way of visualizing target coverage and the dose to critical structures. By using the show crosshair tool with the DVH display, the clinician can point at any part of a DVH curve and the isodose level will display on the orthogonal plan views. This highlights the spatial distribution of dose in conjunction with the DVH display to facilitate the physician's review of the plan. The clinician can choose DVH line styles, colors, and thicknesses to better visualize DVH calculations.

Powerful Plan Comparison

With flexible screen layouts and intuitive plan comparison tools, the clinician can determine the best course of treatment for every patient. For fast and simple plan comparisons, side-by-side plan displays can be locked together to ensure that the same view from each plan is used during evaluation.



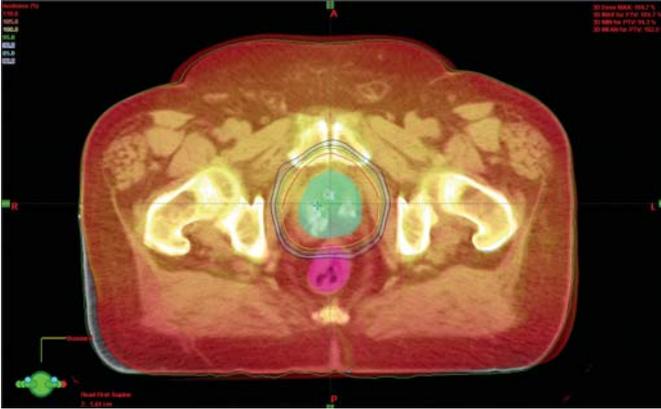
Axial views of a head and neck plan compare the dose distributions of IMRT sliding window and step-and-shoot delivery.



Surface dose rendering of a head and neck IMRT plan displays the dose distribution on the surface of the tumor, adjacent brain stem, and left parotid gland.

In addition to the qualitative side-by-side dose comparisons, DVHs for up to six plans can be displayed on the same graph for quantitative analysis. The clinician can compare the axial dose distributions for these six plans on the same screen. Using Boolean operators the clinician can calculate the DVHs for combinations of structures. The differences in two dose distributions can be quickly evaluated using plan subtraction. With plan summation, the clinician can evaluate the total dose distribution of a multi-phase course of treatment. These tools can be used across multiple treatment modalities to evaluate, for example, combined brachytherapy and external beam plans, or multiple courses of treatment.

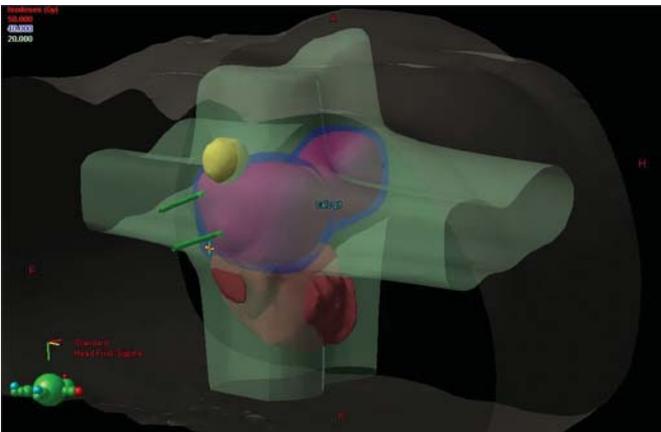
Eclipse™ Treatment Planning System



Cone-beam CT images can be fused and blended with the original CT images and used for DART.

For the ultimate treatment record and for DART™ dynamic adaptive radiation therapy, Eclipse can calculate the dose that was delivered to the patient using the actual multileaf collimator (MLC) positions and cone-beam CT (CBCT) even for a partial treatment. The dose distributions and DVHs can be compared to assess the evolution of the treatment over time. In this way, the clinician makes decisions about adapting the treatment strategy to the changing patient anatomy. If a change is needed, the plan can be quickly recreated for the CBCT image and used for subsequent treatments.

Eclipse tabulates information about dose prescription and fractionation, and summarizes dose contributions to reference points. Consequently, the clinician has an overview of the whole treatment strategy.



Eclipse displays the combined dose distributions of a four-field cervix plan with a brachytherapy boost.

Flexible Plan Documentation

Eclipse generates thorough plan documentation that meets the clinic's unique requirements for quality assurance. Hard-copy reports include BEV plots, isodose plots, and screen printouts. Clinicians can customize plan reports using a simple text editor, and they can incorporate screen captures into presentations and technical papers. DVHs can be plotted, printed in tabular form, or exported in ASCII format suitable for external analysis software.

Electronic Plan Approval

After selecting the ideal treatment plan, the oncologist approves the plan electronically. The approval is password-protected. An approved plan cannot be unintentionally modified, ensuring its integrity. When Eclipse is part of Varian's Inspiration™ integrated oncology environment, the approved plan becomes immediately available for treatment. Safety is enhanced by eliminating data transfers from treatment planning to treatment delivery. Plans can be easily converted into clinical protocol templates for reuse as class solutions for future patients.

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