

Dose Comparison and Verification of IMRT plans generated from the NOMOS™ Corvus™ Treatment Planning System Using 6 MV and 18 MV photons

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The Corvus™ inverse planning system (version 3.0) from NOMOS™ corporation was installed in our center to drive the Siemens™ Primus™ Multi-leaf collimators for IMRT treatment delivery. To verify the treatment plan is very tedious and labor intensive. Since we have two beam libraries of 6 MV and 18 MV photons installed, validation of the treatment plans on both energies were performed on the scanned solid water phantom and point dose measurements for plan comparison and verification. Several beam geometry arrangements were assumed and multiple target structures were identified. Treatment plans were then run to achieve the best coverage of target structure and most sparing of the critical organs. Point dose measurements in the high gradient area proves to be difficult to justify the end results. Film dosimetry provides an excellent tool for the dose verification though the absolute dosimetry is somewhat questionable. From the measurements of using the IMRT technique of 6X and 18X photon beams, the dosimetry errors are less than 4% in the high gradient area and the 18X provides better coverage on cases where the heavy penetration is required. In general, IMRT inverse planning provides a good supplement to the Radiation Oncology Department and is beneficial to our community hospital.