

CONFORMAL SIMULATION WITH COPLANAR BEAMS, This patient is undergoing a conformal simulation as the method to precisely define the area of disease which needs to be treated. It allows us to highly focus the beam of radiation and shape the beam to the target volume, delivering a homogenous dosage through it while sparing the surrounding, more radiosensitive, normal tissues. This will allow us to give the optimum chance of tumor control while minimizing the acute and long-term side effects. A conformal simulation is a simulation which involves extended physician, therapist, and dosimetrist time and effort. The patient is initially taken into a conventional simulator room, where appropriate markers are placed, and the patient is positioned and immobilized. One then approximates the field sizes and arrangements (gantry angles, collimator angles, and number of fields). Radiographs are taken, and these fields are marked on the patient's skin. The patient is then transferred to the diagnostic facility and placed on a flat CT scan table. Scans are then performed through the targeted area. The CT scans are evaluated by the radiation oncologist, and the tumor volume, target volume, and critical structures are outlined on each slice of the CT scan. The dosimetrist then evaluates each individual slice in the treatment planning computer with the appropriately marked structures. This volume is then reconstructed in 3-dimensional space. Utilizing the beam's-eye view features, the appropriate blocks are designed. Multiplane computerized dosimetry is performed throughout the volume. Field arrangements and blocking are modified as necessary to

provide homogenous coverage of the target volume while minimizing the dose to normal structures. Once all appropriate beam parameters and isodose distributions have been confirmed on the computer scan, each individual slice is then reviewed by the physician. The beam's-eye view, block design, and appropriate volumes are also printed and reviewed by the physician. Once these are approved, Cerrobend blocks will be custom fabricated. If significant changes are made in the field arrangements from the original simulation, the patient is brought back to the simulator where the computer-designed fields are re-simulated.