Intensity Modulated Radiation Therapy (IMRT) has been implemented in our clinic using commercial planning software (CORVUS)[1] combined with an automatic sequential delivery control system (SIMTEC)[2] for Siemens linear accelerators. The intensity modulated (IM) fields are delivered using superimposed multiple static fields shaped by multileaf collimators (MLC). The IM plans are used only for patients for whom a satisfactory plan cannot be obtained by conventional 3D techniques. In order to keep treatment times practical, the beam geometry (gantry, collimator and table angles) is carefully optimized manually. The number of intensity levels chosen for each plan is based on the principle of As Simple As Possible (ASAP) provided the clinical requirements can be met. IMRT plans are found superior to 3D-CRT plans based on dose volume histograms, isodose distributions, and special clinical consideration for each patient. The average number of gantry angles used in our IMRT plans is 3-5, and the number of intensity levels is chosen to be 3. The total number of segments have varied from 25 to 120. The corresponding treatment time (not including patient setup time) has varied from 8 to 30 minutes with daily fractions of 200 cGy. Procedures for IMRT planning, verification and dosimetry quality assurance have been developed. We find that IMRT treatment is clinically achievable with a commercial planning system and auto-sequencing delivery software. We will describe patient selection, work flow, treatment planning and verification procedures, treatment delivery scenarios and show predicted dose distributions and DVHs for patients with tumors in a variety of sites.

[1] NOMOS Corporation, Sewickley, PA
[2] Siemens Medical Systems, Concord, CA