

Purpose: To update the technology that has been utilized for designing proton dose distributions for the treatment of ocular melanoma at Loma Linda University Medical Center since 1990.

Method and Materials: For the past decade the treatment planning system utilized for ocular melanomas at LLUMC has been a *Digital VAX 4* workstation. This workstation utilizes software that was developed at MGH specifically for the treatment of ocular melanomas. Although the system has proven useful in the treatment planning process, the technology is antiquated and can be improved by switching to a PC based platform. A new eye treatment planning system has been commissioned and implemented at LLUMC. The new system, EYEPLAN 3.01, is PC based and was developed by *CCO, Radiotherapy Quality System* in Clatterbridge, England. Following treatment machine data entry into the new treatment planning system, the commissioning process consisted of the following: Confirmation of correct clip entry orientation, proton range and modulation values, lateral margins, and dose volume histograms. Several plans have been duplicated on both the old system and EYEPLAN for comparison.

Results: Proximal and distal range comparisons are within 0.2mm. In the patient plan comparisons the same tumor range was generated to within 0.1mm. In addition the isodose distributions showed virtually no visible differences. The aperture cutouts generated by each of the programs were within 0.5mm. Finally, EYEPLAN 3.01 has the capability of including an eyelid in the path of the beam.

Conclusions: The state-of-the-art PC based treatment planning system, EYEPLAN, has been successfully commissioned for clinical use at Loma Linda University Medical Center. Comparisons made between the old planning system and EYEPLAN suggest that the design of proton dose distributions remain consistent.