

In recent years, the sophistication and complexity of clinical treatment planning and treatment planning systems has increased significantly, particularly including 3-D treatment planning systems and the use of conformal treatment planning and delivery techniques. This has led to the need for a comprehensive set of quality assurance (QA) guidelines that can be applied to clinical treatment planning. This course will summarize some of the results of the recent AAPM Task Group 53 report on "Quality Assurance for Clinical Radiotherapy Treatment Planning". The purpose of this report is to guide and assist the clinical medical physicist in developing and implementing a comprehensive but viable program of quality assurance for modern radiotherapy treatment planning. The scope of the QA needs for treatment planning is quite broad, encompassing image-based definition of patient anatomy, 3-D beam descriptions for complex beams including multileaf collimator apertures, 3-D dose calculation algorithms, and complex plan evaluation tools including dose volume histograms. The Task Group recommends an organizational framework for the task of creating a QA program which is individualized to the needs of each institution and addresses the issues of acceptance testing, commissioning the planning system and planning process, routine quality assurance, and on-going QA of the planning process. This report, while not prescribing specific QA tests, provides the framework and guidance to allow radiation oncology physicists to design comprehensive and practical treatment planning QA programs for their clinics.

Objectives:

1. Organize and review the major issues for QA of RTP systems and their use
2. Review of suggested formats for testing
3. Suggestions for organized support for RTP QA