AbstractID: 14445 Title: Virtual Simulator CT QA

The virtual CT simulation process is a vital component of radiation oncology planning . It is during this step that a patient's CT scan is performed, which is then transferred to a virtual simulation system. Depending on the vendor and configuration the system may be used for applications such as image registration, structure delineation, field arrangement and anatomical measurements. A robust quality assurance program ensures that images and structures created during this step are rendered and transferred accurately. Practical methods of performing standard QA tests which evaluate parameters such as image uniformity, resolution, and distortion will be presented. New technology has brought multi slice scanners, PET-CT scanners, breath gating systems and image fusion. Tests that address the quality and accuracy of these newer technologies will be also presented. SRS and SBRT require an enhanced arsenal of QA tools due to a superior requirement in spatial and anatomical accuracy. Tests will be described that address these requirements as well.

Learning Objectives:

1) Explain how to perform tests that evaluate certain aspects of Virtual Simulator QA

2) Describe the components of the Virtual CT simulation process that require testing

3) Describe the effects that poor a QA program could have on treatment planning