AbstractID: 4961 Title: Implementation of ATC Method 1 for Clinical Trials Data Review at the Quality Assurance Review Center

Purpose: To develop the capability at the Quality Assurance Review Center (QARC) to receive and review digital radiation therapy treatment planning data (TPD) for clinical trial case review.

Method and Materials: A system of software ("ATC Method 1") developed at the Image-guided Therapy QA Center (ITC) as part of the Advanced Technology QA Consortium (ATC) to receive, process, and review volumetric TPD for clinical trials was ported to a Linux workstation at QARC. The system includes an FTP server for receiving TPD (in DICOM or RTOG data exchange format) from protocol participants, utilities for importing TPD into a local file format, and the web-based Remote Review Tool (RRT) for QA of ROIs, isodoses, DVHs, and dose statistics. (Proprietary software components were used by special arrangement with CMS, Inc.)

Results: Software installation and maintenance were performed remotely at QARC by ITC personnel, with weekly teleconferences to coordinate the development effort. ITC software was adapted to better support the QARC QA process. RRT enhancements include selectable DVHs, distance measurement tool, and image grayscale presets. QARC software was adapted to support RRT invocation directly from the QARC database user interface. The system is in use for six COG, CALGB, ACOSOG, and ECOG protocols; 28 cases from 15 institutions have been received and reviewed (3/1/06).

Conclusion: Widespread use of new treatment modalities such as IMRT, makes use of 3D datasets essential for complete evaluation of ROI delineation and assessment of agreement of dosimetric parameters with protocol requirements. This project demonstrates that ATC Method 1, successfully used in support of RTOG trials for many years at ITC, can be implemented at other QA centers. The effort required, however, was significant and tools must be tailored to each individual QA center's computer infrastructure/QA process.

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