AbstractID: 10488 Title: An electronic Database for Radiation Oncology Physics Quality Assurance (DROP QA)

Purpose: Electronic charting has become a standard of care in the Radiation Oncology community. Electronic records for quality assurance however, are not commonly available. Most clinics rely on either paper records or customized spreadsheets for quality assurance and compliance. Any changes in the QA program need to be made across several different areas (printouts, spreadsheets, institutions) increasing the chances of mistakes. By creating a database which includes all sites and equipment, our physicists make efficient use of combined resources and time in completing the required quality assurance tests.

Method and Materials: The Database for Radiation Oncology Physics Quality Assurance (DROP QA) has been developed and implemented in our system (3 sites, 6 linacs, 2 HDR). The database is located on the network making it available at any computer in the system. Each clinical site is defined with their linacs and/or HDR. The database is adaptable to any linac and has all of the TG-40 recommended tests included. HDR tests as required by state and NRC regulations are also included. Chambers and electrometers can be used at any site and in any combination. Direct communication with the MAX 4000 electrometer (Standard Imaging, Madison, WI) and the RMD-200 remote motor drive system (CNMC Inc, Nashville, TN) are built into the database.

Results: Quality assurance data for linacs and HDR units are readily available from any computer in the health system without the need to locate printed records. QA procedures are done rapidly with the built in communication to electrometers and depth dose apparatus. Machine outputs for all energies can be done without re-entering the room.

Conclusions: DROP QA is an efficient program to centralize and standardize QA within a health system. Future versions will increase efficiency by including automated tests (table, gantry, collimator, light field, MLC) linked directly to the database.