AbstractID: 10734 Title: Design of a flexible, web accessible, clinical outcomes database to support evidenced based radiation treatment planning

Purpose: Lack of patient outcome data for use in retrospective examinations is a notorious problem both for large and small clinics wishing to gain insight on their control rates and morbidity statistics and to correlate these with DVH based endpoints. Often spread sheet based approaches are attempted, but these typically prove inadequate for addressing the department wide problem. Most clinics lack the resources to design databases sufficiently flexible to accommodate evolving determination of clinical endpoints and design of an interface that integrates easily into daily clinical practice. The object of this research was to develop a database and web based interface, to solve these problems and which could be shared as part of an open source effort among multiple institutions.

Method and Materials: Objectives for SQL database design were 1) ability to store DVH data and analysis 2) ability to accommodate new or evolving studies without modification of table structure 3) ability to integrate with other department objectives e.g. QA 4) ability to import data from current record and verify system. Web based interface and database were used to conduct internal outcome studies for several anatomic target sites.

Results: Meta data tables were used to define, and manage queries from independent endpoint data tables. Database and interface have proven clinical viability and become part of our program to improve documentation. Data reports can be web or spreadsheet based. Largest hurdle for implementation was staff time for data input from charts not yet structured to simplify locating endpoint data.

Conclusion: Department databases for monitoring outcome are needed to support evidenced based approach to treatment design. The current application works, is inexpensive, and is promising as the basis of a multi-institutional open source effort.