

AbstractID: 7692 Title: Comprehensive assessment methodology for radiation oncology information systems

Purpose: To develop a comprehensive methodology to systematically assess the information flow and the performance of radiation oncology information systems (ROIS).

Method and Materials: Radiation oncology information objects were classified into Clinical Processes, Information Management and Technological Innovation Integration. Comprehensive maps of the IS/IT infrastructure, processes and information flow were generated by a team of experts. These maps served as the basis for testing and evaluating connectivity and process flow and to guide the development of a quantitative survey to assess the performance of an ROIS. Performance was defined as a measure of how the ROIS matches the site-specific clinical practice and IS/IT infrastructure. Each group of tasks, activities and processes, associated with the three areas classified above, were hierarchically controlled according to importance in patient care and scored by the team members. The survey was applied and experiential feedback recorded in a sample of clinical areas for two test ROIS.

Results: Practice specific process and infrastructure maps were generated. Functional and interoperability problems were identified and some resolved during the mapping process. The developed survey was applied and initial results indicate a range of ROIS compatibility with clinical process. While different, each ROIS demonstrated above adequate performance. Experiential feedback provided suggestions to improve ROIS integration and site-specific processes.

Conclusion: This work attempts to provide an objective tool to understand and analyze information flow and its compatibility with a given ROIS in a clinic specific patient care setting. Mapping provides insight into process communication, interoperability and efficiency. The hierarchy and importance of various characteristics are customizable to a given clinical practice and thus allow the tool's broad applicability. Proper assessment of information flow and matching to an ROIS will provide a more efficient and more effective care delivery setting.

Conflict of Interest: Supported in part by Varian Medical Systems