Abstract ID: 16640 Title: An electronic whiteboard and associated databases for physics workflow coordination in a paperless, multi-site Radiation Oncology department

Purpose: To enhance medical physics workflow coordination within a multi-site, paperless radiotherapy department, a virtual physics whiteboard, process control analysis and problem reporting tools were developed. In a large department, coordination of planning and verification activities among cross-site staff can be particularly challenging. Furthermore, Failure Mode and Effects Analysis (FMEA) on department tasks revealed that physics process steps scored particularly high as potential safety risks, making physics process control a high priority.

Methods: As part of a department-wide, data-driven quality initiative, a "No Fly" policy was introduced in 2010 that mandates automatic delays to patient treatment starts when delays in the treatment preparation process occur. To address potentially high safety risks in physics tasks, tools were developed to decrease delays in physics-specific process steps. A virtual whiteboard was created that provides a summary view of the status of all current patients. Key physics tasks are structured with timing guidelines specified in the physics process flow chart. As they are completed, task items are checked and dated. Planning delay events are reported in a new quality reporting database for monthly Quality Management committee review. Significant process or patient safety issues that become evident may lead to formal changes in policies and procedures using a new policies database, and evolving process control is evaluated using a new quality analysis database that examines task completion slip days.

Results: A majority of physics processes have shown a decrease in variability, pointing to increased process control, while others have been flagged as requiring further investigation and mitigation measures.

Conclusions: Process and quality control in a multi-hospital radiation medicine department is critical in maintaining patient safety and smooth workflow. A set of databases has been implemented as tools for monitoring, analyzing, and improving physics processes.