

**Purpose:** To describe a process for learning from radiation treatment plan(RTP) rejections by physicians and physicists for improvement of quality, safety, and efficiency of treatment planning. In our clinic IMRT treatment plans are pre-checked by physicists for technical and quality validation before review by the physician. Any problems identified during physics or physician reviews of RTPs offer an opportunity to identify systematic and random deviations and to develop tools, processes, and training to eliminate or reduce such problems in the future. We describe a process wherein the collection of plan rejections and related reasons is considered a part of normal process and not as additional work.

**Methods:** In our clinic we use the DMAIC formalism for management of our operations, whereby processes are understood as comprising of define, measure, analyze, improve and control activities. Systematically quantifying plan rejections and the corresponding reasons offers an opportunity for improvement of treatment planning process and monitoring the effectiveness of corrective measures. This was accomplished through a set of features in our electronic whiteboards that seamlessly and effectively collect rejection information that were further analyzed for identification of improvement opportunities. Efficacy of any implemented improvement measures can then also be evaluated by quantifying future rejections. In this study we concentrate on plan rejections by physicists.

**Results:**There were 110 plan rejections by physicists from September 2010 to Mar 2011. The rejections were due to plan-quality, plan technical integrity and in some cases data-entry errors. These rejections were used to identify systematic opportunities for training and better education and for design of in-house developed auto-planning and quality-control scripts.

**Conclusions:**Systematic and sustainable collection of treatment plan rejections for purposes of process improvement is possible. We have demonstrated that this data collection can be seamlessly integrated in normal treatment planning process through the use of electronic white boards.