

AbstractID: 2535 Title: A cost-effectiveness model for new radiation oncology technologies

Purpose: The additional equipment and personnel costs of supplying Intensity Modulated Radiation Therapy (IMRT) technology have caused many to question if the marginal gains in patient health-related quality of life are worth the additional cost. A novel IMRT technology, helical tomotherapy, provides the opportunity to study cost and effectiveness for patients. **Method and Materials:** This methodological study proposes to evaluate the cost and effectiveness of treating conventional radiotherapy versus tomotherapy IMRT patients prospectively, among several institutions. The cost of treating patients varies between institutions, depending on personnel, equipment and overhead costs; however, the nature and quality of services provided are expected to be consistent. **Results:** The methodology study tracks cost information at a single institution, and simultaneously as the median from multiple institutions. Effectiveness measures include both standard quality adjusted life year instruments completed by patients and performance status measures completed by institutional personnel. In addition, disease specific effectiveness measures are accommodated in the study. Each participating institution uses the same effectiveness measures to track patients with similar disease. **Conclusion:** The resulting cost and effectiveness data is available to investigators at any point during the study, immediately upon the completion of a trial, or when statistical acceptability is achieved.