Purpose: Every Tomotherapy treatment planner deserves the best results to deliver the prescribed dose to cover target and minimize the dose to OAR’s. The goal is not only to meet the prescription but to provide the higher standard of treatment plan ideally. Tomotherapy planning system provides variety of functions to allow planners have different options to reach such goal. However, the question is how the best optimized plan will be presented to clinician for final approval. This study investigated eight cases of lung radiosurgery. Three main factors to choose are pitch, modulation and expansion of PTV avoidance. The highest score of optimized plan will be selected based on certain criteria on four objects has been met.

Methods: Eight cases of lung radiosurgery treatment plans were selected. The hyperfractionate of 60Gy in five treatments were used in this study. The base line was set with 1cm extension of contours of avoidance of PTV superiorly and inferiorly and compare against the ones without. Four scoring objects are: DVH of PTV, tumor_reside lung, contra lung, both lungs. Spinal cord sparing was additional object to be evaluated. Different trials on the various pitch values and modulation were applied for comparison.

Results: The study showing 1cm avoidance extension, minimal pitch of 0.215 with modulation factor between 2.1 and 2.4 has higher score in target coverage with tighter isodose and lower DVH curves to four highlighted OAR’s in this study.

Conclusions: The nature of Tomotherapy treatment affords promising conformal radiotherapy treatment. However, the treatment can be deliberate by using optimal parameters to meet the objectives. In order to achieve the optimized Tomotherapy plan, the effort to select lower pitch and higher modulation need to be set for the preparation of Tomotherapy beamlets.