

RTOG 0617

6.1.5 Heterogeneous dose calculations: For purposes of this protocol, superposition/convolution dose calculation algorithms demonstrate agreement between planned versus delivered dose. Institutions with treatment planning software utilizing superposition/convolution dose calculation algorithms will need to complete a questionnaire and submit a digital "dry-run" test to the ITC. Institutions using alternative algorithms (i.e. Clarkson or pencil beam) will need to credential their treatment planning system by irradiating the Radiation Physics Center (RPC) lung phantom. Doses falling within criteria established by the Medical Physics Committee will be deemed acceptable.

RTOG Medical Physics Committee Lung Heterogeneity Correction Proposal for Older Algorithms, including Clarkson and Pencil Beam

The heterogeneity correction algorithm must be validated by the RPC lung phantom such that greater than or equal to 90% of the points in the central PTV the agreement between the dose measured in the RPC phantom and the heterogeneity-corrected dose calculated by the TPS is within +/- 7%.

For points in the steep dose gradient at the edges of the field, the distance to agreement between the measured dose in the RPC phantom and the heterogeneity-corrected calculated dose by the TPS is within 5 mm.