

RT Contouring for Clinical Trials

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Target and Critical Structure Identification

- The treatment planning process is limited by the accuracy of the contouring process
 - The target(s) and critical structures are not easily seen on some diagnostic studies
 - image registration allows information to be obtained from different imaging studies
 - while each new study can add information, it can also increasing the potential for error
 - image registration is not robust

Methods for Improving the Accuracy of Contouring

- Education
 - Provide Atlas showing different examples
- Training
 - Site-specific ASTRO courses on contouring
- Credentialing
 - Test investigators using benchmark cases
- Rapid Review
 - Review and suggest changes before treatment

Methods for Improving the Accuracy of Contouring

- Rapid Review
 - Requires a review tool that is interactive and fast
- Special tools are needed to communicate between trainers and trainees
 - annotation capabilities are needed to show exactly where contours should be modified

Evaluating Contours

- There are various methods for comparing and evaluating contours
 - compare the volume defined by contours

Conclusions

- Using RT treatment plans to evaluate quality of life, toxicity or survival depends on contour accuracy
- There are many reasons why the definition of targets and critical structures can be incorrect
- Education, training, credentialing and pre-treatment PI review can be used to control the accuracy of the contouring process