Submitting IGRT Data to the ITC
RTOG 1016

The preferred method for sending information for credentialing for IGRT is using the DICOM format. The required information is the planning CT dataset plus the daily IGRT datasets. It is also important to include the treatment planning information. This information can be sent as DICOM. You will also be asked to send the patient shift information for each IGRT dataset in the form of a spreadsheet documenting the changes. The DICOM and planning information will be used to repeat the image fusion process so that a comparison with your shifts can be made.

In the case of 2D imaging, it will not be possible to send the information using the required image transfer formats. This is because some manufacturers use a proprietary format. In this case, the verification process will use "screen-captured" images. The exact details of this process are harder to describe because they are somewhat dependent on the area of the body being treated. The institution should discuss the details of this process with the physicist PI named on the protocol. The general idea of using screen-captured images is to use features of the image registration software to demonstrate the results of the registration process. That is, split screen or spyglass features can be used to demonstrate these results.

The number of IGRT datasets to be sent forward for each patient is usually 5 (RTOG 1016 requires a minimum of 5 treatment day's images). This number can vary for different protocols. For example, SBRT protocols that use 3 fractions require this number of daily IGRT datasets. Protocols that use many more fractions will use the 5 fractions. In this case, the 5 fractions should be sequential to guard against institutions sending only the best results from a larger data pool. Please refer to each individual protocol regarding requirements for pre and post correction images.

Upon approval of the 5 treatment day IGRT images, the RTOG will notify the institution that they have completed this credentialing step for entering their first patient. The first registered patient's IGRT data from each institution will then be submitted and analyzed in the same way before permission is given to enter the second patient. At this point, no additional IGRT data will be gathered. (see section 5.2.2.2 of RTOG 1016)

For most protocols, a single up-front patient is needed in order to enter an institution's first patient on the study. This patient should be selected to best agree with the patients to be treated on the protocol.

In order to complete the IGRT credentialing your institution must submit the following to ITC:

- Planning CT with structures, dose and RT plan in DICOM RT format for a single patient treated on, or similar to the protocol requirements
- IGRT localization images:
    - For 3D: Cone-beam CT (CBCT) in DICOM RT format or

- For 2D:Screen-captures of the registration of these images (refer to second paragraph)
- Completed IGRT spreadsheet documenting patient positioning shifts

After this data has been transmitted to the ITC you must complete a DDSI for the ITC and then email the ITC at itc@wustl.edu

After the IGRT review is completed your site will receive an approval letter from RTOG to enroll patients onto the study.