

**June 2021 through January 2022 Therapeutic and Diagnostic Machine
Medical Reportable Events (MRE)**

Therapeutic

1.	<p>A patient had a lymph node biopsy scar and a lumpectomy scar on her left breast. In CT simulation, the physician placed the wire to mark the location of the boost at the wrong scar. The physician then contoured the wrong boost volume and treated that incorrect volume for three of five fractions at 200 centigray per fraction. A check box will be added to the CT Simulation document for therapist double-check of location of boost in addition to the following statement “Check if more than 1 scar related to current procedure”.</p> <ul style="list-style-type: none"> • If there is more than one scar, or any issue related to correct localization of treatment volume, the note will be added to the simulation document and patient setup notes. • Reiterated to therapists the need to speak up whenever something doesn’t seem right. • Ensure diagnosis is read out clearly during chart rounds. • New boost plan, “Boost_New” was created to deliver the previously prescribed dose to the correct volume.9/10/2021
2.	<p>A patient was scheduled for 10 fractions of 7 Gray to the lower lobe of the left lung. The first 2 fractions were delivered correctly. The third fraction was delivered 1.5cm superior to the actual target volume. The amount of the targeted volume receiving 90% of the prescribed dose was 10-30%. This was discovered during a review of the CBCT images. The misalignment most likely came from a deeper inspiration during the breath hold. During the third treatment, the treating therapist was not familiar with the patient and their treatment volumes. It is believed that the assisting therapist did not thoroughly review the imaging prior to beginning the treatment. There is no expected additional toxicity to the patient. No additional fractions were added to the treatment. All therapists were informed of the misalignment. Two therapists should review and agree on the imaging match prior to treatment. The treating therapist should be someone who is familiar with the patient. 9/27/2021</p>
3.	<p>The patient was to receive 5 treatments for palliative therapy for cancer of the thoracic spine and at two other locations. On the second and third days of treatment, the therapist set up the patient using the tattoo and the marks on the patient’s skin from the first treatment. After the third fraction, a medical physicist did the second physics review and noted that the field was off by approximately 2 cm, which put it one vertebral body higher than intended. A new treatment plan was created for the remaining 2 fractions. The region above the intended treatment area received a dose that differed by more than 20% of the total prescribed dose. The event occurred because the therapists made an error in interpreting the kV image of the patient resulting in misalignment by one vertebral body. The error was not caught by the physician who reviewed the setup prior to treatment. No anticipated impact to the patient. To prevent recurrence of the event, the Radiation Oncology Department will ensure that kV images used in setup include a bony landmark.9/28/2021</p>
4.	<p>A patient was scheduled for 4 fractions for 48Gray total. The 1st fraction was Tuesday, October 26 the 2nd fraction was Wednesday, October 27th. A therapist noted after treatment that the set up looked different and the lasers and table were out of position.</p>

	<p>The intended treatment site only received 0.4 Gray of the 12 Gray that was planned. During the time of the first fraction, the table parameters were not saved in the system for future reference, as is standard practice. Due to this, the setup needed to be reconfirmed on the second fraction. The slight adjustments were made and approved by physician, physics, and radiation therapist, but the imaging software was not locked. An inadvertent click/drag of the mouse occurred before table shifts were sent to the machine. The patient's skin received approximately 8 Gray of unintended dose from the isocenter shift. There is no expected health effect caused by this radiation exposure and patient follow up already standard of care for any radiotherapy. The patient's treatment was postponed and re-planned for the following week after a thorough review of the first and second fractions was performed. At time of confirmatory simulation, final table parameters will be acquired for the entirety of treatment. Saving the table parameters for the entire treatment will allow significant errors in the table settings to be flagged by the software for subsequent treatments. The Radiation Therapists involved will be counseled and re-educated on the need to adhere to standard practices. Upon confirmation and approval of isocenter at the treatment console, the imaging will be locked, thus limiting the potential of inadvertent movement thereafter. The locking of the software is often performed but will now be required as standard practice. After confirmation and approval of isocenter by the physician and medical physicist, two radiation therapists must verbally state their agreement of approved shifts before sending to the treatment console. This final verification is a new action incorporated into standard practice. 10/27/2021</p>