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Image Guided Radiation Therapy

Coding & Coverage Guidance for Optical Surface Mapping System Technologies

Image guided radiotherapy (IGRT) is a form of radiation therapy that utilizes imaging localization and/or tracking technology to guide an action(s) that modifies the treatment in reference to the intended target. In IGRT, the external beam radiation treatment setup is accomplished using these tools to accurately localize the target volume. This data is compared to the designated target(s) as delineated on the treatment isodose plan. An adjustment may then be required to achieve an accurate concordance of dose distribution with the original plan.

Some IGRT systems use surface guidance, or optical surface mapping systems technology, to assess the external topography of a patient to improve accuracy of patient positioning. Using three-dimensional optical reflection, an image of the patient's surface contour is reconstructed and compared with dedicated software to a surface reference image derived from the 3-dimensional patient surface rendering from the prescribed isodose plan. Deviations from the expected position of the reconstructed surface image are calculated and then corrected with table position shifts prior to initiation of the radiation beam. If used during the beam delivery, the beam will only be turned on when the surface image demonstrates alignment with proper accuracy and expected patient positioning.

As an example, this technology may be used for patients with left sided breast cancer. These patients have an increased risk of late cardiac morbidity following radiation therapy.[1-3]. Furthermore, reduction in mean heart dose from radiotherapy has been shown to decrease the risk of treatment related ischemic heart disease.[2] Treatment with deep inspiration breath hold (DIBH) increases the separation between the target breast tissue and heart, thereby, allowing for decrease of cardiac dose.[4] Optical surface mapping has been shown to improve the reproducibility and reliability of DIBH treatments in patients with left sided cancers.[5,6] Furthermore, the reduction in cardiac dose with optical surface mapping reduces the risk of early cardiac perfusion defects associated with standard tangential beam treatments.[7,8]

When appropriate, optical surface mapping can be coded with either HCPCS code G6017 or CPT code 77387, depending on the site of service. HCPCS Code G6017 *Intra-fraction localization and tracking of target or patient motion during delivery of radiation therapy, each fraction of treatment*, can be used to describe the use of surface guidance technology. While the code does not have a relative-value unit assigned under the MPFS, some Medicare Administrative Contractors and private payers will pay for it.

CPT code 77387 *Guidance for localization of target volume for delivery of radiation treatment delivery, includes intrafraction tracking, when performed* combines stereoscopic x-ray guidance and ultrasonic guidance with tracking and observing patient motion during radiation therapy using surface rendering to calculate precisely any patient movement in all six degrees of freedom, and monitor respiratory motion to confirm that is within the planning parameters. This code is only recognized by CMS in the Hospital Outpatient Setting, but may be used by some private payers in both the HOPPS and MPFS settings

<u>Coding Guidance:</u>

3-dimensional optical tracking should not be reported when the system is used solely for the initial patient alignment and not for software/hardware enabled intra-fraction tracking. When appropriately

used in scenarios as described in the previous section, 3-dimensional optical tracking should be reported using the professional components of either CPT code 77387-26 or HCPCS code G6017-26. The radiation oncologist must document their professional work for each instance.

These codes should not be billed with SRS or SBRT services (77371, 77372, 77373, 77432, 77435) as IGRT services are already bundled into these codes.

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