Coding and Documentation for 3-Dimensional Simulation, 77295

Carl R. Bogardus

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by Carl R. Bogardus, M.D.

Q: What documentation is required for 3-dimensional simulation and what does code 77295 include?

A: Therapeutic radiology simulation is the process of establishing radiation treatment portals to a specific treatment volume. Simulation may be performed more than once during a course of therapy, but only once per day. The recommended guidelines from the American College of Radiology limit 3-dimensional simulation to one time per course of therapy. Documentation of any simulation requires a written record of the procedure, a hard copy of electronic images, and evidence of image review by the physician.

The code 77295 includes the work performed for teletherapy isodose plans (code 77305, 77310, and 77315). Such plans are included in the final 3-dimensional plan. Isodose plans may be done at other times during the course of therapy.

3-dimensional simulation uses computer generated 3-dimensional visualization of multiple CT slices displayed in a 2-dimensional video format. The 3-dimensional reconstruction outlines the shape and dimensions of the tumor, adjacent normal structures, and most important, those structures that require protection from the radiation beam. The tumor volume and all critical organs are delineated in the treatment planning system and may be viewed from any appropriate angle in virtual reality, 3-dimensional display. The physician can manipulate the images and obtain true beams eye views.

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Q: When is 3-dimensional simulation warranted?

A: 3-dimensional simulation and the subsequent conformal treatment are clinically warranted when one or more of the following conditions exist:
- The volume of interest is irregular and in close apposition to normal structures that must be protected.
- The volume of interest is in such a location that it cannot be clearly identified under conventional fluoroscopic guidance.
- The final boost volume of interest must be constricted to the exact tumor volume with its irregular configurations.
- Multiple conformal portals are necessary to cover the volume of interest with close margins and protect immediately adjacent normal structures.
- Beams eye views of multiple portals must be established for conformal treatment delivery.
- An immediately adjacent region has been previously irradiated and abutting portals must be established with high precision.

Q: Which procedures should be reported in conjunction with 3-dimensional simulation?

A: Procedures that would normally be reported in conjunction with 3-dimensional simulation are:

Pre-planning set-up procedures. The patient may be simulated on a conventional or CT simulator to determine the approximate isocenter of the proposed course of treatment. Positioning devices, such as aquaplast and alpha cradle, may be fabricated to immobilize the patient. Immobilization devices should be billed as 77334. The simulation should be billed as a complex simulation 77290.

Treatment planning CT scan. A treatment planning CT scan 76370 will be used to gather the appropriate CT data, resulting in the 3-dimensional simulation. The code 76370 was designed for treatment planning and not intended to be a diagnostic scan. Thus, the scan is usually of a limited number of slices. With the increased complexity of 3-dimensional planning, full diagnostic CT scanning is being performed with contrast media, with multiple (50- 80) slices requested for high resolution. The specific code for a full diagnostic CT scan is warranted, and it is appropriate for the diagnostic radiologist to render a comprehensive report.

3-dimensional simulation, 77295. This procedure must be performed on a date other than the day of the preceding conventional simulation. Following completion of the 3-dimensional scan, appropriate shielding devices will be designed. Because each portal usually is individually configured, each would result in a complex treatment device charge, 77334. Each portal may also have a separate beam monitor unit calculation, which justifies the billing of individual 77300 codes.

Post 3-dimensional simulation. Following the 3-D simulation, block check simulation may be performed to determine the accuracy of the shielding blocks. This is billed as a simple simulation 77280 for block check. If a dose volume histogram is produced, this is billed as a separate 77300 and must be specifically described.