

Simulations – Radiation Oncology Coding Standard

CPT® Codes 77280, 77285, and 77290

Original Date: April 2011

Last Review Date: November 2020

Last Revised Date: March 2024

Implementation Date: April 2024

Simulation: CPT® Codes 77280, 77285, and 77290

Professional and Technical

A simulation is the process of determining and establishing the radiation therapy portals for a specific treatment volume without delivering a treatment. The process includes determination of the treatment position, necessity and fabrication of immobilization devices, and acquisition of the images and data necessary to develop a plan. There are three levels of simulation complexity:

- **77280** Simple; simulation of a single treatment area.
- **77285** Intermediate; simulation of two separate treatment areas.
- **77290** Complex; simulation of three or more treatment areas; or any number of treatment areas if any of the following are involved: particle therapy, rotation or arc therapy, complex blocking, custom shielding blocks, brachytherapy, hyperthermia probe verification, or any use of contrast materials.

The level of complexity billed for each simulation service is determined by the number of treatment areas unless an additional item listed in the complex simulation descriptor is met at the time of simulation.

Simulations may involve several types of equipment, e.g., treatment table, conventional simulator, or CT-based simulator. In some circumstances such as skin cancer, no equipment may be needed. Although multiple simulations may occur during a course of therapy, no more than one simulation should be reported on the same date of service except for brachytherapy, which allows for two (2) simulations, if performed, for verification of source placement on the same date.

- **Simulation (CPT® codes 77280, 77285, and 77290)** – These simulations include establishment of the patient’s treatment position (supine, prone, decubitus, arms akimbo, etc.). They may also include the placement of reference marks to delineate the area to be treated and may include the creation of custom immobilization devices (Aquaplast masks, Alpha Cradles®, Vac-Lok™, etc.) and gantry and table parameters. Items such as the use of contrast and complex treatment devices may elevate the level of simulation to complex

(CPT® code 77290). When contrast or complex immobilizations are not utilized, the level of simulation is based on the number of treatment areas and/or level of billable immobilization devices (breast board, etc.).

- **Simple simulation (CPT® code 77280)** – A simple simulation (CPT® code 77280) on the first day can be charged for an electron boost to verify patient setup including the block location, block design, gantry clearance, and isocenter.
 - A simple simulation should NOT be reported daily for placement of the treatment field. For example, if a dermatologist performs a simple simulation in preparation for the delivery of 25 fractions of superficial radiation therapy for a skin cancer, then a total of only one unit rather than 26 units of CPT® code 77280 should be billed.

- **Verification Simulation (CPT® Code 77280)** – Verification simulations are coded as simple simulations (CPT® Code 77280) regardless of the number of areas included in the verification process. This process includes verification of port blocking, isocenter placement and whether the patient is in the proper treatment position. For this process to be complete, all ports must be imaged, reviewed, and approved by a Radiation Oncologist prior to the start of the patient’s treatment. Image-guided radiation therapy (IGRT) on the same date of service as verification simulation must be separate and distinct from the verification simulation process of imaging non-IMRT fields with corresponding blocking. Verification simulations for IMRT planning are considered bundled into IMRT planning CPT® code 77301 and therefore are not separately billable.

Standards for Simulation Codes:

- Only one simulation charge is allowed per date of service except for brachytherapy treatments delivered twice per day. This exception only applies if the work is performed and documented.
- One (1) initial simulation (CPT® codes 77280-77290) may be approved per modality except for courses with IMRT planning. Simulations for IMRT planning are bundled into IMRT planning (CPT® code 77301) and therefore are not separately billable.
- Verification simulations are billable as simple simulations (CPT® code 77280) only. Verification simulations are not billable with IMRT courses of therapy. For 2D and 3D treatments, one (1) verification simulation (CPT® code 77280) may be approved per phase of treatment when IGRT is not authorized. If IGRT (such as CPT® code 77387) is authorized for a particular phase of treatment, then a verification simulation may be necessary prior to treatment to confirm positioning of the isocenter and customized blocking. CPT® code 77280 may be approved in addition to IGRT for 3D if it is specifically requested and a clinical rationale is provided.
- Only 1 verification simulation is allowed per phase of treatment.
- For high dose rate (HDR) brachytherapy treatments, one (1) verification simulation (CPT® code 77280) may be approved per treatment. Additional services may be requested and will be reviewed for medical necessity based on the individual patient’s circumstances.

- It is the responsibility of the treating physician to submit the appropriate billing codes and quantities for simulations when multiple sites will be treated with two-dimensional conventional radiation therapy or three-dimensional conformal radiation therapy.

Sources

The Coding Standards are created and maintained by Evolent based on our understanding of current:

- Healthcare Common Procedure Coding System (HCPCS) Level I (also known as Current Procedural Terminology (CPT®)) codes beginning with a number, HCPCS Level II codes beginning with a letter, and other data are copyrighted by the American Medical Association (AMA). No fee schedules, basic units, relative values, or related listings are included in HCPCS Level I or II codes. AMA does not directly or indirectly practice medicine or dispense medical services.
- American Society for Radiation Oncology (ASTRO) Radiation Oncology Coding Resource
- Medicare's Local Coverage Determinations (LCDs) and National Coverage Determination (NCD) for radiation oncology
- Office of the Inspector General (OIG) compliance standards
- National Correct Coding Initiative (NCCI) edits
- National Correct Coding Initiative (NCCI) Policy Manual
- Centers for Medicare and Medicaid Services (CMS) Internet Only Manuals (IOM).