

Simulations - Radiation Oncology Coding Standard

CPT Codes: 77280, 77285, 77290

- **Original Date: April 2011**
- **Last Review Date: November 2020**
- **Last Revised Date: January 2017**
- **Implementation Date: January 2021**

Simulation Code: 77280, 77285, 77290

Professional and Technical

A simulation is the process of determining and establishing the radiation therapy treatment portals to a specific treatment volume. The process includes determination of the treatment position, necessity and fabrication of immobilization devices and acquisition of the images and data necessary to develop the 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, rotation or arc therapy, complex blocking, custom shielding blocks, brachytherapy simulation, hyperthermia probe verification, any use of contrast materials.

The level of complexity billed for each simulation service is determined by the number of treatment areas unless the additional items listed in the complex simulation descriptor are met at the time of the simulation procedure. Many of these additional criteria typically occur after the initial simulation procedure is complete and would not be applied to the simulation process for what may happen later.

Simulations may occur on multiple different types of equipment, i.e., treatment table, conventional simulator, CT based simulator, etc. Therefore, the simulation process may occur in many areas of the department and at different points within the course of treatment. The typical course of radiation therapy may require multiple simulations. This may involve a verification simulation on the onset of new treatment portals. Although multiple simulations may occur on a patient during a course of therapy, no more than one simulation should be reported on the same date of service with the exception of the brachytherapy simulations, which will allow two (2) simulations, if performed, for verification of source placement on the same date. Types of simulations are detailed below.

1. **Patient Initial Simulation (CPT® 77280, 77285, 77290)** – These simulations include establishment of the patient’s treatment position (supine, prone, decubitus, arms akimbo, etc.). It may also include the placement of reference marks to delineate the area to be treated and may or may not include the creation of custom immobilization devices (aquaplast masks, alphacradsles, Vac-Lok™, etc.) and gantry and table parameters. Items such as the use of contrast and the utilization of complex treatment devices may elevate the level of simulation to complex 77290. When contrast or complex immobilizations are not utilized, the level of initial simulation is based on the number of treatment areas and/or level of billable immobilization devices (breastboard etc.). Initial simulations may occur on a conventional or dedicated simulator, CT based simulator or treatment table, as in the case of emergency and electron treatments.
2. **Verification Simulation (CPT® 77280)** – Verification simulations are coded as simple simulations only (CPT® 77280) regardless of the number of areas included in the verification process. This process includes verification of port blocking, isocenter placement and the patient is in the proper treatment position. In order 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. 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® 77301 and are not separately billable.

Standards for Simulation Codes:

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

Sources

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

- American Medical Association (AMA) HCPCS definitions and intended use as noted within the AMA's published products. CPT® five-digit codes, nomenclature and other data are copyright 2022 American Medical Association. All Rights Reserved. No fee schedules, basic units, relative values or related listings are included in CPT®. AMA does not directly or indirectly practice medicine or dispense medical services. AMA assumes no liability for the data contained herein or not contained herein. Local and National Medicare Coverage Determinations (LCDs and NCDs)
- 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).

NIA incorporated accepted standards of care in radiation oncology and is based on review of sources such as the American Society of Therapeutic Radiation Oncology (ASTRO) model policies and coding guidelines.