

# Dosimetry Planning - Radiation Oncology Coding Standard

CPT Codes: 77295, 77300, 77301, 77306, 77307, 77321, 77316, 77317, 77318, 77331, 77399

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**Dosimetry planning** is the process of determining the amount, rate, and distribution of radiation emitted from a source of ionizing radiation, based on the physician's prescription for a specific patient. Different methods of dosimetry planning may be utilized based on the type of treatment delivery prescribed by the physician; however, only one dosimetry planning service is typically necessary per phase of treatment delivery. In addition to standard isodose planning and more advanced conformal three-dimensional or intensity modulated planning, dosimetry services may also include monitor unit calculations and special dosimetry services to further translate and assure the appropriate radiation dose to the target area. Dosimetry services are performed by a medical dosimetrist and/or a qualified medical physicist under the direction of a radiation oncologist. This coding standard demonstrates the appropriate utilization of these codes.

## Isodose Plans (77306, 77307)

### *Professional and Technical*

An isodose plan is a graphic display of patient's anatomy to include the distribution of radiation based on a prescribed dose and plan of care created by a radiation oncologist. These codes are not billable on the same date of service with an intensity modulated radiotherapy plan (CPT® 77301) as these dosimetry planning techniques represent a more advanced and conformal method of distributing radiation doses to targeted treatment areas. If the volume of interest for the isodose plan is separate and distinct from the volume of interest for the 3D plan, the isodose plan may be separately billable.

- **77306** Teletherapy isodose plan; simple (1 or 2 unmodified ports directed to a single area of interest), includes basic dosimetry calculation(s)
- **77307** Teletherapy isodose plan; complex (multiple treatment areas, tangential ports, the use of wedges, blocking, rotational beam, or special beam considerations), includes basic dosimetry calculation(s)

## Standards for CPT® 77306 and 77307

- Electron only plans are billable as CPT® 77321 and not CPT® 77306 or 77307. These codes are not billable for the same isodose plan.
- Only one isodose plan is allowed per volume of interest. Contiguous volumes of interest such as breast tangents and supraclavicular nodal fields are considered one volume of interest, therefore, additional isodose plans are not allowed. In addition, with current planning techniques, a single isocenter planning process is routine which further supports a single plan for these contiguous volumes.
- One (1) isodose plan may be approved for all 2D external beam plans and 3D external beam boost plans in which a 3D isodose plan (CPT® 77295) has already been billed during the same course of therapy.

## Three-dimensional Radiotherapy Plan (77295)

### *Professional and Technical*

- **77295** 3-dimensional radiotherapy plan, including dose-volume histogram.

Three-dimensional planning involves computer reconstruction of a delineated tumor volume and surrounding critical normal tissue structures from a CT scan and/or MRI dataset in preparation for non-coplanar or coplanar therapy. This planning utilizes documented three-dimensional beam's eye view volume dose displays of multiple or moving beams. This procedure combines a computer-aided field setting simulation with isodose planning which occurs during dosimetry treatment planning. 3D radiotherapy plans are billable as one per treatment course; however, there are occasional scenarios in which more than one 3D radiotherapy plan may be medically necessary. A new CT or MRI dataset supporting a significant change in the tumor volume and/or surrounding anatomy and documented medical necessity are required to claim another 3D conformal plan.

When performing a 3D radiotherapy plan, a separate charge for an isodose plan would not be appropriate for the same segment of treatment of that volume. This is due to the isodose plans being utilized as a component of the 3D radiotherapy plan. It would be appropriate, however, to bill an isodose plan for a boost or cone-down performed on the same CT data set, which was used for the initial conformal plan.

## Standards for CPT® 77295

- One (1) 3D radiotherapy plan (CPT® 77295) may be approved for each course of 3D external beam treatment delivery. Only one 3D radiotherapy plan is allowed per course of therapy, unless there is documentation of medical necessity, and a second dataset is acquired which demonstrates a significant change in patient anatomy and/or delineated tumor volumes. In this instance an additional 3D radiotherapy plan may be appropriate.

- The work performed within a 3D radiotherapy plan includes isodose planning; therefore, it would not be appropriate to bill for an isodose plan (CPT® 77306-77307) or a teletherapy port plan (CPT® 77321) in addition to CPT® 77295 for the same segment of therapy.
- One (1) 3D radiotherapy plan (CPT® 77295) may be approved for each course of Stereotactic Radiosurgery (SRS) or Stereotactic Body Radiation Therapy (SBRT). (See Reference 1.)
- 3D radiotherapy plans may be appropriate for HDR and LDR brachytherapy treatment courses. CPT® 77295 may be utilized in lieu of brachytherapy isodose plans (CPT® 77316 – 77318); if 3D criteria are met, however, only 1 is allowed per course of therapy unless there is documentation of medical necessity, and a second dataset is acquired which demonstrates a significant change in patient anatomy and/or delineated tumor volumes. In this instance an additional 3D radiotherapy plan may be appropriate.
- 3D radiotherapy plans may be appropriate for proton or neutron treatment courses. CPT® 77295 may be utilized in lieu of teletherapy isodose plans (CPT® 77321); however, only 1 is allowed per course of therapy unless there is documentation of medical necessity, and a second dataset is acquired which demonstrates a significant change in patient anatomy and/or delineated tumor volumes. In this instance an additional 3D radiotherapy plan may be appropriate.
- CPT® 77295, 3-Dimensional Radiotherapy Plan, is not billable for IMRT boost plans.

## IMRT Plan (77301)

### *Professional and Technical*

- **77301** Intensity modulated radiotherapy plan, including dose-volume histograms for target and critical structure partial tolerance specifications.

Intensity-Modulated Radiation Therapy (IMRT) is a computer-based method of planning delivery of treatment for tumors within a patient. IMRT allows for delivery of highly conformal dose distributions to complex targets positioned near sensitive normal tissues. Conforming the dose to the target area, and away from sensitive normal tissues, improves therapeutic ratios. IMRT utilizes many non-uniform radiation beam intensities within varied amounts of beam angles to deliver the conformal dose. These non-uniform beam intensities are determined by a computer-based optimization technique known as “inverse planning”.

Inverse planning requires the planner to identify treatment volumes for planning as well as distinguish the sensitive normal structures near or adjacent to the treatment volume. The physician is required to supply dose constraints for the normal structures and dose goals for the target area. These goals and constraints allow the IMRT planning software to “reverse engineer” the plan. IMRT treatment delivery is not confined to the use of a Multi-Leaf Collimator (MLC) as long as the delivery results in highly modulated intensity resultant from the planning process described above. IMRT static compensators may also be used. The use of an MLC just to produce simple one-dimensional ramp intensity distributions is excluded because the inverse planning process is not necessary to produce this simple intensity variation.

An IMRT plan (CPT® 77301) is billable only one time during a course of therapy. In rare cases, billing a second IMRT plan during the same course of therapy may be warranted. In this scenario, planning from a new CT or MRI dataset showing a substantial change in the delineated tumor volume/volume of interest or patient anatomy is required. In addition, a statement from the physician supporting medical necessity is required and must be present within the patient's medical record.

In the event additional IMRT planning is performed **without** a new CT/MRI dataset, the IMRT plan (CPT® 77301) is **not** billable. It is possible; however, to capture the charges for the new secondary calculations (CPT® 77300) performed and for treatment devices (CPT® 77334 if compensator based, CPT® 77338 if MLC based).

Traditional "field-in-field technique" is not considered IMRT but rather 3D external beam therapy. The use of "field in field" or forward planning technique to block hotspots is NOT considered IMRT. These hotspots are contoured to create a volume of interest to block and would not be considered "inverse planning".

Current planning techniques often employ intensity modulated planning and CPT® 77301 may be applied to these scenarios. When utilizing CPT® 77301, all requirements of the code are expected to be met; associated standards for treatment devices and calculations as well as NCCI edits will also apply.

### Standards for CPT® 77301

- One (1) IMRT plan (CPT® 77301) may be approved per course of medically necessary IMRT treatment.
- Requests for additional IMRT plans (CPT® 77301) require an additional CT or MRI to be acquired for planning purposes and a medical necessity statement from the requesting physician. The new CT/MRI dataset must demonstrate a significant change in volumes to necessitate utilization of the new data for planning.
- When billing CPT® 77301, the associated CPT® codes for the appropriate devices would be expected. For example, CPT® 77334 would be applied to devices only in the event of compensator based IMRT and all other beam modulation created with MLC based systems would be captured with CPT® 77338 and allowed once per IMRT plan.
- Request for an IMRT plan for a course of stereotactic radiotherapy (SRS and SBRT) in place of a 3D radiotherapy plan (CPT® 77295) requires submission of documentation of the IMRT treatment plan. If approved, one (1) IMRT plan (CPT® 77301) may be approved for each requested course of Stereotactic Radiosurgery (SRS) or Stereotactic Body Radiation Therapy (SBRT).

## Special Teletherapy Port Plan (77321)

### *Professional and Technical*

- **77321** Special teletherapy port plan, particles such as electrons, neutrons and protons, hemibody and total body.

This code is typically used for electron isodose plans; however, it may also be utilized for special beam considerations such as total body irradiation. An isodose plan is required to support this charge as it is considered an integral piece of documentation for the work provided as part of the planning process. However, an isodose plan is not required for hemibody, and total body planning. A separate form of documentation must be present to support the use of this code in those cases. This code is billed once per patient course of treatment. It would not be appropriate to bill an IMRT plan (CPT® 77301), a 3D radiotherapy plan (CPT® 77295) or an isodose plan (CPT® 77306 – 77307) and a special teletherapy port plan (CPT® 77321) on the same date of service for the same volume of interest. **If the volume of interest for the isodose or 3D plan are separate from the volume of interest for the special teletherapy port plan, then CPT® 77321 could be billed on the same date as CPT® 77295, 77306, or 77307.**

### Standards for CPT® 77321

- A special teletherapy port plan is a dosimetry plan and must NOT be billed in addition to another dosimetry plan (CPT® 77306-77307, 77295, 77301) for the same work performed.
- A special teletherapy port plan may be billed in addition to another dosimetry plan (CPT® 77306-77307 or 77295) when the volumes of interest are different.
- CPT® 77321 is not billable for simply utilizing electrons. An isodose plan must be created except for total-body or hemi-body electron treatments.
- One (1) teletherapy port plan (CPT® 77321) may be approved for all computer-based planning of electron treatments and all proton and neutron isodose planning.
- One (1) teletherapy port plan (CPT® 77321) may be approved for point dose calculations generated for total body irradiation (TBI) special particle planning.
- For proton and neutron isodose planning, a 3D radiotherapy plan (CPT® 77295) may be allowed in lieu of CPT® 77321 if requested.

## Brachytherapy Isodose Plans (77316, 77317 & 77318)

### *Professional and Technical*

Similar to external beam isodose plans, (CPT® codes 77306 & 77307), brachytherapy isodose plans (CPT® codes 77316 – 77318) are a display of radiation dose delivery occurring within the patient's anatomy. The plan will indicate the internal apparatus used such as tandem and ovoids, vaginal cylinders, catheters and/or other applicators utilized, as well as the location of source placement and doses to specific regions of interest. Only one isodose plan is billable

per unique tumor volume or procedure. For example, if a partial breast irradiation or GYN vaginal cylinder HDR treatment were to be planned and the same plan is used to treat the patient each fraction, an additional plan is not necessary and therefore only one plan is billable. However, for tandem and ovoids or interstitial needles, if the placement of the device or a change in patient anatomy necessitates a second plan, it may be billable.

- **77316** Brachytherapy isodose plan; simple (calculation[s] made from 1 to 4 sources, or remote afterloading brachytherapy, 1 channel), includes basic dosimetry calculation(s)
- **77317** Brachytherapy isodose plan; intermediate (calculation[s] made from 5 to 10 sources, or remote afterloading brachytherapy, 2-12 channels), includes basic dosimetry calculation(s)
- **77318** Brachytherapy isodose plan; complex (calculation[s] made from over 10 sources, or remote afterloading brachytherapy, over 12 channels), includes basic dosimetry calculation(s)

### Standards for CPT® 77316, 77317 and 77318

Only one brachytherapy isodose plan is billable per unique treatment volume. In medically necessary situations where each application of brachytherapy requires a new image set and new brachytherapy isodose plan, a brachytherapy isodose plan may be billed for each application. Additional brachytherapy isodose plans within the same course of therapy may be approved if the requesting physician provides a rationale that explains why the previous brachytherapy isodose plan cannot be utilized and that supports the medical necessity of creating a new isodose plan.

- A 3D radiotherapy plan (CPT® 77295) may be substituted for a brachytherapy isodose plan (CPT® 77316-77318) if requested by provider and if a 3D radiotherapy plan has not been authorized in the same course of therapy.
- For prostate seed implants, up to two (2) isodose plans may be approved.

### Basic Dosimetry Calculations (77300)

#### *Professional and Technical*

- **77300** Basic radiation dosimetry calculation, central access depth dose calculation, TDF-NSD gap calculation, off axis factor, tissue inhomogeneity factors, calculation of non-ionizing radiation surface and depth dose as required during the course of treatment, only when prescribed by the treating physician.

Only one calculation is billable per port/beam angle or arc for 3D and IMRT external beam treatments. In the case of IMRT, secondary monitor unit calculations are required as a verification of the planned monitor unit calculations in addition to the “dose” verification performed in the phantom measurements. Calculations generated by the treatment planning system are included in the IMRT isodose plan itself are a component of the IMRT isodose plan

(CPT® 77301) and not separately billable. Due to this, the billable monitor unit calculations for IMRT are those produced as the required secondary, independent verification.

### Standards for CPT® 77300

- Monitor unit calculations are not billable with CPT® 77306, 77307 and 77321. Calculations are considered bundled into these planning codes and not separately billable.
- For 3D and IMRT, dosimetry calculations are billable as a quantity of one (1) per medically necessary field/port/angle/arc.
- Multiple calculations per beam angle, when billable, are not allowed due to linear accelerator limitations (e.g. split carriage fields).
- Monitor unit calculations (CPT® 77300) are considered bundled into brachytherapy isodose planning codes (CPT® 77316, 77317, 77318) and are not separately authorized.
- Monitor unit calculations (CPT® 77300) are considered bundled into HDR brachytherapy delivery codes (77770,77771,77772,77767,77768) and are not separately authorized.
- Monitor unit calculations (CPT® 77300) may be approved for stereotactic courses of therapy. The quantity approved will equal the number of fields/portals/angles/arcs submitted by the provider in the preauthorization process, requests for quantities above a value of ten (10) will require additional supporting documentation and/or physician review for medical necessity.
- For SIRT brachytherapy, up to two (2) monitor unit calculations are approvable upon request.

Requests for additional dosimetry calculations may require additional supporting documentation and/or a physician review of medical necessity based on individual patient circumstances.

### Special Dosimetry (77331)

#### *Professional and Technical*

- **77331** Special dosimetry (e.g., TLD/thermoluminescent dosimetry, microdosimetry), only when prescribed by the treating physician
- This type of dosimetry is mainly used as a source of independent dose verification, and can be performed using film, diodes or TLDs, among other tools. It allows for dose confirmation to a particular area. The frequency of special dosimetry will vary during the radiation course and may be used as many times as unique measurements are medically necessary. If performed, special dosimetry measurements may occur only once per port/field, when supported by medical necessity, and should not be performed as a routine procedure.

## Standards for CPT® 77331

- CPT® 77331 is billable once per port/field/angle, per course of 2D or 3D external beam radiation therapy only when medically necessary and ordered by a radiation oncologist.
- CPT® 77331 is not billable for QA or output measurements associated with IMRT or stereotactic procedures.
- One (1) special dosimetry charge (CPT® 77331) may be approved per LDR phase of treatment and accounts for the measurement performed during the documented assay of the radioactive seeds.
- When diodes are requested in conjunction with 2D or 3D treatment planning, 77331 may be approved as a quantity equal to the number of ports/fields/arcs/angles.
- Requests in conjunction with other forms of radiation therapy must be submitted with a medically necessary rationale for the service. The request and rationale will be submitted to a physician reviewer for determination.

## Unlisted Dosimetry Procedure (77399)

### *Professional and Technical*

- **77399** Unlisted procedure, medical radiation physics, dosimetry and treatment devices, and special services

Unlisted dosimetry procedures are utilized for services and procedures in which an already established HCPCS code does not accurately describe the procedure or service provided. Unlisted procedures require documentation for review of the service or procedure to be provided.

## Standards for CPT® 77399

- Unlisted dosimetry procedure (CPT® 77399) must be requested. Rationale and documentation of service must be reviewed by a physician.
- Unlisted dosimetry procedure may be approved for services in which a HCPCS does not already exist and the service is not bundled or packaged into any other services.

### ▼ Sources:

The Evolent (formerly National Imaging Associates, Inc.) Coding Standards are created and maintained by Evolent based on our understanding of:

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- Local and National Medicare Coverage Determinations (LCDs and NCDs)



- Office of the Inspector General (OIG) compliance standards
- National Correct Coding Initiative (NCCI) edits
- Centers for Medicare and Medicaid Services (CMS) Internet Only Manuals (IOM).

Evolent 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.