

Delivery of IMRT/SRS/SBRT

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<p>Related Medicare Advantage Policy Guideline</p> <ul style="list-style-type: none"> Intensity Modulated Radiation Therapy (IMRT) Policy, Professional
<p>Related Medicare Advantage Coverage Summary</p> <ul style="list-style-type: none"> Radiologic Therapeutic Procedures

Policy Summary

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Intensity Modulated Radiation Therapy (IMRT)

Intensity Modulated Radiation Therapy (IMRT) is a computer-based method of planning for, and delivery of generally narrow, patient specific, spatially and often temporally modulated beams of radiation to solid tumors within a patient. IMRT planning and delivery uses an approach for obtaining the highly conformal dose distributions needed to irradiate complex targets positioned near, or invaginated by, sensitive normal tissues, thus improving the therapeutic ratios. IMRT delivers a more precise radiation dose to the tumor while sparing the surrounding normal tissues by using non-uniform radiation beam intensities that are determined by various computer-based optimization techniques.

The computer based optimization process is referred to as "inverse planning." Inverse planning develops a dose distribution based on the input of specific dose constraints for the planned treatment volume (PTV) and nearby clinical structures and is the beginning of the IMRT treatment planning process. The gross tumor volume (GTV), the PTV and surrounding normal tissues must be identified by a contouring procedure and the optimization must sample the dose with a grid spacing of 1 centimeter or less.

IMRT uses non-uniform and customized fluence distributions in treatment delivery. Delivery of IMRT requires either the use of a multi-leaf collimator (MLC) with leaves that project to a nominal 1 cm or less at the treatment unit isocenter or the use of compensator-based beam modulation treatment using three or more high resolution compensator convergent beam modulated fields. A MLC may use a dynamic (DMLC) or segmented mode (SMLC) to create the 3-dimensional, intensity-modulated dose distribution. The average segments (or "steps") per gantry position required to meet IMRT delivery is five. The exact delivery method is not restricted as long as the particular technique chosen has the ability to model the highly modulated intensity patterns that result from the planning process described above (e.g., solid modulators or compensators may be an alternative to MLC). However, the use of a 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. Also, the use of a MLC does not, in itself, constitute or define IMRT (for example, it is possible to use a MLC for intermediate or complex, 3D conformal therapy).

Note also, traditional "field-in-field technique" which is neither MLC nor compensator-based is not considered IMRT but rather external beam therapy.

IMRT delivery imposes a more stringent requirement than conventional radiation therapy in terms of accounting for patient position and organ motion. Methods that account for organ motion include but are not limited to:

- Use of published studies on organ movement when developing the PTV
- Image guided adaptive radiotherapy (e.g., ultrasound guided or portal-image guided setup with implanted fiducial markers)
- Respiratory gating of diaphragm movement for thoracic and upper abdominal sites.

Stereotactic Radiosurgery (SRS)

Stereotactic Radiosurgery (SRS) requires computer-assisted, three-dimensional planning and delivery with stereotactic and convergent-beam technologies, including, but not limited to: multiple convergent cobalt sources (e.g., Gamma Knife®); protons; multiple, coplanar or non-coplanar photon arcs or angles (e.g., XKnife®); fixed photon arcs; or image-directed robotic devices (e.g., CyberKnife®) that meet the criteria.

SRS is a distinct discipline that utilizes externally generated ionizing radiation in certain cases to inactivate or eradicate a defined target(s) in the head or spine without the need to make an incision. The target is defined by high-resolution stereotactic imaging. To assure quality of patient care, the procedure involves a multidisciplinary team consisting of a neurosurgeon, radiation oncologist, and medical physicist.

SRS typically is performed in a single session, using a rigidly attached stereotactic guiding device, other immobilization technology and/or a stereotactic-guidance system, but can be performed in a limited number of sessions, up to a maximum of five. If more than one session is required, the SBRT codes must be used.

Technologies that are used to perform SRS include linear accelerators, particle beam accelerators, and multisource Cobalt 60 units. In order to enhance precision, various devices may incorporate robotics and real time imaging.

Stereotactic Body Radiation Therapy (SBRT)

Stereotactic body radiation therapy (SBRT) is a treatment that couples a high degree of anatomic targeting accuracy and reproducibility with very high doses of extremely precise, externally generated, ionizing radiation, thereby maximizing the cell-killing effect on the target(s) while minimizing radiation-related injury in adjacent normal tissues.

The adjective "stereotactic" describes a procedure during which a target lesion is localized relative to a known three dimensional reference system that allows for a high degree of anatomic accuracy and precision. Examples of devices used in SBRT for stereotactic guidance may include a body frame with external reference markers in which a patient is positioned securely, a system of implanted fiducial markers that can be visualized with low-energy (kV) x-rays, and CT-imaging-based systems used to confirm the location of a tumor immediately prior to treatment.

All SBRT is performed with at least one form of image guidance to confirm proper patient positioning and tumor localization. To minimize intra-treatment tumor motion associated with respiration or other motion, some form of motion control or "gating" should be used.

SBRT may be fractionated (up to 5 fractions). Each fraction requires an identical degree of precision, localization and image guidance. Since the goal of SBRT is to intensify the potency of the radiotherapy by completing an entire course of treatment within an extremely accelerated time frame, any course of radiation treatment extending beyond five fractions is not considered SBRT and is not to be billed using these codes.

Indications for IMRT

The decision process for using IMRT requires an understanding of accepted practices that take into account the risks and benefits of such therapy compared to conventional treatment techniques. While IMRT technology may empirically offer advances over conventional or three dimensional (3-D) conformal radiation, a comprehensive understanding of all consequences is required before applying this technology.

IMRT is not a replacement therapy for conventional and 3-D conformal radiation therapy methods. IMRT is considered reasonable and necessary in instances where sparing the surrounding normal tissue is essential for patients who have primary brain tumors, brain metastasis, prostate cancer, lung cancer (with special provision for organ motion), pancreas cancer, and

other upper abdominal sites (with special provision for organ motion), spinal cord tumors, head and neck cancer, adrenal tumors, pituitary tumors and the patient has at least one of the following conditions met:

- Important dose limiting structures adjacent to, but outside the PTV, are sufficiently close and require IMRT to assure safety and morbidity reduction.
- An immediately adjacent volume has been irradiated and abutting portals must be established with high precision.
- Gross Tumor Volume (GTV) margins are concave or convex and in close proximity to critical structures that must be protected to avoid unacceptable morbidity.
- Only IMRT techniques would decrease the probability of grade 2 or grade 3 radiation toxicity as compared to conventional radiation in greater than 15% of radiated similar cases.

IMRT is an evolving technology and, as such, this IMRT Policy will be reviewed and updated as often as necessary. Indications will include some left breast tumors due to risk to immediately adjacent cardiac and pericardial structures, though it would only rarely if ever be medically necessary for tumors of the right breast.

IMRT may be necessary in some gynecologic tumors or in some genitourinary tumors where its high precision is especially necessary to avoid immediately adjacent structures such as bowel or where there is a special need to avoid marrow. It may also be necessary in some lymphomas, malignant lymph nodes or sarcomas where anatomic location gives rise to a need for special care to avoid adjacent structures. Since these are likely to be only a relatively small fraction of gynecologic tumors, genitourinary tumors, lymphomas, malignant nodes or sarcomas, in each case particular care is required to document the necessity for IMRT.

Indications for SRS

Intracranial lesions would be considered medically reasonable and necessary for the following conditions:

- Primary central nervous system malignancies, generally under 5 cm and as a boost treatment for larger cranial, base of skull, or spinal lesions that have been treated initially with external beam radiation therapy or surgery (e.g., grade III and IV gliomas, oligodendrogliomas, sarcomas, chondrosarcomas, chordomas, and nasopharyngeal of paranasal sinus malignancies).
- Primary and secondary tumors involving the brain or spine parenchyma, meninges/dura, or immediately adjacent bony structures.
- Benign brain and spinal tumors such as cranial meningiomas, acoustic neuromas, other schwannomas, pituitary adenomas, pineal cytomas, craniopharyngiomas, glomus tumors, and hemangioblastomas.
- Cranial arteriovenous malformations and hemangiomas.
- Trigeminal neuralgia not responsive to medical management.
- Metastatic brain lesions, generally limited in number, with stable systemic disease, Karnofsky Performance Status of 40 or greater or expected to return to 70 or greater with treatment, and otherwise reasonable survival expectations or an Eastern Cooperative Oncology Group (ECOG) performance status of 3 or less or expected to return to 2 or less with treatment.
- Relapse in a previously irradiated cranial or spinal field where the additional stereotactic precision is required to avoid unacceptable vital tissue radiation.
- Essential tremor: limited to the patient that is refractory to medical management. Refer to LCDs for coverage information where applicable.

Indications for SBRT

SBRT is covered for primary and metastatic tumors of the lung, liver, kidney, adrenal gland or pancreas when and only when each of the following criteria are met, and each specifically documented in the medical record:

- The patient's general medical condition (notably, the performance status) justifies aggressive treatment to a primary cancer or, for the case of metastatic disease, justifies aggressive local therapy to one or more discreet deposits of cancer within the context of efforts to achieve total clearance or clinically beneficial reduction in the patient's overall burden of systemic disease. Typically, such a patient would have also been a potential candidate for alternate forms of intense local therapy applied for the same purpose (e.g., surgical resection, radiofrequency ablation, cryotherapy, etc).
- Other forms of radiotherapy, including but not limited to external beam and IMRT, cannot be as safely or effectively utilized, and
- The tumor burden can be completely targeted with acceptable risk to critical normal structures
- If the tumor histology is germ cell or lymphoma, effective chemotherapy regimens have been exhausted or are otherwise not feasible.

SBRT for Prostate Neoplasms

SBRT of the prostate may be covered for patients with clinically localized prostate cancer on an individual case by case basis. Refer to LCDs for coverage information where applicable.

Other Neoplasms

Lesions of bone, breast, uterus, ovary and other internal organs not listed above are not covered for primary definitive SBRT as literature does not support an outcome advantage over other conventional radiation modalities, but may be appropriate for SBRT in the setting of recurrence after conventional radiation modalities.

Other Indications for SBRT

Except as above, any lesion with a documented necessity to treat using a high dose per fraction of radiation. When using high radiation doses per fraction, high precision is required to avoid surrounding normal tissue exposure.

Lesions which have received previous radiotherapy or are immediately adjacent to previously irradiated fields, where the additional precision of stereotactic radiotherapy is required to avoid unacceptable tissue radiation will be covered when other conditions of coverage are met and this necessity is documented in the medical record.

Applicable Codes

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this guideline does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by the member specific benefit plan document and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies and Guidelines may apply.

CPT Code	Description
77301	Intensity modulated radiotherapy plan, including dose-volume histograms for target and critical structure partial tolerance specifications
77338	Multi-leaf collimator (MLC) device(s) for intensity modulated radiation therapy (IMRT), design and construction per IMRT plan
77371	Radiation treatment delivery, stereotactic radiosurgery (SRS), complete course of treatment of cranial lesion(s) consisting of 1 session; multi-source Cobalt 60 based
77372	Radiation treatment delivery, stereotactic radiosurgery (SRS), complete course of treatment of cranial lesion(s) consisting of 1 session; linear accelerator based
77373	Stereotactic body radiation therapy, treatment delivery, per fraction to 1 or more lesions, including image guidance, entire course not to exceed 5 fractions
77385	Intensity modulated radiation treatment delivery (IMRT), includes guidance and tracking, when performed; simple
77386	Intensity modulated radiation treatment delivery (IMRT), includes guidance and tracking, when performed; complex
77432	Stereotactic radiation treatment management of cranial lesion(s) (complete course of treatment consisting of 1 session)
77435	Stereotactic body radiation therapy, treatment management, per treatment course, to 1 or more lesions, including image guidance, entire course not to exceed 5 fractions

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HCPCS Code	Description
G0339	Image guided robotic linear accelerator-based stereotactic radiosurgery, complete course of therapy in one session or first session of fractionated treatment

HCPCS Code	Description
G0340	Image guided robotic linear accelerator-based stereotactic radiosurgery, delivery including collimator changes and custom plugging, fractionated treatment, all lesions, per session, second through fifth sessions, maximum 5 sessions per course of treatment
G6015	Intensity modulated treatment delivery, single or multiple fields/arcs, via narrow spatially and temporally modulated beams, binary, dynamic MLC, per treatment session
G6016	Compensator-based beam modulation treatment delivery of inverse planned treatment using 3 or more high resolution (milled or cast) compensator, convergent beam modulated fields, per treatment session

Diagnosis Codes

There are numerous reasonable and necessary conditions that might warrant the use of these procedures but which are too many to list. However, an appropriate ICD-10 diagnosis must be submitted with each claim and failure to do so may result in denial or delay in claim processing. The highest level of specificity should be used to report the patient's condition. The most current ICD-10 code book should be used to ensure proper payment.

Definitions

Eastern Cooperative Oncology Group (ECOG) Performance Scale:

- 0 – Fully active, able to carry on all pre-disease performance without restriction.
- 1 – Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work.
- 2 – Ambulatory and capable of all self-care but unable to carry out and work activities. Up and about more than 50% of waking hours.
- 3 – Capable of only limited self-care, confined to bed or chair more than 50% of waking hours.
- 4 – Completely disabled. Cannot carry on any self-care. Totally confined to bed or chair.
- 5 – Dead

Karnofsky Performance Scale:

- 100 – Normal; no complaints, no evidence of disease
- 90 – Able to carry on normal activity; minor signs or symptoms of disease
- 80 – Normal activity with effort; some signs or symptoms of disease
- 70 – Cares for self; unable to carry on normal activity or to do active work
- 60 – Requires occasional assistance but is able to care for most needs
- 50 – Requires considerable assistance and frequent medical care
- 40 – Disabled; requires special care and assistance
- 30 – Severely disabled; hospitalization is indicated although death not imminent
- 20 – Very sick; hospitalization necessary; active supportive treatment is necessary
- 10 – Moribund, fatal processes progressing rapidly
- 0 – Dead

References

CMS Local Coverage Determinations (LCDs) and Articles

LCD	Article	Contractor	Medicare Part A	Medicare Part B
L34224 Stereotactic Body Radiation Therapy	A57471 Billing and Coding: Stereotactic Body Radiation Therapy	Noridian		AS, CA, GU, HI, MP, NV
L33410 Stereotactic Radiosurgery (SRS) and Stereotactic Body Radiation Therapy (SBRT)	A57275 Billing and Coding: Stereotactic Radiosurgery (SRS) and Stereotactic Body Radiation Therapy (SBRT)	First Coast	FL, PR, VI	FL, PR, VI

LCD	Article	Contractor	Medicare Part A	Medicare Part B
	A57996 Response to Comments: Stereotactic Radiosurgery (SRS) and Stereotactic Body Radiation Therapy			
	A57995 Stereotactic radiosurgery (SRS) and stereotactic body radiation therapy (SBRT) – revision to the Part A and Part B LCD and Billing and Coding Article			
L34223 Stereotactic Radiosurgery	A57458 Billing and Coding: Stereotactic Radiosurgery	Noridian		AS, CA, GU, HI, MP, NV
L35076 Stereotactic Radiation Therapy: Stereotactic Radiosurgery (SRS) and Stereotactic Body Radiation Therapy (SBRT)	A56874 Billing and Coding: Stereotactic Radiation Therapy: Stereotactic Radiosurgery (SRS) and Stereotactic Body Radiation Therapy (SBRT)	NGS	CT, IL, MA, ME, MN, NH, NY, RI, VT WI	CT, IL, MA, ME, MN, NH, NY, RI, VT WI
	A57921 Response to Comments: Stereotactic Radiation Therapy: Stereotactic Radiosurgery (SRS) and Stereotactic Body Radiation Therapy (SBRT)			
L34151 Stereotactic Radiation Therapy: Stereotactic Radiosurgery (SRS) and Stereotactic Body Radiation Therapy (SBRT)	A57461 Billing and Coding: Stereotactic Radiation Therapy: Stereotactic Radiosurgery (SRS) and Stereotactic Body Radiation Therapy (SBRT)	Noridian	AK, AZ, ID, MT, ND, OR, SD, UT, WA, WY	AK, AZ, ID, MT, ND, OR, SD, UT, WA, WY
L34080 Intensity Modulated Radiation Therapy (IMRT)	A57231 Billing and Coding: Intensity Modulated Radiation Therapy (IMRT)	Noridian	AK, AZ, ID, OR, MT, ND, SD, UT, WA, WY	AK, AZ, ID, OR, MT, ND, SD, UT, WA, WY
L34217 Intensity Modulated Radiation Therapy (IMRT)	A57013 Billing and Coding: Intensity Modulated Radiation Therapy (IMRT)	Noridian		AS, CA, GU, HI, MP, NV
L36773 Intensity Modulated Radiation Therapy (IMRT)	A56746 Billing and Coding: Intensity Modulated Radiation Therapy (IMRT)	First Coast	FL, PR, VI	FL, PR, VI
	A56738 Intensity modulated radiation therapy (IMRT) revision to the Part A and Part B LCD			
	A55854 Response to Comments: Intensity Modulated Radiation Therapy (IMRT), L36773			
L36711 Intensity Modulated Radiation Therapy (IMRT)	A56725 Billing and Coding: Intensity Modulated Radiation Therapy (IMRT)	Novitas	AR, CO, DC, DE, LA, MD, MS, NJ, NM, OK, PA, TX	AR, CO, DC, DE, LA, MD, MS, NJ, NM, OK, PA, TX

CMS Claims Processing Manual

[Chapter 4; § 200.3 Billing Codes for Intensity Modulated Radiation Therapy \(IMRT\) and Stereotactic Radiosurgery \(SRS\), § 200.3.1 Billing for IMRT Planning and Delivery, § 200.3.2 Additional Billing Instructions for IMRT Planning, §200.3.3 Billing for Stereotactic Radiosurgery \(SRS\) Planning and Delivery](#)

UnitedHealthcare Commercial Policies

[Intensity-Modulated Radiation Therapy](#)
[Proton Beam Radiation Therapy](#)

Guideline History/Revision Information

Revisions to this summary document do not in any way modify the requirement that services be provided and documented in accordance with the Medicare guidelines in effect on the date of service in question.

Date	Summary of Changes
04/01/2021	Template Update <ul style="list-style-type: none">Reformatted policy; transferred content to new template
06/10/2020	Policy Summary <i>Stereotactic Body Radiation Therapy (SBRT)</i> <ul style="list-style-type: none">Removed redundant service descriptionRemoved language pertaining to provider types that may participate in delivering SBRT Applicable Codes <ul style="list-style-type: none">Removed CPT code 77293 Supporting Information <ul style="list-style-type: none">Updated <i>References</i> section to reflect the most current informationArchived previous policy version MPG071.06

Purpose

The Medicare Advantage Policy Guideline documents are generally used to support UnitedHealthcare Medicare Advantage claims processing activities and facilitate providers' submission of accurate claims for the specified services. The document can be used as a guide to help determine applicable:

- Medicare coding or billing requirements, and/or
- Medical necessity coverage guidelines; including documentation requirements.

UnitedHealthcare follows Medicare guidelines such as NCDs, LCDs, LCAs, and other Medicare manuals for the purposes of determining coverage. It is expected providers retain or have access to appropriate documentation when requested to support coverage. Please utilize the links in the [References](#) section below to view the Medicare source materials used to develop this resource document. This document is not a replacement for the Medicare source materials that outline Medicare coverage requirements. Where there is a conflict between this document and Medicare source materials, the Medicare source materials will apply.

Terms and Conditions

The Medicare Advantage Policy Guidelines are applicable to UnitedHealthcare Medicare Advantage Plans offered by UnitedHealthcare and its affiliates.

These Policy Guidelines are provided for informational purposes, and do not constitute medical advice. Treating physicians and healthcare providers are solely responsible for determining what care to provide to their patients. Members should always consult their physician before making any decisions about medical care.

Benefit coverage for health services is determined by the member specific benefit plan document* and applicable laws that may require coverage for a specific service. The member specific benefit plan document identifies which services are covered, which are excluded, and which are subject to limitations. In the event of a conflict, the member specific benefit plan document supersedes the Medicare Advantage Policy Guidelines.

Medicare Advantage Policy Guidelines are developed as needed, are regularly reviewed and updated, and are subject to change. They represent a portion of the resources used to support UnitedHealthcare coverage decision making. UnitedHealthcare may modify these Policy Guidelines at any time by publishing a new version of the policy on this website. Medicare source materials used to develop these guidelines include, but are not limited to, CMS National Coverage Determinations (NCDs), Local Coverage Determinations (LCDs), Medicare Benefit Policy Manual, Medicare Claims Processing Manual, Medicare Program Integrity Manual, Medicare Managed Care Manual, etc. The information presented in the Medicare Advantage Policy Guidelines is believed to be accurate and current as of the date of publication and is provided on an "AS IS" basis. Where there is a conflict between this document and Medicare source materials, the Medicare source materials will apply.

You are responsible for submission of accurate claims. Medicare Advantage Policy Guidelines are intended to ensure that coverage decisions are made accurately based on the code or codes that correctly describe the health care services provided. UnitedHealthcare Medicare Advantage Policy Guidelines use Current Procedural Terminology (CPT®), Centers for Medicare and Medicaid Services (CMS), or other coding guidelines. References to CPT® or other sources are for definitional purposes only and do not imply any right to reimbursement or guarantee claims payment.

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*For more information on a specific member's benefit coverage, please call the customer service number on the back of the member ID card or refer to the [Administrative Guide](#).