Intensity Modulated Radiation Therapy (IMRT)

Radiation Therapy

Publication Date: 01/01/2022

HEALTHHELP®

A WNS COMPANY

Table of Contents

Bladder Cancer

Bladder Cancer

IMRT for bladder cancer may be medically appropriate for **ANY** of the following:

- Treatment to be delivered consists of 25 fractions or less and **ALL** of the following:
  - **ANY** of the following:
    - Age is 75 years or younger
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more
  - **ANY** of the following:
    - Another radiation modality will be used during this course of treatment
    - IMRT plan reduces bladder toxicity by greater than 20%
    - IMRT plan reduces rectal toxicity by greater than 20%
- Treatment to be delivered consists of 30 fractions or less with a life expectancy of 6 months or greater and **ANY** of the following:
  - Recurrence risk high
  - The treatment plan is for definitive treatment (no planned surgery) and **ALL** of the following:
    - **ANY** of the following:
      - IMRT plan reduces bladder toxicity by greater than 20%
      - Physical ability and clinical status of **ANY** of the following:
        - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
        - Karnofsky Performance Status (KPS) Grade of 80 or more
    - **ANY** of the following:
      - IMRT plan reduces rectal toxicity by greater than 20%
      - IMRT plan reduces small bowel toxicity by greater than 20%

LCD 36773
See also, **LCD 36773**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 36711
See also, **LCD 36711**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

Bladder Cancer References

[37] NCCN, "Bladder Cancer," 16 July 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/bladder.pdf. [Accessed 18 Aug 2020].
[38] A. D. Sherry, A. Stewart, G. Luo and A. N. Kirschner, "Intensity-Modulated Radiotherapy is Superior to Three-Dimensional Conformal Radiotherapy in the Trimodality Management of Muscle-Invasive Bladder Cancer with Daily Cone Beam Computed Tomography Optimization," Journal of Radiation Oncology, vol. 8, no. 4, pp. 395-403, 2020.
[39] M. I. Milowsky, R. B. Rumble, C. M. Booth, T. Gilligan and L. J. Eapen, "Guideline on Muscle-Invasive and Metastatic Bladder Cancer (European Association of Urology Guideline): American Society of Clinical Oncology Clinical Practice Guideline Endorsement," Journal of Clinical Oncology, vol. 34, no. 16, pp. 1945-1952, 2016.
[40] A. M. Block, M. Korpics, B. Martin and A. Solanki, "Intensity Modulated Radiation Therapy in MuscleInvasive Bladder Cancer: Predictors of Utilization," Red Journal, vol. 99, no. 25, pp. 215-216, 2017.

Guideline Information

Policy #: P_7500
Policy Initiated: 06/30/2019
Last Review Date: 09/20/2021

Blood, Bone Marrow and Lymphatic System Cancers

Leukemia, Multiple Myeloma, Plasmacytoma , Primary Bone Tumors

IMRT for the treatment of leukemia, multiple myeloma, plasmacytoma and/or primary bone tumors:
The current therapy remains uncertain and requires review by a physician reviewer, medical director and/or individual health plan to determine medical appropriateness.

Hodgkin and Non-Hodgkin Lymphoma

IMRT for Hodgkin and Non-Hodgkin Lymphoma may be considered medically appropriate when **ALL** of the following:

- Physical ability and clinical status of **ANY** of the following:
  - Eastern Cooperative Oncology Group ECOG Performance Status Grade of 1 or less
  - Karnofsky Performance Status (KPS) Grade of 80 or more
- Treatment to be delivered consists of 25 fractions or less and **ANY** of the following:
  - Request is for treatment of the eye
  - IMRT will reduce the V20 to the lungs by greater than 20% and request is for treatment of the mediastinum
  - IMRT will reduce the dose to the spinal cord by at least 20%
  - IMRT will reduce the dose to the kidneys by at least 20%
  - IMRT will reduce the dose to the liver by at least 20%
  - IMRT will reduce the dose to the heart by at least 20%

LCD 36711
See also, **LCD 36711**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 36773
See also, **LCD 36773**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

Blood, Bone and Lymphatic System Cancer References

[1] Y. Lin, F. Kong, H. Li, D. Xu and F. Jia, "Comparison of target volume and clinical effects of four radiotherapy plans for acute lymphoblastic leukemia prior to hematopoietic stem cell transplantation," Molecular Medicine Reports, vol. 18, no. 3, pp. 2762-2770, 2018.
[2] K. Elsayad, M. Oertel, L. Konig, S. Huske and E. Le Ray, "Maximizing the Clinical Benefit of Radiotherapy in," Cancers, vol. 12, no. 3, pp. 1-12, 2020.
[3] NCCN, "Hodgkin Lymphoma," 17 April 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/hodgkins.pdf. [Accessed 25 08 2020].
[4] N. Besson, V. Pernin and Y. Kirova, "Evolution of radiation techniques in the treatment of mediastinal lymphoma: from 3D conformal radiotherapy (3DCRT) to intensity-modulated RT (IMRT) using helical tomotherapy (HT): a single-centre experience and review of the literature," British Journal of Radiology, vol. 89, no. 1059, 2016.
[5] NCCN, "T-Cell Lymphoma," 6 Jan 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/t-cell.pdf. [Accessed 25 08 2020].
[6] NCCN, "Primary Cutaneous Lymphoma," 1 2 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/primary_cutaneous.pdf. [Accessed 25 08 2020].
[7] D. C. Doval, D. Bhurani, R. Nair, S. Gujral and P. Malhotra, "Indian Council of Medical Research Consensus Document for the Management of Non-Hodgkin's Lymphoma (High Grade)," Indian Journal of Medical and Pediatric Oncology, vol. 38, no. 1, pp. 51-58, 2017.
[8] Delivery of Radiation Therapy of Large Target Volumes, 2015.
[9] L. Xu, M. Kang, B. Jiang, Q. Liu and Y. Li, "A study of the dosimetric characteristics between different," Medical Dosimetry, vol. 43, no. 1, pp. 91-99, 3 May 2017.

Guideline Information

Policy #: P_2213, P_2212, P_2214, P_7488, P_7489
Policy Initiated: 06/19/2020
Last Review Date: 09/20/2021

Breast Cancer

Ductal Carcinoma in Situ

IMRT for ductal carcinoma in situ may be considered medically appropriate when there is a diagnosis of left breast cancer with an age of 69 years or less and **ALL** of the following:

- Physical ability and clinical status of **ANY** of the following:
  - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
  - Karnofsky Performance Status (KPS) Grade of 80 or more
- **ANY** of the following
  - Treatment to be delivered consists of 28 fractions or less and **ANY** of the following:
    - 10cc or more of the contoured heart will receive 25 Gy using 3DCRT and the dose to the heart be reduced by greater than 20% if IMRT is used compared to 3D
    - Chest wall separation is greater than 20 cm
    - Recurrence risk high
    - The 3D plan resulted in hot spots greater than 115% of the prescription dose and IMRT will reduce these hot spots by at least 20%
    - V20 of the lungs that is greater than 35% with a 3D plan and the IMRT plan will improve the V20 by more than 10%
  - Treatment to be delivered consists of 29 - 35 fractions and **ALL** of the following:
    - Boost is to be given as part of this requested treatment course
    - IMRT plan will improve the v20 by greater than 10%
    - V20 of the lungs is GREATER than 35% with a 3D plan

Stage I, II, III Breast Cancer and Post-Mastectomy Breast Cancer

IMRT for Stage I, II or III breast cancer may be considered medically appropriate when the treatment to be delivered consists of 36 fractions or less with a diagnosis of left breast cancer and **ALL** of the following:

- Internal mammary (IM) nodes are being treated and **ANY** of the following:

- Four (4) or more positive axillary nodes (either clinically or pathologically)
- IM nodes are positive on biopsy
- Pathologically enlarged IM nodes on CT/MRI/PET
- Tumor is in the medial quadrant.

- Recurrence risk high and **ALL** of the following
  - Age is 75 years or younger and **ANY** of the following:
    - 10cc or more of the contoured heart will receive 25 Gy using 3DCRT and the dose to the heart be reduced by greater than 20% if IMRT is used compared to 3D
    - An IMRT plan will improve the v20 by greater than 10%
    - Chest wall separation is greater than 20 cm
    - The 3D plan resulted in hot spots greater than 115% of the prescription dose and IMRT will reduce these hot spots by at least 20%
    - V20 of the lungs is greater than 35% with a 3D plan
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more

Breast Cancer, Metastatic or Palliative Care

IMRT for metastatic breast cancer or palliative care of breast cancer
The current therapy remains uncertain and requires review by a physician reviewer, medical director and/or individual health plan to determine medical appropriateness.

LCD 36711
See also, **LCD 36711**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 36773
See also, **LCD 36773**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

Breast Cancer References

[1] NCCN, "Breast Cancer," 15 July 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/breast.pdf. [Accessed 18 August 2020].
[2] M. Buwenge, S. Cammelli, I. Ammendolia, G. Tolento and A. Zamagni, "Intensity modulated radiation therapy for," Breast Cancer - Targets and Therapy, vol. 9, pp. 121-126, 6 3 2017.
[3] K. Doke, S. Butler and M. Mitchell, "Current Therapeutic Approaches to DCIS," Journal of Mammary Gland Biology and Neoplasia, pp. 279-291, 18 9 2018.
[4] L. M. Halasz, S. A. Patel, J. McDougall, C. Fedorenko and Q. Sun, "IMRT Use for the Treatment of Early Stage Breast," vol. 99, no. 2S, p. Supplement, 2017.
[5] A. Recht, E. Comen, R. Fine, T. Whelan and M. Somerfield, "Postmastectomy Radiotherapy: An American Society of Clinical Oncology, American Society for Radiation Oncology, and Society of Surgical Oncology Focused Guideline Update," Practical Radiation Oncology, ASTRO, vol. 6, no. 6, pp. 219-234, 19 9 2016.
[6] K. Rastogi, S. Sharma, S. Gupta, N. Agarwal and S. Bhaskar, "Dosimetric comparison of IMRT versus 3DCRT for post-mastectomy chest wall irradiation," Radiation Oncology Journal, vol. 36, no. 1, pp. 71-78, 30 3 2018.

Guideline Information

Policy #: 10988
Policy Initiated: 06/19/2019
Last Review Date: 06/28/2022

Central Nervous System Cancer

Benign Brain Tumor

(Meningioma, Acoustic Neuroma, Pituitary Adenoma, Craniopharyngioma, Schwannoma, Chordoma)

IMRT for a benign brain tumor may be considered medically appropriate when **ALL** of the following:

- **ANY** of the following:
  - Treatment to be delivered consists of 10 fractions and **ANY** of the following:
    - Radiation to a side that has previously been radiated or an adjacent site for palliative care
    - Recurrence risk high
  - Treatment to be delivered consists of 30 fractions or less and **ANY** of the following:
    - The IMRT plan results in a reduction to the brain stem of at least 10%
    - The IMRT plan results in a reduction of the mean brain dose of at least 10%
    - The IMRT plan results in a reduction to the cochlea of at least 10%
    - The IMRT plan results in a reduction to the optic chiasm of at least 10%
    - The patient received previous radiation to this location
- Physical ability and clinical status of **ANY** of the following:
  - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
  - Karnofsky Performance Status (KPS) Grade of 80 or more

Low-Grade Glioma

Astrocytoma, Ganglioglioma, Oligodendroglioma, Pilocytic Tumor, Medulloblastoma, or Juvenile Pilocytic Astrocytoma

IMRT for a low grade glioma may be considered medically appropriate when **ALL** of the following:

- **ANY** of the following:

- Treatment to be delivered consists of 10 fractions and radiation done to a side that has previously been radiated or an adjacent site for palliative care
- Treatment to be delivered consists of 30 fractions of less and **ANY** of the following:
  - The IMRT plan results in a reduction to the brainstem of at least 10%
  - The IMRT plan results in a reduction of the mean brain dose of at least 10%
  - The IMRT plan results in a reduction to the cochlea of at least 10%
  - The IMRT plan results in a reduction to the optic chiasm of at least 10%
  - The patient received previous radiation to this location
  - Recurrence risk high and the tumor is less than 3 cm

- Physical ability and clinical status of **ANY** of the following:
  - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
  - Karnofsky Performance Status (KPS) Grade of 80 or more

High-Grade Glioma

Glioblastoma Multiforme, Anaplastic Astryocytoma, or Brainstem Glioma

IMRT for a high grade glioma may be considered medically appropriate when **ANY** of the following:

- Treatment to be delivered consists of 10 fractions or less for palliative care
- Physical ability and clinical status of **ANY** of the following:
  - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
  - Karnofsky Performance Status (KPS) Grade of 80 or more

AND ANY of the following:

- Treatment to be delivered consists of 11-20 fractions for an inoperable tumor
- Treatment to be delivered consists of 21-33 fractions for a patient 69 years old or younger and **ANY** of the following:
  - There was an image complete resection
  - The tumor is inoperable
  - The patient is not a good surgical candidate

Primary Malignancy with Metastasis to the Brain

IMRT for a primary malignancy with metastasis to the brain may be considered medically appropriate when **ANY** of the following:

- Treatment to be delivered consists of 10 fractions or less for palliative care and **ALL** of the following:
  - Radiation received previously in this location
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more
- Treatment to be delivered consists of 10 fractions or less and **ANY** of the following:
  - The IMRT plan results in a reduction to the brainstem of at least 10%
  - The IMRT plan results in a reduction of the mean brain dose of at least 10%
  - The IMRT plan results in a reduction to the cochlea of at least 10%
  - The IMRT plan results in a reduction to the optic chiasm of at least 10%
  - High risk and there are four (4) or fewer metastatic brain lesions
  - Radiation received previously in this location

LCD 36711
See also, **LCD 36711**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 36773
See also, **LCD 36773**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

Central Nervous System Cancer References

[16] NCCN, "Central Nervous System," 1 2 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/cns.pdf. [Accessed 25 8 2020].

[17] M. P. Maitre, G. R. Krishnatry, J. S. Goda, S. Epari and G. Chnnaswamy, "LONG TERM CLINICAL OUTCOMES WITH HELICAL TOMOTHERAPY BASED IMAGE GUIDED INTENSITY MODULATED RADIOTHERAPY FOR BENIGN AND LOW GRADE BRAIN TUMOURS," Neuro-Oncology, p. 305, 2018.
[18] A. R. Cabrera, J. P. Kirkpatrick, J. B. Fiveash, H. A. Shih and E. J. Koay, "Radiation therapy for glioblastoma: Executive," Practical Radiation Oncology, pp. 217-225, 2016.
[19] E. P. Sulman, N. Ismaila, T. S. Armstrong, C. Tsien and T. T. Batchelor, "Radiation Therapy for Glioblastoma: American Society of Clinical Oncology Clinical Practice Guideline Endorsement of the American Society for Radiation Oncology Guideline," Journal of Clinical Oncology, vol. 35, no. 3, pp. 361-369, 20 1 2017.
[20] T. Wang and M. P. Mehta, "Low-grade glioma radiotherapy treatment and trials.," Neurosurgery Clinics, vol. 30, no. 1, pp. 111-118, 2019.

Guideline Information

Policy #: P_7474, P_7476, P_7475, P_7478
Policy Initiated: 06/30/2019
Last Review Date: 09/20/2021

Gastrointestinal Cancer

Anal Cancer, Colon Cancer or Pancreatic Cancer

IMRT for anal, colon or pancreatic cancer may be considered medically appropriate when **ANY** of the following:

- Treatment to be delivered consists of 10 fractions or less for palliative care
- Treatment to be delivered consists of 30 fractions or less and **ALL** of the following:
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more
  - When compared to a non-IMRT technique, IMRT would substantially decrease normal tissue toxicity
  - A 3D plan has been performed and compared to the IMRT plan
  - Received radiation treatment to this site or an adjacent site; and **ANY** of the following:
    - The IMRT plan results in reduction of radiation volume to the small bowel of at least 20%
    - Recurrence risk high and has received radiation treatment to this site or an adjacent site

Esophageal Cancer

IMRT for esophageal cancer may be considered medically appropriate when **ANY** of the following:

- Treatment to be delivered consists of 10 fractions or less for palliative care
- Treatment to be delivered consists of 28 fractions or less and **ALL** of the following:
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more
  - A 3D plan has been performed and compared to the IMRT plan and when compared to a non-IMRT technique, IMRT would substantially decrease normal tissue toxicity
  - Received radiation treatment to this site or an adjacent site and **ANY** of the following:

- The IMRT plan results in reduction of radiation volume to the spinal cord of at least 10% and the 3D plan would result in delivery to the spinal cord of a 50Gy point dose
- There is a reduction of the V20 of at least 15% with the IMRT plan over the 3D plan

- Treatment to be delivered consists of 28 fractions or less and **ALL** of the following:
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more
  - When compared to a non-IMRT technique, IMRT would substantially decrease normal tissue toxicity
  - Received radiation treatment to this site or an adjacent site

Gastric Cancer

IMRT for gastric cancer may be considered medically appropriate when **ANY** of the following:

- Treatment to be delivered consists of 10 fractions or less for palliative care
- Treatment to be delivered consists of 30 fractions or less and **ALL** of the following:
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more
  - A 3D plan has been performed and compared to the IMRT plan and when compared to a non-IMRT technique, IMRT would substantially decrease normal tissue toxicity
  - Received radiation treatment to this site or an adjacent site and **ANY** of the following:
    - The IMRT plan results in reduction of radiation volume to the spinal cord of at least 10% and the 3D plan would result in delivery to the spinal cord of a 50Gy point dose
    - There is a reduction of the V20 of at least 15% with the IMRT plan over the 3D plan
- Treatment to be delivered consists of 30 fractions or less and **ALL** of the following:
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more
  - When compared to a non-IMRT technique, IMRT would substantially decrease normal tissue toxicity

- Received radiation treatment to this site or an adjacent site

Rectal Cancer

IMRT for rectal cancer may be considered medically appropriate when **ANY** of the following:

- Treatment to be delivered consists of 10 fractions or less to a previous radiation site or for an adjacent site for palliative care
- Treatment to be delivered consists of 30 fractions or less Physical ability and clinical status of **ALL** of the following:
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more
  - **ANY** of the following:
    - This is a definitive treatment
    - This is postoperative treatment
    - A 3D plan performed and compared to the IMRT plan
    - The IMRT plan results in reduction of radiation volume to the small bowel of at least 20%

LCD 36711
See also, **LCD 36711**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 36773
See also, **LCD 36773**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

Gastrointestinal Cancer References

[21] NCCN, "Anal Carcinoma," 6 May 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/anal.pdf. [Accessed 18 8 2020].
[22] NCCN, "Colon Cancer," 15 June 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/colon.pdf. [Accessed 2020 18 Aug].
[23] NCCN, "Pancreatic Adenocarcinoma," 26 Nov 2019. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/pancreatic.pdf. [Accessed 2020 25 8].
[24] D. Mitra, T. S. Hong, N. Horick, B. Rose and L. N. Drapek, "Long-term outcomes and toxicities of a largecohort of anal cancer patients treated withdose-painted IMRT per RTOG 0529," Advances in Radiation Oncology, vol. 2, no. 2, pp. 110-117, 2017.
[25] P. Ding, B. Qiu, L. Cai, W. Xiao and Z. Zeng, "Outcomes of preoperative chemoradiotherapy followed by surgery in patients with unresectable locally advanced sigmoid colon cancer," Chinese Journal of Cancer, vol. 35, no. 65, pp. 1-11, 2016.
[26] S. Lewis, S. C. Sastri, S. Arya, S. Mehta and P. Patil, "Dose escalated concurrent chemo-radiation in borderline resectable and locally advanced pancreatic cancers with tomotherapy based intensity modulated radiotherapy: a phase II study," Journal of Gastrointestinal Oncology, vol. 10, no. 3, pp. 474-482, 2019.
[27] W. Haque, V. Verma, E. B. Butler and B. S. Teh, "Utilization of intensity modulated radiation therapy for anal cancer in the United States," Journal of gastrointestinal oncology, vol. 9, no. 3, pp. 466-477, 2018.
[28] NCCN, "Esophageal and Esophagogastric Junction Cancers," 14 Aug 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/esophageal.pdf. [Accessed 2020 25 Aug].
[29] F. Lordick, C. Mariette, K. Haustermans, R. Obermannova and D. Arnold, "Oesophageal cancer: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up†," Annals of Oncology, vol. supplement 5, pp. 50-57, 2016.
[30] D. Xu, G. Li, H. Hongfei and F. Jia, "Comparison of IMRT versus 3D-CRT in the treatment of esophagus cancer," Medicine, vol. 96, no. 31, p. 31, 2017.
[31] NCCN, "Gastric Cancer," 14 Aug 4040. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/gastric.pdf. [Accessed 25 Aug 2020].
[32] E. C. Smyth, M. Verheij, W. Allum, D. Cunningham, A. Cervantes and D. Arnold, "Gastric cancer: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up†," Annals of Oncology, vol. Supplement 5, pp. 38-49, 2016.
[33] S. Moningi, J. Agani, B. Badgwell, M. Murphy and N. Ikoma, "IMRT Reduces Acute Toxicity in Patients TreatedWith Preoperative Chemoradiation for Gastric Cancer," Advances in Radiation Oncology, vol. 5, pp. 369-376, 2020.

[34] A. Skrobala, M. Adamczyk and A. Karczewksa-Dzionk, "Feasibility of intensity-modulated radiotherapy to treat gastric cancer," Reports of Practical Oncology and Radiotherapy, vol. 24, pp. 68-73, 2019.
[35] NCCN, "Rectal Cancer," 25 June 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/rectal.pdf. [Accessed 25 August 2020].

Guideline Information

Policy #: P_7493, P_7495, P_7311, P_7499, P_7498
Policy Initiated: 06/30/2019
Last Review Date: 09/20/2021

HEALTHHELP®
A WNS COMPANY

Gynecologic Cancer

Cervical Cancer

IMRT for cervical cancer may be considered when **ANY** of the following:

- Treatment to be delivered consists of 10 fractions or less to a previous radiated site or an adjacent site for palliative care
- Treatment to be delivered consists of 30 fractions or less and **ANY** of the following:
  - When compared to a non-IMRT technique, IMRT would substantially decrease normal tissue toxicity and **ANY** of the following:
    - Recurrence risk high
    - A 3D plan has been performed and compared to the IMRT plan and **ANY** of the following:
      - IMRT results in reduction of the mean dose to either kidney by at least 20%
      - IMRT shows a reduction of the small bowel volume of greater than 20% when compared to the 3D plan
      - Para-aortic nodes are being included in this treatment volume
  - To receive Brachytherapy as part of this treatment course
  - To receive SBRT as part of this treatment course
  - IMRT requested is field in field
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more

Endometrial, Ovarian, Vaginal or Vulvar Cancer

IMRT for endometrial, ovarian, vaginal or vulvar cancer may be considered medically appropriate when the patient's medical record demonstrates **ANY** of the following:

- Treatment to be delivered consists of 10 fractions or less to a previous radiated site or an adjacent site for palliative care
- Treatment to be delivered consists of 30 fractions or less and **ANY** of the following:

- Physical ability and clinical status of **ANY** of the following:
  - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
  - Karnofsky Performance Status (KPS) Grade of 80 or more
- When compared to a non-IMRT technique, IMRT would substantially decrease normal tissue toxicity and **ANY** of the following:
  - Recurrence risk high
  - A 3D plan has been performed and compared to the IMRT plan and **ANY** of the following:
    - IMRT results in reduction of the mean dose to either kidney by at least 20%
    - IMRT shows a reduction of the small bowel volume of greater than 20% when compared to the 3D plan
    - Para-aortic nodes are being included in this treatment volume

LCD 36711
See also, **LCD 36711**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 36773
See also, **LCD 36773**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

Gynecological Cancer References

[51] NCCN, "Cervical Cancer," 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/cervical.pdf. [Accessed 25 Aug 2020].
[52] J. Chino, C. M. Annunziata, S. Beriwal, C. Nwachukwu and D. Petereit, "Radiation Therapy for Cervical Cancer: Executive Summary of an ASTRO Clinical Practice Guideline," Practical Radiation Oncology, vol. 10, no. 4, pp. 220-234, 2020.
[53] T. Yamamoto, R. Umezawa, H. Tokunga, M. Kubozono and M. Kozumi, "Clinical experience of pelvic radiotherapy or chemoradiotherapy for postoperative uterine cervical cancer using intensity-modulated radiation therapy," Journal of radiation research, vol. 61, no. 3, pp. 470-478, 2020.

[54] V. Pinzi, V. Landoni, F. Cattani, R. Lazzari and B. A. Jereczek-Fossa, "IMRT and brachytherapy comparison in gynaecological cancer treatment:," Ecancermedicalscience, vol. 13, pp. 1-14, 2019.
[55] M. Ta, A. Schernberg, P. Giraud, L. Monnier and E. Darai, "Endometrial cancer -3DCRT vs IMRT 1 1 Comparison of 3D conformal radiation therapy and intensity-modulated radiation therapy in patients with endometrial cance," Acta Oncologica, vol. 58, no. 8, pp. 1127-1134, 2019.
[56] NCCN, "Uterine Neoplasms," 1 Feb 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/uterine.pdf. [Accessed 25 Aug 2020].
[57] NCCN, "Ovarian Cancer," 11 3 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/ovarian.pdf. [Accessed 25 8 2020].
[58] O. Temelli, M. Demirtas, M. S. Sisecioglu and E. K. Pepele, "Dosimetric Comparison of Adjuvant Pelvic Radiotherapy for Endometrial Cancer using Intensity-Modulated Radiotherapy (IMRT), Volumetric Modulated Arc Therapy (VMAT) and Helical Tomotherapy (HT).," Eurasian Journal of Medicine and Oncology, vol. 3, no. 3, pp. 203-210, 2019.
[59] N. Arians, M. Keiser, L. Benner, N. Rocket and L. Schroder, "Adjuvant intensity modulated whole-abdominal radiation therapy for high-risk patients with ovarian cancer FIGO stage III: final results of a prospective phase 2 study," Radiation Oncology, vol. 14, no. 179, pp. 1-10, 2019.
[60] Y.-Z. Dang, X. Li, Y.-X. Ma, X.-L. Li and T. Yang, "FDG-PET/CT-guided intensity-modulated radiotherapy for 42 FIGO III/IV ovarian cancer: A retrospective study.," Oncology Letters, vol. 17, no. 1, pp. 149-158, 2018.
[61] G. Jacobson and V. Galvan-Turner, "Rethinking the Role of Radiation Therapy in the Management of Epithelial Ovarian Cancer," Diagnostics, vol. 10, no. 4, pp. 1-4, 2020.
[62] A. Jodda, B. Urbanski, T. Piotrowski and J. Malicki, "Relations between doses cumulated in bone marrow and dose delivery techniques during radiation therapy of cervical and endometrial cancer," Physica Medica, vol. 36, pp. 54-59, 2017.

Guideline Information

Policy #: P_7567, P_7568, P_7569, P_7487
Policy Initiated: 06/30/2019
Last Review Date: 09/20/2021

Head and Neck Cancer

Ocular Tumor

IMRT for an ocular tumor (located inside the eye) may be considered when **ANY** of the following:

- Treatment to be delivered consists of 10 fractions or less for palliative care
- Treatment to be delivered consists of 30 fractions or less with **ALL** of the following:
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more

  ANY of the following:
  - The IMRT plan results in a reduction to the brainstem of at least 10%
  - The IMRT plan results in a reduction to the cochlea of at least 10%
  - The IMRT plan results in a reduction to the lens of at least 10%
- Treatment to be delivered consists of 30 fractions or less and **ANY** of the following
  - High risk; and **ANY** of the following
    - The IMRT plan results in a reduction of the mean brain dose of at least 10%
    - The IMRT plan results in a reduction to the optic chiasm of at least 10%
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more

Laryngeal, Hypopharyngeal, Oropharyngeal, Oral Cavity, Nasophayngeal, Salivary Gland and Sinus Cavity Tumors and Secondary Squamous Cell Cancer of the Neck Lymph Glands

IMRT for a laryngeal, hypopharyngeal, oropharyngeal, oral cavity, nasopharyngeal, salivary gland, sinus cavity tumors and secondary squamous cell cancer that has spread to the neck lymph nodes may be considered when **ANY** of the following:

- Treatment to be delivered consists of 35 fractions or less to the same or immediately adjacent area received previous XRT and is considered high risk

- Treatment to be delivered consists of 35 fractions or less and when compared to a non-IMRT technique, IMRT would substantially decrease normal tissue toxicity; and **ANY** of the following:
  - Will receive any other type of radiation as part of this treatment course
  - With a 3D plan the Dmax to the mandible is greater than 60 Gy
  - With a 3D plan the D50 to the ipsilateral parotid is greater than 30 Gy
  - With a 3D plan the D50 to the contralateral parotid is greater than 24Gy
  - With a 3D plan does the optic chiasm receive greater than 45Gy
  - With a 3D plan, the spinal cord will receive greater than 45Gy

Thyroid Cancer

IMRT for a thyroid tumor may be considered when **ANY** of the following:

- Treatment to be delivered consists of 35 fractions or less to the same or immediately adjacent area received previous XRT and is considered high risk
- Treatment to be delivered consists of 35 fractions or less and when compared to a non-IMRT technique, IMRT would substantially decrease normal tissue toxicity and **ANY** of the following:
  - With a 3D plan the Dmax to the mandible is greater than 60 Gy
  - With a 3D plan the D50 to the ipsilateral parotid is greater than 30 Gy
  - With a 3D plan the D50 to the contralateral parotid is greater than 24Gy
  - With a 3D plan, the spinal cord will receive greater than 45G

LCD 36711
See also, **LCD 36711**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 36773
See also, **LCD 36773**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

Head and Neck Cancer References

[65] R. Pacelli, M. Caroprese, G. Palma, C. Oliverio and S. Clemente, "Technological evolution of radiation treatment: Implications for clinical applications," Seminars in Oncology, vol. 46, no. 3, pp. 193-201, 2019.
[66] NCCN, "Head and Neck Cancers," 9 6 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/head-and-neck.pdf. [Accessed 25 8 2020].
[67] G. Maheshwari, A. Dhanawat, H. S. Kumar, N. Sharma and S. L. Jakhar, "Clinical and dosimetric impact of adaptive intensity-modulated radiotherapy in locally advanced head-and-neck cancer," Journal of Cancer Research and Therapeutics, vol. 16, no. 3, pp. 600-604, 2020.
[68] A. Inai, E. Duman and E. E. Ozkan, "Evaluating different radiotherapy treatment plans, in terms of critical organ scoring index, conformity index, tumor control probability, and normal tissue complication probability calculations in early glottic larynx carcinoma," Journal of Cancer Research and Therapeutics, vol. 16, no. 3, pp. 485-493, 2020.
[69] K. Mashhour, J. Atef, A. Selim, M. Moez and H. Zawam, "Accelerated Radiotherapy with Concurrent Chemotherapy in Locally Advanced Head and Neck Cancers: Evaluation of Response and Compliance.," Asian Pacific Journal of Cancer Prevention, vol. 21, no. 5, pp. 1399-1407, 2020.
[70] S. Koyfman, N. Ismaila, D. Crook, A. Cruz and C. P. Rodriquez, "Management of the Neck in Squamous Cell Carcinoma of the Oral Cavity and Oropharynx: ASCO Clinical Practice Guideline," Journal of Clinical Oncology, vol. 37, no. 20, pp. 1753-1774, 2019.
[71] S. Wu, R. Quan, L. Han, Z. Huaqing and B. Zhang, "Analysis of intensity-modulated radiotherapy for patients with nasopharyngeal carcinoma," Medicine, vol. 99, no. 30, p. supplement, 2020.
[72] NCCN, "Thyroid Carcinoma," 15 7 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/thyroid.pdf. [Accessed 26 8 2020].
[73] S. Filetti, C. Durante, S. Leboulleux, L. D. Locati and K. Newbold, "Thyroid cancer: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up†," Annals of Oncology, vol. special article, pp. 1856-1883, 2019.
[74] F. Xue, D. Li, C. Hu, Z. Wang and X. He, "Application of intensity-modulated radiotherapy in unresectable poorly differentiated thyroid carcinoma," Oncotarget, vol. 8, no. 9, pp. 15934-15942, 2017.
[75] N. Besic, M. Dremel and G. Pilko, "Locoregional disease control after external beam radiotherapy in 91 patients with differentiated thyroid carcinoma and pT4 tumor stage - a single institution experience.," Radiology and oncology, vol. 52, no. 4, pp. 453-460, 2018.

Guideline Information

Policy #: P_7477, P_7482, P_7481, P_7480, P_7479, P_7483, P_7484, P_7485, P_7572, P_7486
Policy Initiated: 06/30/2019

Hepatobiliary Cancer

Biliary and Hepatic Cancer

IMRT for a biliary or hepatic tumor may be considered when **ANY** of the following:

- Treatment to be delivered consists of 10 fractions or less for palliative care
- Treatment to be delivered consists of 30 fractions or less and when compared to a non-IMRT technique, IMRT would substantially decrease normal tissue toxicity and **ANY** of the following:
  - Recurrence risk high
  - 3D plan has been performed and compared to the IMRT plan and the IMRT plan results in reduction of the small bowel by at least 20%
  - Received radiation treatment to this site or an adjacent site.

LCD 36711
See also, **LCD 36711**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 36773
See also, **LCD 36773**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

Hepatobiliary Cancer References

- NCCN, "Hepatobiliary Cancer," 4 8 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/hepatobiliary.pdf. [Accessed 26 8 2020].
- R. T. Shroff, E. B. Kennedy, M. Bachini, T. Bekaii-Saab and C. Crane, "Adjuvant Therapy for Resected Biliary Tract Cancer: ASCO Clinical Practice Guideline," Journal of Clinical Oncology, vol. 37, no. 12, pp. 1015-1027, 2019.

- J. W. Valle, I. Borbath, S. Khan, F. Huguet and T. Gruenberger, "Biliary cancer: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up†," Annals of Oncology, vol. 27, no. 5, pp. 28-37, 2016.
- H. C. Lee, J. H. Lee, S. W. Lee, H. H. Lee and M. Yu, "Retrospective analysis of intensity-modulated radiotherapy and three-dimensional conformal radiotherapy of postoperative treatment for biliary tract cancer.," Radiation Oncology Journal, vol. 37, no. 4, pp. 279-285, 2019.
- H. Zhang, Y. Chen, Y. Hu, P. Yang and B. Wang, "Zhang H, Chen Y, Hu Y, et al. Image-guided intensity-modulated radiotherapy improves short-term survival for abdominal lymph node metastases from hepatocellular carcinoma.," Annals of Palliative Medicine, vol. 8, no. 5, pp. 717-727, 2019.
- S. H. Choi and J. Seong, "Strategic application of radiotherapy for hepatocellular carcinoma," Clinical and Molecular Hepatology, vol. 24, no. 2, pp. 114-134, 2018.

Guideline Information

Policy #: P_7494, P_7496, P_7497
Policy Initiated: 06/30/2019
Last Review Date: 09/20/2021

Prostate Cancer

Prostate Cancer, Low Risk or Early Stage

IMRT for low risk or early stage prostate cancer may be considered when **ALL** of the following

- Treatment to be delivered consists of 25 fractions or less
- Age is 69 years or younger and **ANY** of the following
  - Life expectancy is classified as "healthy" or "vulnerable with a reversible problem" per the SIOG guidelines
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more
    - **AND ANY** of the following:
      IMRT plan reduces bladder toxicity by greater than 20%
      IMRT plan reduces rectal toxicity by greater than 20%
      IMRT plan reduces small bowel toxicity by greater than 20%

Prostate Cancer, Intermediate or High Risk

IMRT for intermediate or high risk prostate cancer may be considered medically appropriate when **ALL** of the following

- Life expectancy greater than 6 months
- Treatment to be delivered consists of 42 fractions or less and **ANY** of the following:
  - Life expectancy is classified as "healthy" or "vulnerable with a reversible problem" per the SIOG guidelines and **ANY** of the following
    IMRT plan reduces bladder toxicity by greater than 20%
    IMRT plan reduces rectal toxicity by greater than 20%
    IMRT plan reduces small bowel toxicity by greater than 20%
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more
    - Recurrence risk high and ANY of the following
      IMRT plan reduces bladder toxicity by greater than 20%

IMRT plan reduces rectal toxicity by greater than 20%
IMRT plan reduces small bowel toxicity by greater than 20%

Prostate Cancer, Post Prostatectomy

IMRT for prostate cancer, post prostatectomy, may be considered medically appropriate when **ALL** of the following

- Treatment to be delivered consists of 36 fractions or less
- 75 years of age or younger and **ALL** of the following:
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more
  - **ANY** of the following:
    - Life expectancy is 6 months or greater; and per International Society of Geriatric Oncology (SIOG) guidelines the patient is classified as healthy or as vulnerable, with a reversible problem with **ANY** of the following:
      - PSA has remained detectable a minimum of 6 months after surgery
      - PSA remained detectable post operatively AND increased on 2 or more labs
      - The final pathology of the specimen Stage T3b or T4
      - There were positive margins on the post-operative pathology
    - **ALL** of the following:
      - Recurrence risk high
      - Life expectancy is 6 months or greater, and **ANY** of the following:
        IMRT plan reduces bladder toxicity by greater than 20%
        IMRT plan reduces rectal toxicity by greater than 20%
        IMRT plan reduces small bowel toxicity by greater than 20%

Prostate Cancer, Metastasis

IMRT for prostate cancer, post prostatectomy, may be considered medically appropriate when **ANY** of the following

- Treatment to be delivered consists of 10 fractions or less; and **ANY** of the following:

- Treated under palliative care
- Treated for metastasis to the brain

- Treatment to be delivered consists of 10 fractions or less and is 75 years of age or younger with a high risk for recurrence, and **ALL** of the following:
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more
  - **ANY** of the following:
    - Treated for metastasis to the spine
    - Treated for metastasis to the lung and IMRT plan will reduce lung toxicity by greater than 20%
    - Treated for metastasis to the bone (other than spine)
- Treatment to be delivered consists of 11-15 fractions and **ALL** of the following
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more
  - Life expectancy is 6 months or greater
  - Treated for metastasis in the spine
  - 75 years of age or younger

LCD 36711
See also, **LCD 36711**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 36773
See also, **LCD 36773**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

Prostate Cancer References

[41] NCCN, "Prostate Cancer," 21 May 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/prostate.pdf. [Accessed 25 August 2020].
[42] B. W. Fischer-Valuck, J. Y. Rao and J. M. MIchalski, "Intensity-modulated radiotherapy for prostate cancer," Translational andrology and urology, vol. 7, no. 3, pp. 297-3072018.
[43] T. Yu, Q. Zhang, T. Zheng, H. Shi and Y. Liu, "The Effectiveness of Intensity Modulated Radiation Therapy versus Three-Dimensional Radiation Therapy in Prostate Cancer: A Meta-Analysis of the Literatures," PLoS One, pp. 1-12, 2016.
[44] B. G. Vanneste, E. J. Limbergen, E. N. van Lin, J. G. van Roermund and P. Lambin, "Prostate Cancer Radiation Therapy: What Do Clinicians Have to Know?," BioMed Research International, vol. 2016, pp. 1-14, 2016.
[45] B. M. Grob, T. G. Torre and A. Petrossian, "Radiotherapy After Radical Prostatectomy: Adjuvant Versus Salvage Approach," in Prostate Cancer, Philadelphia, Elsevier, 2016, pp. 433-440.

Guideline Information

Policy #: P_7501, P_7502, P_7504, P_7503
Policy Initiated: 06/30/2019
Last Review Date: 09/20/2021

Renal Cancer

Renal Cancer

Treatment to be delivered consist of 30 fractions or less; and **ALL** of the following:

- Life expectancy is 6 months or greater
- Physical ability and clinical status of **ANY** of the following:
  - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
  - Karnofsky Performance Status (KPS) Grade of 80 or more
- This is for definitive therapy (no planned surgery) and **ANY** of the following:
  - IMRT plan reduces bladder toxicity by greater than 20%
  - IMRT plan reduces rectal toxicity by greater than 20%
  - IMRT plan reduces small bowel toxicity by greater than 20%
- Treatment to be delivered consists of 30 fractions or less and high risk with a life expectancy of greater than 6 months
- Treatment to be delivered consists of 25 fractions or less , 75 years of age or less, and **ANY** of the following:
  - Another radiation modality will be utilized during the course of this treatment
  - IMRT plan reduces bladder toxicity by greater than 20%
  - IMRT plan reduces rectal toxicity by greater than 20%

LCD 36711
See also, **LCD 36711**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 36773
See also, **LCD 36773**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

Renal Cancer References

[46] NCCN, "Kidney Cancer," 15 July 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/kidney.pdf. [Accessed 25 Aug 2020].
[47] B. Escudier, C. Porta, M. Schmidinger, N. Rioux-Leclercq and A. Bex, "Renal cell carcinoma: ESMO Clinical Practice," Annals of Oncology, pp. 58-68, 2019.
[48] National Cancer Institute, "Renal Cell Cancer Treatment," [Online]. Available: https://www.cancer.gov/types/kidney/hp/kidney-treatment-pdq?redirect=true#_31.

Guideline Information

Policy #: P_7505
Policy Initiated: 06/30/2019
Last Review Date: 09/20/2021

Sarcoma

Primary Sarcoma of the Abdominal Cavity

IMRT for a primary sarcoma of the abdominal cavity may be considered when **ANY** of the following:

- Treatment to be delivered consists of 35 fractions or less and **ALL** of the following:
  - A 3D planning has been performed and compared to the IMRT
  - IMRT would substantially decrease normal tissue compared to a non-IMRT technique and **ANY** of the following
    - The 3D plan would result in the spinal cord receiving a dose of greater than 45Gy
    - The 3D plan would result in the heart would receiving a D100 of greater than 40Gy
    - The 3D plan would result in 2/3 of the kidney receiving a dose of at least 30 Gy5
    - The 3D plan would result in V20 of the lung greater than 35%
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more
- Treatment to be delivered consists of 35 fractions or less and ALL of the following:
  - A 3D planning has been performed and compared to the IMRT
  - Risk for recurrence is high
  - Physical ability and clinical status of **ANY** of the following:
    - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
    - Karnofsky Performance Status (KPS) Grade of 80 or more

Primary Sarcoma of the Head and Neck

IMRT for a primary sarcoma of the head and neck may be considered medically appropriate when the medical record demonstrates the treatment to be delivered consists of 35 fractions or less and **ALL** of the following:

- 3D planning has been performed and compared to the IMRT
- IMRT would substantially decrease normal tissue compared to a non-IMRT technique; and **ANY** of the following

- The 3D plan would result in the D50 to the contralateral parotid is greater than 24 Gy
- The 3D plan would result in the D50 to the ipsilateral parotid is greater than 30 Gy
- The 3D plan would result in the Dmax to the mandible is greater than 60 Gy
- The 3D plan would result in the optic chiasm will receive greater than 45 Gy
- The 3D plan would result in the spinal cord receiving greater than 45 Gy
- 3D planning has been performed and compared to the IMRT the patient is high risk for recurrence, and the same or immediately adjacent area received previous XRT

- Physical ability and clinical status of **ANY** of the following:
  - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
  - Karnofsky Performance Status (KPS) Grade of 80 or more

Primary Sarcoma of the Extremity or Bone

IMRT for a primary sarcoma of the extremity or bone may be considered medically appropriate when the medical record demonstrates a diagnosis of Ewing Sarcoma and **ALL** of the following:

- Physical ability and clinical status of **ANY** of the following:
  - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
  - Karnofsky Performance Status (KPS) Grade of 80 or more
- **ANY** of the following
  - This is definitive therapy and will receive *33 fractions or less*
  - This is pre-operative therapy and will *receive 25 fractions or less*
  - This is post-operative therapy and will receive *31 fractions or less*

Primary Sarcoma of the Thoracic Cavity

IMRT for a primary sarcoma of the thoracic cavity may be considered medically appropriate when the medical record demonstrates **ANY** of the following:

- Treatment to be delivered consists of 35 fractions or less and **ALL** of the following:
  - A 3D planning has been performed and compared to the IMRT
  - IMRT would substantially decrease normal tissue compared to a non-IMRT technique and **ANY** of the following

- The 3D plan would result in the spinal cord receiving a dose of greater than 45Gy
- The 3D plan would result in the heart would receiving a D100 of greater than 40Gy
- The 3D plan would result in 2/3 of the kidney receiving a dose of at least 30 Gy
- The 3D plan would result in V20 of the lung greater than 35%

- Physical ability and clinical status of **ANY** of the following:
  - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
  - Karnofsky Performance Status (KPS) Grade of 80 or more

- Treatment to be delivered consists of 35 fractions or less and **ALL** of the following:
  - The same or immediately adjacent area received previous XRT
  - Risk for recurrence is high
  - 3D planning has been performed and compared to the IMRT
- Physical ability and clinical status of **ANY** of the following:
  - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
  - Karnofsky Performance Status (KPS) Grade of 80 or more
- Treatment to be delivered consists of 35 fractions or less and **ALL** of the following:
  - 3D planning has been performed and compared to the IMRT
  - IMRT would substantially decrease normal tissue compared to a non-IMRT technique
- Physical ability and clinical status of **ANY** of the following:
  - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
  - Karnofsky Performance Status (KPS) Grade of 80 or more

Sarcoma that has Metastasized to the Rest of the Body

IMRT for a sarcoma that has metastasized to the rest of the body may be considered medically appropriate when the medical record demonstrates the treatment to be delivered consists of 5 fractions or less and **ALL** of the following

- 3D planning has been performed and compared to the IMRT
- IMRT would substantially decrease normal tissue compared to a non-IMRT technique; and **ANY** of the following
  - The 3D plan would result in the D50 to the contralateral parotid is greater than 24 Gy

- The 3D plan would result in the D50 to the ipsilateral parotid is greater than 30 Gy
- The 3D plan would result in the Dmax to the mandible is greater than 60 Gy
- The 3D plan would result in the optic chiasm will receive greater than 45 Gy
- The 3D plan would result in the spinal cord receiving greater than 45 Gy
- 3D planning has been performed and compared to the IMRT, the patient is high risk for recurrence, and the same or immediately adjacent area received previous XRT

- Physical ability and clinical status of **ANY** of the following:
  - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
  - Karnofsky Performance Status (KPS) Grade of 80 or more

LCD 36711
See also, **LCD 36711**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 36773
See also, **LCD 36773**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

Sarcoma References

[84] P. G. Casali, N. Abecassis, S. Bauer, S. Bielack and S. Bonvalot, "Soft tissue and visceral sarcomas: ESMO–EURACAN Clinical Practice Guidelines for diagnosis, treatment," Annals of Oncology, vol. 29, no. 5, pp. 1-17, 2018.
[85] S. S. Tiong, C. Dickie, R. Haas and B. O'Sullivan, "The role of radiotherapy in the management of localized soft tissue sarcomas," Cancer biology & medicine, vol. 13, no. 3, pp. 373-383, 2016.
[86] P. G. Casali, S. Bielack, N. Abecassis, H. T. Aro and S. Bauer, "Bone sarcomas: ESMO–Paed-Can–EURACAN Clinical Practice Guidelines for diagnosis, treatment and," Annals of Oncology, vol. 29, no. 4, pp. 79-95, 2018.
[87] J. Wang, Y. Song, X. Liu, J. Jin and W. Wang, "Comparison of outcome and toxicity of postoperative intensity-modulated radiation therapy with two-dimensional radiotherapy in patients with

soft tissue sarcoma of extremities and trunk.," Cancer Medicine, vol. 2019, no. 8, pp. 902-909, 2018.
[88] G. Studer, C. Glanzmann, F. Maduz, B. Bode and B. Fuchs, "Preoperative IMRT for soft-tissue sarcoma of the extremities and trunk: low rate of wound complications.," Current orthopaedic practice, vol. 29, no. 5, pp. 466-470, 2018.

Guideline Information

Policy #: P_7491, P_7490, P_2223, ,P_7571, P_7492
Policy Initiated: 06/30/2019
Last Review date: 09/20/2021

Skin Cancers

Benign Skin Conditions or Keloids

IMRT for the treatment of benign skin condition or keloid(s):
The current therapy remains uncertain and requires review by a physician reviewer, medical director and/or individual health plan to determine medical appropriateness.

Melanoma

IMRT for Melanoma may be considered medically appropriate when medical record demonstrates that radiation therapy utilizing IMRT for melanoma may be reasonable and appropriate when **ALL** of the following:

- Physical ability and clinical status of **ANY** of the following:
  - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
  - Karnofsky Performance Status (KPS) Grade of 80 or more
- **ANY** of the following
  - Treatment to be delivered consists of 33 fractions or less for adjuvant therapy
  - Treatment to be delivered consists of 35 fractions or less for definitive therapy
- Treatment to be delivered consists of 10 fractions or less for palliative therapy with **NO** ECOG/KPS requirement.

Non-Melanoma Skin Cancer (Merkel Cell, Basal Cell, Squamous Cell, Dermatofibrosarcoma)

IMRT for non-melanoma skin cancer may be considered medically appropriate when the medical record demonstrates **ALL** of the following:

- Physical ability and clinical status of **ANY** of the following:
  - Eastern Cooperative Oncology Group (ECOG) Performance Status Grade of 1 or less
  - Karnofsky Performance Status (KPS) Grade of 80 or more
- **ANY** of the following:
  - Treatment to be delivered consists of 33 fractions or less and **ANY** of the following:

- Dermatofibrosarcoma Protuberans
- Merkel Cell Carcinoma

- Treatment to be delivered consists of 35 fractions or less and **ANY** of the following:
  - Basal Cell Carcinoma
  - Squamous Cell Carcinoma and **ANY** of the following:
    - **NO** history of connective tissue disease (ie: scleroderma)
    - **NO** history of genetic conditions predisposing to skin cancer (ie: basal cell nevus syndrome)
- Treatment to be delivered consists of 10 fractions or less and **ALL** of the following:
  - ECOG/KPS score **NOT** required
  - Merkel Cell Carcinoma
  - This is for palliative care

Guideline Information

Policy #: P_10888
Policy Initiated: 06/30/2019
Last Review Date: 02/21/2022

LCD 36711
See also, **LCD 36711**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 36773
See also, **LCD 36773**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

References

[1] *2021 Clinical Overview; Basal Cell Carcinoma*. [Online]. Available: https://www.clinicalkey.com/#!/content/clinical_overview/67-s2.0-3ba2459c-e37b-4ecd-a968-70ac093f9f11. Accessed February 2022. . Elsevier.

[2] *2021 Clinical Overview; Cutaneous Squamous Cell Carcinoma*. [Online]. Available: https://www.clinicalkey.com/#!/content/clinical_overview/67-s2.0-2c2d982b-c35f-44dc-95b1-917abe87f5b3. Accessed February 2022. . Elsevier.

[3] *2021 Clinical Overview; Melanoma*. [Online]. Available: https://www.clinicalkey.com/#!/content/clinical_overview/67-s2.0-aaad4001-571b-416c-9e34-ac07ae14c6f9. Accessed February 2022. . Elsevier.

[4] *2021 Clinical Overview; Merkel Cell Cancer*. [Online]. Available: https://www.clinicalkey.com/#!/content/clinical_overview/67-s2.0-55f78fbd-3fa0-42f2-8396-bb980cfb5dcb#nondrug-and-supportive-care-heading-45. Accessed February 2022. . Elsevier.

[5] "Soft-Tissue Sarcoma ." Alektia, K; et.al. Gunderson & Tepper's Clinical Radiation Oncology, 5th edition, 2021Chapter: (75); pp: 1359-1385Elsevier

[6] *"NCCN Guidelines Basal Cell Skin Cancer Version 1.2022," National Comprehensive Cancer Network (NCCN).*, 11/17/2021.[Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/nmsc.pdf. Accessed February 2022

[7] *"NCCN Guidelines Cutaneous Melanoma Version 2.2022," National Comprehensive Cancer Network (NCCN).*, 01/26/2022.[Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/cutaneous_melanoma.pdf. Accessed Febrary 2022

[8] *"NCCN Guidelines Dermatofibrosarcoma Protuberans Version 1.2022," National Comprehensive Cancer Network (NCCN).*, 11/17/2021.[Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/dfsp.pdf. Accessed February 2022

[9] *"NCCN Guidelines Merkel Cell Carcinoma Version 1.2022," National Comprehensive Cancer Network (NCCN).*, 11/17/2021.[Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/mcc.pdf. Accessed February 2022

[10] *"NCCN Guidelines Squamous Cell Skin Cancer Version 1.2022," National Comprehensive Cancer Network (NCCN).*, 11/17/2021.[Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/squamous.pdf. Accessed February 2022

Testicular Cancer

Testicular Cancer

IMRT for testicular cancer may be considered medically appropriate post orchiectomy when the medical record demonstrates the treatment to be delivered consists of 20 fractions or less, and IMRT plan reduces kidney or small bowel toxicity by greater than 20% with **ANY** of the following conditions:

- Has TI disease or greater
- Has extracapsular extension (ECE)
- Has improvement of the spermatic cord

LCD 36711
See also, **LCD 36711**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 36773
See also, **LCD 36773**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

Testicular Cancer References

[49] NCCN, "Testicular Cancer," 12 5 2020. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/testicular.pdf. [Accessed 25 August 2020].
[50] J. Jonska-Gmyrek, P. Peczkowski, W. Michalski, G. Poniatowska and A. Zolciak-Siwinska, "Radiotherapy in testicular germ cell," Contemporary Oncology, vol. 21, no. 3, pp. 203-208, 2017.

Guideline Information

Poiicy #: P_7506
Policy Initiated: 06/30/2019
Last Review Date: 09/20/2021

Lung Cancers

(Thoracic Cancers)

Stage I and II Non-Small Cell Lung Cancer, Small Cell Lung Cancer, Limited or Extensive Stage

IMRT for stage I and II non-small cell lung cancer, small cell lung cancer, limited or extensive stage may be considered medically appropriate when the medical record demonstrates that the treatment to be delivered consists of 35 fractions or less and **ANY** of the following:

- Recurrence risk high
- Radiation therapy requested is being used for curative intent, a 3D plan has been performed and compared to the IMRT plan and when compared to a non-IMRT would substantially decrease normal tissue toxicity and **ANY** of the following
  - Motion management was implemented (either 4D CT, respiratory gating or breath hold technique) and **ANY** of the following:
    - With a 3D plan, the spinal cord receives greater than 50 Gy to a point dose
    - With a 3D plan, there are hot spots greater than 115% of the prescription dose and IMRT reduces these hotspots by greater than 15%
    - There is a reduction of the V20 of at least 10% with the IMRT plan over the 3D plan and with a 3D plan, the V20 is greater than 35%
  - The same or immediately adjacent area received previous radiation therapy

Mesothelioma, Stage III Lung Cancer and Thymoma/Thymic Cancer

• IMRT for mesothelioma, stage III lung cancer and thymoma/thymic cancer may be considered medically appropriate when the medical record demonstrates **EITHER** of the following

- Treatment to be delivered consists of 10 fractions or less for palliative care.
- Treatment to be delivered consists of 35 fractions or less and **ANY** of the following:
  - Recurrence risk high
  - Radiation therapy requested is being used for curative intent [103] [99], a 3D plan has been performed and compared to the IMRT plan [104]and when compared to a non-IMRT would substantially decrease normal tissue toxicity; and **EITHER** of the following:

- There has been some form of motion management implemented (either 4D CT [43] [104], respiratory gating or breath hold technique) and **ANY** of the following
  - With a 3D plan, the spinal cord receives greater than 50 Gy to a point dose
  - With a 3D plan, there are hot spots greater than 115% of the prescription dose and IMRT reduces these hotspots by greater than 15%
  - There is a reduction of the V20 of at least 10% with the IMRT plan over the 3D plan and with a 3D plan, the V20 is greater than 35%
- The same or immediately adjacent area received previous radiation therapy

Lung Cancer, Palliative Care

Palliative treatment for lung cancer with IMRT
The current therapy remains uncertain and requires review by a physician reviewer, medical director and/or individual health plan to determine medical appropriateness.

LCD 36711
See also, **LCD 36711**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 36773
See also, **LCD 36773**: Intensity Modulated Radiation Therapy (IMRT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

Thoracic Cancer References

[97] T. Itonaga, R. Mikami, H. Nakayama, T. Saito and S. Shiraishi, "Phase II study of compensator-based non-coplanar intensity-modulated radiotherapy for Stage I non-small-cell lung cancer.," Journal of radiation research, vol. 60, no. 3, pp. 387-393, 2019.
[98] NCCN, "Non-Small Cell Lung Cancer," 2020 15 6. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/nscl.pdf. [Accessed 2020 25 8].
[99] M. G. Kris, L. E. Gaspar, J. E. Chaft, E. B. Kennedy and C. G. Azzoli, "Adjuvant Systemic Therapy and Adjuvant Radiation Therapy for Stage I to IIIA Completely Resected Non–Small-Cell

Lung Cancers: American Society of Clinical Oncology/Cancer Care Ontario Clinical Practice Guideline Update," Journal of Clinical Oncology, vol. 35, no. 25, pp. 2960-2974, 2017.
[100] NCCN, "Malignant Pleural Mesothelioma," 2019 27 11. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/mpm.pdf. [Accessed 25 8 2020].
[101] NCCN, "Thymomas and Thymic Carcinomas," 27 11 2019. [Online]. Available: https://www.nccn.org/professionals/physician_gls/pdf/thymic.pdf. [Accessed 25 8 2020].
[102] H. L. Kindler, N. Ismaila, S. G. Armato, R. Bueno and M. Hesdorffer, "Treatment of Malignant Pleural Mesothelioma: American Society of Clinical Oncology Clinical Practice Guideline," Journal of Clinical Oncology, vol. 36, no. 13, pp. 1343-1373, 2018.
[103] P. E. Postmus, M. Oudkerk, M. K. Kerr, D. A. Waller and J. Vansteenkiste, "Early and locally advanced non-small-cell lung cancer (NSCLC): ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up," Annals of Oncology, pp. 1-21, 2017.
[104] M. D. Jeter, D. Gomez, Q. Nguyen, R. Komaki and X. Zhang, "Simultaneous Integrated Boost for Radiation Dose Escalation to the Gross Tumor Volume With Intensity Modulated (Photon) Radiation Therapy or Intensity Modulated Proton Therapy and Concurrent Ch," International journal of radiation oncology, biology, physic, vol. 100, no. 3, pp. 730-737, 2018.
[105] N. Y. Yu, T. A. DeWees, C. Liu, T. B. Daniels, J. B. Ashman and S. E. Beamer, " Early Outcomes of Patients With Locally Advanced Non-small Cell Lung Cancer Treated With Intensity-Modulated Proton Therapy Versus Intensity-Modulated Radiation Therapy: The Mayo Clinic Experience," Advances in radiation oncology, vol. 5, no. 3, pp. 450-458, 2020.
[106] M. Simon, T. Shochat, N. Peled, A. Zer and M. Kramer, "Intensity-modulated radiotherapy is a safe and effective treatment for localized malignant pleural mesothelioma," Thoracic Cancer, vol. 9, pp. 1470-1475, 2018.
[107] A. J. Yang, S. H. Choi, H. K. Byun, H. J. Kim and C. G. Lee, "The role of salvage radiotherapy in recurrent thymoma," Radiation Oncology Journal, vol. 37, no. 3, pp. 193-200, 2019.
[108] S. A. Dooley and C. M. Anderson, "Definitive IMRT for Stage III Thymic Carcinoma: A Brief Report and Literature Review," Frontiers in Oncology, vol. 6, pp. 1-4, 2016.

Guideline Information

Policy #: P_7468, P_7470, P_7471, P_7469, P_7570, P_2237, P_7472
Policy Initiated: 06/30/2019
Last Review Date: 09/20/2021

Procedure Codes

Intensity-modulated radiation therapy (IMRT) Associated Procedure Codes

Table 1. Intensity-modulated radiation therapy (IMRT) Associated Procedure Codes

CODE	DESCRIPTION
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
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

Definitions/Key Terms

2D/3D

2D, also known as conventional radiation therapy, utilizes radiographic films to determine the best position to place the radiation beams in order to deliver an adequate dose of radiation to the tumor while limiting the exposure to surrounding tissue and organs. Planning for this type of therapy is normally done with the use of a fluoroscopic simulator.

3D, conformal radiation therapy, utilizes computed tomography scan (CT) images, most, but may also utilize magnetic resonance imaging (MRI) or positron emission testing with CT (PET/CT) for correlation. This is done to determine the best position in which to place the radiation beams in order to deliver an adequate dose of radiation to the tumor while limiting the exposure to surrounding tissue and organs. This is an improvement over the utilization of the flat images used to plan beam placement in conventional radiation therapy as it provides a 3D image of the surrounding tissue and organs. This imaging improves the ability to map the radiation beam more accurately to the tumor.

Brachytherapy is a form of radiation therapy, which utilizes a radioactive source placed in or in close proximity to the tumor. It can be done by placing the radioactive source on the surface of the body or within a body cavity depending on the area to be treated. Temporary brachytherapy places a delivery device, such as a catheter, needle, or applicator into the tumor. Medical imaging helps position the radiation sources. The doctor may insert the delivery device into a body cavity such as the vagina or uterus (intracavitary). Or, the doctor may insert an applicator (needle or catheter) into body tissues (interstitial). High dose-rate (HDR) treatments deliver radiation over 10 to 20 minutes per session. Low dose-rate (LDR) treatments deliver radiation over 20 to 50 hours. Pulsed dose-rate (PDR) treatments deliver radiation in periodic pulses.

Staging (cancer) is the extent of cancer, such as tumor size and if it has metastasized.

Breast lumpectomy is a breast-conserving surgery (BCS) removes the cancer while leaving as much normal breast as possible. Usually some surrounding healthy tissue and lymph nodes also are removed.

Contura Multi-lumen Balloon Contura is another balloon applicator similar to MammoSite that is used to deliver intra-cavity radiation in APBI treatments. Contura with four surrounding lumens for loading high dose-rate (HDR) sources from an after loader system can provide an assymetric dose distribution. It can give a more flexible shape of dose.

Ductal carcinoma in situ (DCIS) is any of a histologically variable group of precancerous growths or early carcinomas of the lactiferous ducts that have the potential of becoming invasive and spreading to other tissues.

Eastern Cooperative Oncology Group (ECOG) scale describes a patient's level of functioning in terms of the ability to care for one's self, daily activity and physical ability (eg, walking, working).

Estrogen receptor (ER)-positive cells have a protein that binds to the hormone estrogen; cancer cells that are ER positive may need estrogen to grow.

Fraction is the full dose of radiation that is usually divided into a number of smaller doses called fractions. This allows healthy cells to recover between treatments. Factions are a series of treatment sessions that make up the radiotherapy course.

Karnofsky Performance Status (KPS) is an assessment tool for functional impairment. It can be used to compare effectiveness of different therapies and to assess the prognosis in individual patients. In most serious illnesses, the lower the Karnofsky score, the worse the likelihood of survival.

Intensity modulated radiation therapy (IMRT) is a type of three-dimensional radiation therapy that uses computer-generated images to match radiation to the size and shape of a tumor. In IMRT, thousands of tiny radiation beams enter the body from many angles and intersect the tumor. Since the intensity of each beam can be controlled, the radiation dose can wrap around normal tissue, create concave shapes and turn corners. The aim is to deliver a higher radiation dose to a tumor with less damage to nearby healthy tissue.

Intraoperative Radiation Therapy (IORT) is an intensive radiation treatment that is administered during surgery, and allows direct radiation to the target area while sparing normal surrounding tissue.

Lymphovascular invasion (LVI) is the presence of tumor cells within a definite endothelial-lined space (lymphatics or blood vessels) in the breast surrounding invasive carcinoma. The presence of LVI is associated with an increased risk of axillary lymph node and distant metastases

MammoSite is a system used to deliver internal radiation therapy to breast cancer patients after surgery to remove their cancer. MammoSite targets only the part of the breast where the cancer was found. After a patient has had a lumpectomy to remove the cancer, a small balloon on the end of a catheter (thin tube) is inserted into the empty space left by the surgery. The balloon is then filled with liquid and left in place. Using the catheter, radioactive seeds are put into the balloon twice a day for five days and removed each time. Once treatment has ended, the catheter and balloon are removed. Mammosite is a type of intracavitary brachytherapy and partial breast irradiation therapy (PBRT). Also called balloon catheter radiation.

Margin is the edge or border of the tissue removed in cancer surgery.

Metastases is the spread of a disease-producing agency (such as cancer cells) from the initial or primary site of disease to another part of the body.

Palliative treatment is treatment given to help relieve the symptoms and reduce the suffering caused by cancer or other life-threatening diseases. Palliative therapy may help a person feel more comfortable, but it does not treat or cure the disease.

Proton therapy, also called proton beam therapy **(PBRT)**, is a type of radiation therapy that uses protons rather than x-rays to treat cancer. A proton is a positively charged particle. At high energy, protons can destroy cancer cells.

Recurrence is a new occurrence of something that happened or appeared before.

Resection is the surgical removal of part of an organ or structure.

Stereotactic Body Radiation Therapy (SBRT) is a method of External Beam Radiotherapy (EBRT) that accurately delivers a high dose of irradiation in one or few treatment fractions to an extracranial target.

Strut-Adjusted Volume Implant (SAVI) Brachytherapy The strut-adjusted volume implant (SAVI) (Cianna Medical, Aliso Viejo, CA, USA) is an effective method of HDR brachytherapy treatment for early-stage breast carcinomas. SAVI place into a lumpectomy cavity through a single skin incision. It contains a central source channel, and also 6, 8, or 10 peripheral source channels which can be differentially loaded. Acceptable dose conformity to the lumpectomy cavity can be obtained by loading the channels with varying length of time.

Ancillary Codes

77370 CPT Standards

- CPT 77370 is allowed one time per course of therapy. Maximum quantity of special physics consultation (CPT 77370) allowed per course of treatment is one (1)
- A special physics consultation is not approved for treatment planning summaries, IMRT QA or services defined by another CPT code
- Special physics consultation (CPT 77370) services must be requested by the provider;
- When a special physics consultation is requested in conjunction will all other forms of radiation therapy, patient specific medical necessity rationale is required. CPT® 77370 will be approved if **ALL** of the following criteria are met:
  - The rationale is supplied by the provider
  - CPT™ 77370 has not been previously authorized within the same course of therapy
  - The rationale explains the need for a medical physicist's expertise, which is NOT relate to a treatment-planning summary, IMRT QA or services described by another CPT™ code
- Requests not identified as meeting the criteria outlined above will require a peer to peer physician review.

77387 CPT Standards

- IGRT billing) is allowed when medically necessary and authorized. The use of IGRT procedures may be subject to physician review in non-IMRT cases
- When IGRT is performed in conjunction with 2D or 3D treatment delivery, the technical component of IGRT (77387-TC in physician offices/freestanding facilities and all hospital based
- IGRT procedures and port films (CPT 77417) are not billable on the same date of service, for the same treatment site

77014 CPT Standards

CPT™ 77014 may be utilized for obtaining computerized tomography images utilized for planning purposes when performed separate from the simulation procedure. This may occur at a separate facility or place of service or at a later time during the treatment process to obtain new data for subsequent dosimetry planning on reduce volumes.

77334 CPT Standards

- Immobilization devices are billable as many times as they are created, but only once per device
- One complex treatment device (CPT™ 77334) may be approved for each external beam course of therapy for an immobilization device created during simulation. If an immobilization device is not created by the provider, the authorization must not be utilized
- For brachytherapy, one (1) treatment device can be approved for each placement. Per ASTRO, a device that is left in place for more than one fraction is billed only once
- 1 complex treatment device (CPT™ 77334) may be approved for each prostate external beam course of therapy for a rectal balloon. If a rectal balloon is not utilized for treatment, the authorization must not be utilized
- Beam-modifying devices: only one device is billable per port/field
- Mirrored portal pair of devices is billable as a quantity of one (1)
- For dosimetry/planning services, beam-modifying treatment devices may be approved up to the maximum number below per phase of treatment and documentation is present to support each device.
  - 2D, 3D and IMRT Compensator Based treatment deliveries is nine
  - Proton is nine
  - SBRT is ten
  - LDR Brachytherapy is one (1) per placement/insertion
  - HDR Brachytherapy is one (1) per placement/insertion
- Additional services may be requested and will be reviewed for medical necessity based on individual patient circumstances

77336 CPT Standards

CPT™ 77336 is billable only one time per five fractions of treatment. At least three fractions of therapy must occur at the end of the course for an additional continuing physics charge to be billed. CPT™ 77336 will be approved at a quantity equal to the number of authorized fractions divided by 5, rounded to the nearest multiple of 5.

Disclaimer & Legal Notice

Purpose

The purpose of the HealthHelp's clinical guidelines is to assist healthcare professionals in selecting the medical service that may be appropriate and supported by evidence to safely improve outcomes. Medical information is constantly evolving, and HealthHelp reserves the right to review and update these clinical guidelines periodically. HealthHelp reserves the right to include in these guidelines the clinical indications as appropriate for the organization's program objectives. Therefore the guidelines are not a list of all the clinical indications for a stated procedure, and associated Procedure Code Tables may not represent all codes available for that state procedure or that are managed by a specific client-organization.

Clinician Review

These clinical guidelines neither preempt clinical judgment of trained professionals nor advise anyone on how to practice medicine. Healthcare professionals using these clinical guidelines are responsible for all clinical decisions based on their assessment. All Clinical Reviewers are instructed to apply clinical indications based on individual patient assessment and documentation, within the scope of their clinical license.

Payment

The use of these clinical guidelines does not provide authorization, certification, explanation of benefits, or guarantee of payment; nor do the guidelines substitute for, or constitute, medical advice. Federal and State law, as well as member benefit contract language (including definitions and specific contract provisions/exclusions) take precedence over clinical guidelines and must be considered first when determining eligibility for coverage. All final determinations on coverage and payment are the responsibility of the health plan. Nothing contained within this document can be interpreted to mean otherwise.

Trademark (™) and Copyright

Ancillary Payment Policy Recommendations

Radiation Therapy

Policy Initiated: 01/01/2022

Radiation Oncology Ancillary Code Policy

Background

HealthHelp's Radiation Therapy Program includes utilization management review of primary treatments, as well as coding and reimbursement strategies to promote appropriate ordering and payment across secondary/ancillary treatment planning and treatment approach procedures (see full list of included codes in the Associated Procedure Code se).

Review & Authorization

Medical appropriateness review and authorization of primary radiation therapy treatments includes 2D3D, Brachytherapy, IMRT, Neutron Therapy, Proton Beam, and Stereotactic Radiosurgery. These reviews are supported by our high-touch, educational model, and leverages the use of authorization denial(s) as a last resort, and only following peer-to-peer physician discussions.
All primary radiation treatment authorizations are also reviewed against our current, evidence- and practice-based management of ancillary or secondary treatment planning and treatment approach procedure codes to promote appropriate ordering, billing, and reimbursement. HealthHelp employs multiple management strategies within the ancillary coding space, including (1) offering user-prompting within our authorization system to promote appropriate ordering, (2) authorizing appropriate ancillary codes and billable units in addition to the primary procedure, (3) monitoring claims for fraud, waste, and abuse.

1. Appropriate Ancillary Code Ordering

To address the most frequently overused and inappropriate ordering of ancillary procedures, HealthHelp's system generates user-prompts based on the users selection of a range of available codes. Our goal is to improve appropriate ordering of ancillary codes prior to the primary treatment being authorized and prior to the case being escalated for additional clinical review. User prompts are generated for the following inappropriately ordered combinations of ancillary codes:

Table 1. Ancillary Codes - Inappropriate Combinations

77280 & 77387	77338 & 77334	77307 & 77306	77432 & 77435

77280 & 77014	77431 & 77427	77387 & 77014	G6002 & 77014
77334 & 77332	77295 & 77301	77318 & 77316	

2. Appropriate Ancillary Code Reimbursement, by Cancer-Type and Primary Treatment

The current evidence base within Radiation Therapy supports appropriate billable ranges for select cancer diagnoses when treated by select primary treatment modalities. When a primary Radiation Therapy treatment modality is authorized, HealthHelp systems automatically reviews the patient's cancer-type/diagnosis and will approve the appropriate billable ancillary code(s), as well as the appropriate billable units for that ancillary code. The evidence base does not support, nor do we recommend payment for services above these recommendations.

2.1 Cone-Beam Computed Tomography (CBCT) Guidance (CPT 77014 or CPT 77387)

CPT 77014 OR CPT 77387 - IMRT or 2D3D

CBCT (CPT 77014 OR CPT 77387) is clinically appropriate when IMRT or 2D3D is being utilized in the following clinical settings (Loo Jr., et al. Revised 2019 (CSC/BOC)):

Cancer Type	Units Approved
Brain	Up to 33 max
Bone Metastasis	Up to 20 max
Cervical	Up to 35 max
Endometrial	Up to 35 max
Hepatobiliary	Up to 30 max
Keloid	None
Lung	Up to 35 max
Pancreatic	Up to 30 max
Prostate	Up to 45 max
Rectal	Up to 30 max

Clinical Rationale/Guidance:

IGRT images should be reviewed by the physician initially at the time of verification (online image guidance) and then according to the frequency defined in the IGRT directive, prior to the subsequent fraction, to ensure treatment accuracy and reproducibility (offline image guidance).
Each facility, under the direction of the radiation oncologist, should define a threshold above which the physician is required to review the patient setup and images before treatment is delivered (online image guidance). This threshold can vary according to the site treated or patient specific anatomic factors (ie, abdominal or pelvic treatment site in an obese patient in whom larger shifts

are expected). In SRS and SBRT cases, definition of a threshold for physician notification may not be necessary because the physician and physicist will already be present for real-time image approval.

If IGRT via advanced imaging cannot be performed because of technical issues, the radiation oncologist will decide whether to cancel/postpone treatment until advanced imaging is restored or, using alternate image guidance such as orthogonal MV x-rays, to register either fiducial markers or bony anatomy for a limited number of fractions.

CPT 77014 - SRS/SBRT or Brachytherapy

CBCT (CPT 77014) is clinically appropriate when SRS/SBRT or Brachytherapy is being utilized in the following clinical settings (ASTRO 2015)(CMS 2015):

Cancer Type	Units Approved
Brain	1 Maximum
Bone Metastasis	1 Maximum
Cervical	1 Maximum
Endometrial	1 Maximum
Hepatobiliary	1 Maximum
Keloid	None
Lung	1 Maximum
Pancreatic	1 Maximum
Prostate	1 Maximum
Rectal	1 Maximum

Clinical Rationale/Guidance:

The American Medical Association (AMA) bundles IGRT codes and includes these within the primary codes for daily treatment. Because of this, IGRT codes may not be billed separately for Stereotactic Body Radiation Therapy (SBRT). Similarly, IGRT codes cannot be billed separately with Stereotactic Radiosurgery (SRS), as referenced in the ASTRO coding guide.

CPT 77014 or CPT 77387 - Proton Therapy

CBCT (CPT 77014 OR CPT 77387) is clinically appropriate when Proton Therapy is being utilized in the following clinical settings (ASTRO 2017

Cancer Type	Units Approved
Brain	Up to 33 max
Bone Metastasis	Up to 20 max
Cervical	Up to 35 max
Endometrial	Up to 35 max
Hepatobiliary	Up to 30 max

Cancer Type	Units Approved
Keloid	None
Lung	Up to 35 max
Pancreatic	Up to 30 max
Prostate	Up to 45 max
Rectal	Up to 30 max

Clinical Rationale/Guidance:

CBCT is appropriate for proton therapy when available on the treatment device.

2.2 Complex Treatment Devices, Design & Construction (CPT 77263, CPT 77334 or CPT 77300)

CPT 77263 - 2D3D, IMRT, Proton Therapy, Brachytherapy, or SBRT

Complex Treatment Devices, Design & Construction (CPT 77263) is clinically appropriate when 2D3D, IMRT, Proton Therapy, Brachytherapy, or SBRT is being is being utilized in the following clinical settings:

Cancer Type	Units Approved
Brain	Up to 1 maximum
Bone Metastasis	Up to 1 maximum
Cervical	Up to 1 maximum
Endometrial	Up to 1 maximum
Hepatobiliary	Up to 1 maximum
Keloid	Up to 1 maximum
Lung	Up to 1 maximum
Pancreatic	Up to 1 maximum
Prostate	Up to 1 maximum
Rectal	Up to 1 maximum

Clinical Rationale/Guidance:

CPT code 77263 should be used when complex treatment planning is involved. Complex planning requires highly complex blocking, custom shielding blocks, tangential ports, special wedges or compensators, three (3) or more separate treatment areas, rotational or special beam considerations, or combination of therapeutic modalities. Complex planning includes interpretation of special testing, tumor localization, treatment volume determination, treatment time/dosage determination, choice of treatment modality, determination of number and size of treatment ports, selection of appropriate treatment devices, and other procedures. (CMS 2015)

CPT 77334 or CPT 77300 - 2D3D

Complex Treatment Devices, Design & Construction (CPT 77334 or CPT 77300) is clinically appropriate when 2D3D is being utilized in the following clinical settings:

Cancer Type	Units Approved
Brain	Up to 10 maximum
Bone Metastasis	Up to 10 maximum
Cervical	Up to 10 maximum
Endometrial	Up to 10 maximum
Hepatobiliary	Up to 10 maximum
Keloid	Up to 1 maximum
Lung	Up to 10 maximum
Pancreatic	Up to 10 maximum
Prostate	Up to 10 maximum
Rectal	Up to 10 maximum

Clinical Rationale/Guidance:

CPT code 77334 should be used for complex treatment devices, design, and construction that include customized, single-use bolus such as wax molds conformed to a particular patient body part; customized blocks (low temperature alloy); customized compensators; wedges; molds or casts; custom made immobilization devices, or eye-shields; custom made immobilization include restraining devices such as aquaplast and alpha cradle.

CPT 77334 or CPT 77300 - IMRT

Complex Treatment Devices, Design & Construction (CPT 77334 or CPT 77300) is clinically appropriate when IMRT is being utilized in the following clinical settings:

Cancer Type	Units Approved
Brain	Up to 1 maximum
Bone Metastasis	Up to 1 maximum
Cervical	Up to 1 maximum
Endometrial	Up to 1 maximum
Hepatobiliary	Up to 1 maximum
Keloid	Up to 1 maximum
Lung	Up to 1 maximum
Pancreatic	Up to 1 maximum
Prostate	Up to 1 maximum
Rectal	Up to 1 maximum

Clinical Rationale/Guidance:

Use of complex treatment devices, design & construction is appropriate for simulation only, it is not appropriate to be used in treatment planning. VMAT (CPT 77338) has better dosimetry and accuracy. This applies to the following clinical scenarios: lung cancer, esophageal cancer, breast cancer, rectal cancer. (CMS 2015) (Merrow, C E, et al., "A dosimetric evaluation of VMAT for the treatment of non-small cell lung cancer." 2013) (Munch, Aichmeier, et al., Comparison of dosimetric parameters and toxicity in esophageal cancer patients undergoing 3D conformal radiotherapy or VMAT 2016) (Liu, et al. 2016)((Zhao, et al. 2016)

CPT 77334 or CPT 77300 - SBRT

Complex Treatment Devices, Design & Construction (CPT 77334 or CPT 77300) is clinically appropriate when SBRT is being utilized in the following clinical settings:

Cancer Type	Units Approved
Brain	Up to 1 maximum
Bone Metastasis	Up to 1 maximum
Cervical	Up to 1 maximum
Endometrial	Up to 1 maximum
Hepatobiliary	Up to 1 maximum
Keloid	Up to 1 maximum
Lung	Up to 1 maximum
Pancreatic	Up to 1 maximum
Prostate	Up to 1 maximum
Rectal	Up to 1 maximum

Clinical Rationale/Guidance:

VMAT (CPT 77338) is appropriate and superior to fixed beam approach. (Sapkaroski, Osborne and Knight 2015)(Wu, et al. 2009)

CPT 77334 or CPT 77300 - Brachytherapy

Complex Treatment Devices, Design & Construction (CPT 77334 or CPT 77300) is clinically appropriate when Brachytherapy is being utilized in the following clinical settings:

Cancer Type	Units Approved
Brain	Up to 1 maximum
Bone Metastasis	Up to 1 maximum
Cervical	Up to 1 maximum
Endometrial	Up to 1 maximum
Hepatobiliary	Up to 1 maximum
Keloid	Up to 1 maximum

Cancer Type	Units Approved
Lung	Up to 1 maximum
Pancreatic	Up to 1 maximum
Prostate	Up to 1 maximum
Rectal	Up to 1 maximum

Clinical Rationale/Guidance:

Applicable for treatment devices, design and construction as well as complex (irregular blocks, special shields, compensators, wedges, molds or casts). (CMS 2015)

2.3 Continuing Medical Physics Consultation (CPT 7736, CPT 77370, CPT 77470)

CPT 77336 - 2D3D, IMRT, Proton Therapy, Brachytherapy, or SBRT

Continuing medical radiation physics consultation (CPT 77336) is clinically appropriate when 2D3D, IMRT, Proton Therapy, Brachytherapy, or SBRT is being utilized in the following clinical settings:

Cancer Type	Units Approved
Brain	Up to 1 max billable unit per every 5 fractions
Bone Metastasis	Up to 1 max billable unit per every 5 fractions
Cervical	Up to 1 max billable unit per every 5 fractions
Endometrial	Up to 1 max billable unit per every 5 fractions
Hepatobiliary	Up to 1 max billable unit per every 5 fractions
Keloid	Up to 1 max billable unit per every 5 fractions
Lung	Up to 1 max billable unit per every 5 fractions
Pancreatic	Up to 1 max billable unit per every 5 fractions
Prostate	Up to 1 max billable unit per every 5 fractions
Rectal	Up to 1 max billable unit per every 5 fractions

Clinical Rationale/Guidance:

Code 77336 is appropriate to use for continuing medical radiation physics consultation, including assessment of treatment parameters, quality assurance of dose delivery, and review of patient treatment documentation in support of the radiation oncologist, reported per week of therapy (once every consecutive five treatments delivered). This frequency should match the weekly radiation treatments billed. It is specific to the review of the weekly radiation treatment plan. This consultation ensures that the treatment administered conforms the specifications of the prescribing physician. It includes a documented review of the patient's treatment chart and record to verify that the patient received the prescribed radiation dosage, appropriate positioning and beam orientation and radiation safety. (Cheng, et al. Revised 2019 (CSC/BOC))

CPT 77370 - 2D3D, IMRT, Proton Therapy, Brachytherapy, or SBRT

Continuing medical radiation physics consultation (CPT 77370) is clinically appropriate when 2D3D, IMRT, Proton Therapy, Brachytherapy, or SBRT is being utilized in the following clinical settings:

Cancer Type	Units Approved
Brain	Up to 1 max per course of treatment
Bone Metastasis	Up to 1 max per course of treatment
Cervical	Up to 1 max per course of treatment
Endometrial	Up to 1 max per course of treatment
Hepatobiliary	Up to 1 max per course of treatment
Keloid	Up to 1 max per course of treatment
Lung	Up to 1 max per course of treatment
Pancreatic	Up to 1 max per course of treatment
Prostate	Up to 1 max per course of treatment
Rectal	Up to 1 max per course of treatment

Clinical Rationale/Guidance:

Code 77370 is appropriate to use for special medical radiation physics consultation when a problem or special situation arises during radiation therapy. This code requires a detailed written report describing the problem to be given to the requesting physician. (Loo Jr., et al. Revised 2019 (CSC/BOC))

CPT 77470 - 2D3D, IMRT, Proton Therapy, Brachytherapy, or SBRT

Special treatment procedures code (CPT 77470) is clinically appropriate when 2D3D, IMRT, Proton Therapy, Brachytherapy, or SBRT is being utilized in the following clinical settings:

Cancer Type	Units Approved
Brain	Up to 1 max per course of treatment
Bone Metastasis	Up to 1 max per course of treatment
Cervical	Up to 1 max per course of treatment
Endometrial	Up to 1 max per course of treatment
Hepatobiliary	Up to 1 max per course of treatment
Keloid	Up to 1 max per course of treatment
Lung	Up to 1 max per course of treatment
Pancreatic	Up to 1 max per course of treatment
Prostate	Up to 1 max per course of treatment
Rectal	Up to 1 max per course of treatment

Clinical Rationale/Guidance:

Special treatment procedures (e.g., total body irradiation, hemibody radiation, per oral or endocavitary irradiation CPT code 77470 is used to cover the additional physician effort and work for the special procedure of hyper-fractionation, total body irradiation, per oral, endocavitary, or intraoperative cone use, or when other modalities are being managed in combination with external beam therapy, such as brachytherapy, stereotactic radiosurgery, and any other special time consuming treatment plan. This code is not intended to be used because a patient has another ongoing medical diagnosis like diabetes, COPD, or hypertension. CPT code 77470 (Special radiation treatment) covers the additional physician effort and work required for the special procedures of: hyperfractionation, total body irradiation, brachytherapy, hyperthermia, planned combination with chemotherapy; or, other combined modality therapy, stereotactic radiosurgery, intra-operative radiation therapy, and, hemibody irradiation, intracavitary cone use, radiation response modifiers, heavy particles (e.g. protons/neutrons), 3-D CRT, IMRT, any other special time consuming treatment plan. (CMS 2015)

2.4 Conformal Planning; Respiratory Motion Management (CPT 77293)

CPT 77293 - 2D3D, IMRT, Proton Therapy, Brachytherapy, or SBRT

Respiratory motion management simulation (CPT 77293) is clinically appropriate when 2D3D, IMRT, Proton Therapy, Brachytherapy, or SBRT is being utilized in the following clinical settings:

Cancer Type	Units Approved
Brain	Up to 1 max per course of treatment
Bone Metastasis	Up to 1 max per course of treatment
Cervical	Up to 1 max per course of treatment
Endometrial	Up to 1 max per course of treatment
Hepatobiliary	Up to 1 max per course of treatment
Keloid	Up to 1 max per course of treatment
Lung	Up to 1 max per course of treatment
Pancreatic	Up to 1 max per course of treatment
Prostate	Up to 1 max per course of treatment
Rectal	Up to 1 max per course of treatment

Insert text

Clinical Rationale/Guidance:

This code describes the physician work and resources involved in acquiring a respiratory correlated or '4-D' CT simulation study for conformal planning. This add-on code, +77293, must always be billed with either CPT code 77295 or 77301 on the same date of service, even though the work may take place over many days. (ASTRO 2014)

2.5 Stereotactic Radiation Treatment Management (CPT 77432 or CPT 77435)

CPT 77432 or 77435 - 2D3D, IMRT, Proton Therapy, Brachytherapy, or SBRT

Stereotactic radiation treatment management of lesions (CPT 77432 or 77435) is clinically appropriate when 2D3D, IMRT, Proton Therapy, Brachytherapy, or SBRT is being utilized in the following clinical settings:

Cancer Type	Units Approved
Brain	Up to 1 max per course of treatment
Bone Metastasis	Up to 1 max per course of treatment
Cervical	Up to 1 max per course of treatment
Endometrial	Up to 1 max per course of treatment
Hepatobiliary	Up to 1 max per course of treatment
Keloid	Up to 1 max per course of treatment
Lung	Up to 1 max per course of treatment
Pancreatic	Up to 1 max per course of treatment
Prostate	Up to 1 max per course of treatment
Rectal	Up to 1 max per course of treatment

Clinical Rationale/Guidance:

Stereotactic radiation treatment management of cerebral lesion(s) (complete course of treatment consisting of one session) (77432), generally reflects the work by the radiation oncologist and is specifically used for single fraction, complete course of therapy. Note, this is code if only for the professional component. 77432 and 77470 are not payable on the same date of service. Stereotactic body radiation therapy, treatment management, per treatment course, to 1 or more lesions, including image guidance, entire course not to exceed 5 fractions (77435) is a professional charge for treatment management, specifically performed by the radiation oncologist. This code can only re reported once for the entire episode of patient care. (CMS 2015) (CMS 2013)

3. Quarterly Claims Monitoring

HealthHelp provides quarterly claims monitoring for a targeted series of ancillary codes, highlighting anomalies and tracking trends for potential future areas of outreach and further management. Reports will include consistent measurement of procedure volume over time, including outlier ordering provider behavior.

19294	19296	19297	19298	31643	32553	41019	49411	49412	55875
55876	55920	57155	57156	58346	61797	61799	61800	63621	76873
76965	77261	77262	77280	77285	77290	77295	77299	77301	77306
77307	77316	77317	77318	77321	77331	77332	77333	77338	77399

77417	77427	77431	77469	77499	77600	77605	77610	77615	77620
77790	77799	79005	79101	79403	A4648	A4650	A9517	A9527	A9563
A9564	C1715	C1716	C1717	C1718	C1719	C1728	C2616	C2634	C2635
C2636	C2637	C2638	C2639	C2640	C2641	C2642	C2643	C2698	C2699
C9725	C9726	C9728	G6001	G6002	G6017	Q3001	S2095	S8030	

Associated Procedure Codes

CODE	DESCRIPTION
19294	Preparation of tumor cavity with placement of a radiation therapy applicator for intraoperative radiation therapy (iort) concurrent with partial mastectomy (list separately in addition to code for primary procedure)
19296	Placement of radiotherapy after loading expandable catheter (single or multichannel) into the breast for interstitial radioelement application following partial mastectomy includes imaging guidance on date separate from partial mastectomy
19297	Placement of radiotherapy after loading expandable catheter (single or multichannel) into the breast for interstitial radioelement application following partial mastectomy includes imaging guidance concurrent with partial mastectomy (list separately in addition to code for primary procedure)
19298	Placement of radiotherapy after loading brachytherapy catheters (multiple tube and button type) into the breast for interstitial radioelement application following (at the time of or subsequent to) partial mastectomy includes imaging guidance
31643	Bronchoscopy rigid or flexible including fluoroscopic guidance when performed with placement of catheter(s) for intracavitary radioelement application
32553	Placement of interstitial device(s) for radiation therapy guidance (eg fiducial markers dosimeter) percutaneous intra-thoracic single or multiple
41019	Placement of needles catheters or other device(s) into the head andor neck region (percutaneous transoral or transnasal) for subsequent interstitial radioelement application
49411	Placement of interstitial device(s) for radiation therapy guidance (eg fiducial markers dosimeter) percutaneous intra-abdominal intra-pelvic (except prostate) andor retroperitoneum single or multiple
49412	Placement of interstitial device(s) for radiation therapy guidance (eg fiducial markers dosimeter) open intra-abdominal intrapelvic andor retroperitoneum including image guidance if performed single or multiple (list separately in addition to code for primary procedure)
55875	Transperineal placement of needles or catheters into prostate for interstitial radioelement application with or without cystoscopy
55876	Placement of interstitial device(s) for radiation therapy guidance (eg fiducial markers dosimeter) prostate (via needle any approach) single or multiple
55920	Placement of needles or catheters into pelvic organs and or genitalia (except prostate) for subsequent interstitial radioelement application
57155	Insertion of uterine tandem and or vaginal ovoids for clinical brachytherapy
57156	Insertion of a vaginal radiation after loading apparatus for clinical brachytherapy
58346	Insertion of heyman capsules for clinical brachytherapy
61797	Stereotactic radiosurgery (particle beam gamma ray or linear accelerator) each additional cranial lesion simple (list separately in addition to code for primary procedure)

CODE	DESCRIPTION
61799	Stereotactic radiosurgery (particle beam gamma ray or linear accelerator) each additional cranial lesion complex (list separately in addition to code for primary procedure)
61800	Application of stereotactic headframe for stereotactic radiosurgery (list separately in addition to code for primary procedure)
63621	Stereotactic radiosurgery (particle beam gamma ray or linear accelerator) each additional spinal lesion (list separately in addition to code for primary procedure)
76873	Ultrasound transrectal prostate volume study for brachytherapy treatment planning (separate procedure)
76965	Ultrasonic guidance for interstitial radioelement application
77014	Computed tomography guidance for placement of radiation therapy fields
77261	Therapeutic radiology treatment planning simple
77262	Therapeutic radiology treatment planning intermediate
77263	Therapeutic radiology treatment planning complex
77280	Therapeutic radiology simulation-aided field setting simple
77285	Therapeutic radiology simulation-aided field setting intermediate
77290	Therapeutic radiology simulation-aided field setting complex
77293	Respiratory motion management simulation (list separately in addition to code for primary procedure)
77295	3-dimensional radiotherapy plan including dose-volume histograms
77299	Unlisted procedure therapeutic radiology clinical treatment planning
77300	Basic radiation dosimetry calculation central axis 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 course of treatment only when prescribed by the treating physician
77301	Intensity modulated radiotherapy plan including dose-volume histograms for target and critical structure partial tolerance specifications
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)
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)
77321	Special teletherapy port plan particles hemibody total body
77331	Special dosimetry (eg tld microdosimetry) (specify) only when prescribed by the treating physician
77332	Treatment devices design and construction simple (simple block simple bolus)
77333	Treatment devices design and construction intermediate (multiple blocks stents bite blocks special bolus)
77334	Treatment devices design and construction complex (irregular blocks special shields compensators wedges molds or casts)

CODE	DESCRIPTION
77336	Continuing medical physics consultation including assessment of treatment parameters quality assurance of dose delivery and review of patient treatment documentation in support of the radiation oncologist reported per week of therapy
77338	Multi-leaf collimator (mlc) device(s) for intensity modulated radiation therapy (imrt) design and construction per imrt plan
77370	Special medical radiation physics consultation
77387	Guidance for localization of target volume for delivery of radiation treatment includes intrafraction tracking when performed
77399	Unlisted procedure medical radiation physics dosimetry and treatment devices and special services
77417	Therapeutic radiology port image(s)
77427	Radiation treatment management 5 treatments
77431	Radiation therapy management with complete course of therapy consisting of 1 or 2 fractions only
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
77469	Intraoperative radiation treatment management
77470	Special treatment procedure (eg total body irradiation hemibody radiation per oral or endocavitary irradiation)
77499	Unlisted procedure therapeutic radiology treatment management
77600	Hyperthermia externally generated superficial (ie heating to a depth of 4 cm or less)
77605	Hyperthermia externally generated deep (ie heating to depths greater than 4 cm)
77610	Hyperthermia generated by interstitial probe(s) 5 or fewer interstitial applicators
77615	Hyperthermia generated by interstitial probe(s) more than 5 interstitial applicators
77620	Hyperthermia generated by intracavitary probe(s)
77790	Supervision handling loading of radiation source
77799	Unlisted procedure clinical brachytherapy
79005	Radiopharmaceutical therapy by oral administration
79101	Radiopharmaceutical therapy by intravenous administration
79403	Radiopharmaceutical therapy radiolabeled monoclonal antibody by intravenous infusion
A4648	Tissue marker, implantable, any type, each
A4650	Implantable radiation dosimeter, each
A9517	Iodine i-131 sodium iodide capsule(s), therapeutic, per millicurie
A9527	Iodine i-125, sodium iodide solution, therapeutic, per millicurie
A9563	Sodium phosphate p-32, therapeutic, per millicurie
A9564	Chromic phosphate p-32 suspension, therapeutic, per millicurie
C1715	Brachytherapy needle
C1716	Brachytherapy source, non-stranded, gold-198, per source
C1717	Brachytherapy source, non-stranded, high dose rate iridium-192, per source

CODE	DESCRIPTION
C1718	Brachytherapy source, iodine 125, per source
C1719	Brachytherapy source, non-stranded, non-high dose rate iridium-192, per source
C1728	Catheter, brachytherapy seed administration
C2616	Brachytherapy source, non-stranded, yttrium-90, per source
C2634	Brachytherapy source, non-stranded, high activity, iodine-125, greater than 1.01 mci (nist), per source
C2635	Brachytherapy source, non-stranded, high activity, palladium-103, greater than 2.2 mci (nist), per source
C2636	Brachytherapy linear source, non-stranded, palladium-103, per 1 mm
C2637	Brachytherapy source, non-stranded, ytterbium-169, per source
C2637	Brachytherapy source, non-stranded, ytterbium-169, per source
C2638	Brachytherapy source, stranded, iodine-125, per source
C2639	Brachytherapy source, non-stranded, iodine-125, per source
C2640	Brachytherapy source, stranded, palladium-103, per source
C2641	Brachytherapy source, non-stranded, palladium-103, per source
C2642	Brachytherapy source, stranded, cesium-131, per source
C2643	Brachytherapy source, non-stranded, cesium-131, per source
C2644	Brachytherapy source, cesium-131 chloride solution, per millicurie
C2698	Brachytherapy source, stranded, not otherwise specified, per source
C2699	Brachytherapy source, non-stranded, not otherwise specified, per source
C9725	Placement of endorectal intracavitary applicator for high intensity brachytherapy
C9726	Placement and removal (if performed) of applicator into breast for intraoperative radiation therapy, add-on to primary breast procedure
C9728	Placement of interstitial device(s) for radiation therapy/surgery guidance (e.g., fiducial markers, dosimeter), for other than the following sites (any approach): abdomen, pelvis, prostate, retroperitoneum, thorax, single or multiple
G6001	Ultrasonic guidance for placement of radiation therapy fields
G6002	Stereoscopic x-ray guidance for localization of target volume for the delivery of radiation therapy
G6017	Intra-fraction localization and tracking of target or patient motion during delivery of radiation therapy (eg,3d positional tracking, gating, 3d surface tracking), each fraction of treatment
Q3001	Radioelements for brachytherapy, any type, each
S2095	Transcatheter occlusion or embolization for tumor destruction, percutaneous, any method, using yttrium-90 microspheres
S8030	Scleral application of tantalum ring(s) for localization of lesions for proton beam therapy

References

- ASTRO. 2015. "ASTRO Coding Guidance." May. Accessed October 2021. https://www.astro.org/uploadedFiles/Main_Site/Practice_Management/Radiation_Oncology_Coding/Coding_Guidance/Articles/IGRTCodingGuidance.pdf.

- ASTRO. 2014. "ASTRO Coding Guidance." Accessed October 2021. https://www.astro.org/Daily-Practice/Coding/Coding-Guidance/Coding-Guidance-Articles/Respiratory-Motion-Management-77293.
- ASTRO. 2017. "ASTRO Model Policies Proton Beam Therapy (PBT)." June. Accessed October 2021. https://www.astro.org/uploadedFiles/_MAIN_SITE/Daily_Practice/Reimbursement/Model_Policies/Content_Pieces/ASTROPBTModelPolicy.pdf.
- Cheng, C, J Luh, V Yu, T Zhao, B Parker , J Fontenot, and A Olch. Revised 2019 (CSC/BOC). "ACR–AAPM Technical Standard for Medical Physics Performance Monitoring of Image-Guided Radiation Therapy (IGRT)." Accessed October 2021. https://www.acr.org/-/media/ACR/Files/Practice-Parameters/IRGT-TS.pdf?la=en.
- CMS. 2013. "Billing and Coding Guidelines for Radiation Oncology Cranial Stereotactic Radiosurgery (SRS) and Cranial Stereotactic Radiotherapy" October. Accessed October 2021. https://downloads.cms.gov/medicare-coverage-database/lcd_attachments/30318_8/L30318_RAD018_CBG_100110.pdf
- CMS. 2015. "Billing and Coding Guidelines for Radiation Oncology Including Intensity Modulated Radiation Therapy (IMRT)." October. Accessed October 2021. https://downloads.cms.gov/medicare-coverage-database/lcd_attachments/34652_13/L34652_RAD014_BCG.pdf.
- Liu, H, X Chen, Z He, and J Li. 2016. "Evaluation of 3D-CRT, IMRT and VMAT radiotherapy plans for left breast cancer based on clinical dosimetric study." Computerized Medical Imaging and Graphics 54 (December): 1-5.
- Loo Jr., B W, G K Bajaj, J M Galvin, and et. al. Revised 2019 (CSC/BOC). ACR-ASTRO practice parameter for image-guided radiation therapy (IGRT). ACR-ASTRO. Accessed October 2021. https://www.acr.org/-/media/ACR/Files/Practice-Parameters/IGRT-RO.pdf?la=en.
- Merrow, C E, I Z Wang, and M B Podgorsak. 2013. "A doimetric evaluation of VMAT for the treatment of non-small cell lung cancer." Journal of Applied Clinical Medical Physics 14 (1): 228-38.
- Munch, S, S Aichmeier, A Hapfelmeier, and et. al. 2016. "Comparison of dosimetric parameters and toxicity in esophageal cancer patients undergoing 3D conformal radiotherapy or VMAT." Strahlentherapie und Onkologie 192: 722-9.

- Munch, S, S Aichmeier, A Hapfelmeier, and et. al. 2016. "Comparison of dosimetric parameters and toxicity in esophageal cancer patients undergoing 3D conformal radiotherapy or VMAT." Strahlentherapie und Onkologie 192: 722-9.

- Sapkaroski, D, C Osborne, and K Knight. 2015. "A review of stereotactic body radiotherapy - is volumetric modulated arc therapy the answer?" Journal of Medical Radiation Science 62 (2): 142-51.
- Wu, Q, S Yoo, K Kirkpatrick, D Thongphiew, and F Yin. 2009. "Volumetric arc intensity-modulated therapy for spine body radiotherapy: comparison with static intensity-modulated treatment." International Jouranl of Radiation Oncology Biology and Physics 75 (5): 1596-604.
- Zhao, J, W Hu, G Cai, J Wang, J Xie, J Peng, and Z Zhang. 2016. "Dosimetric comparisons of VMAT, IMRT and 3DCRT for locally advanced rectal cancer with simultaneous integrated boost." Oncotarget 7 (5): 6345-51.