

IMRT Policy

CVS Health considers intensity modulated radiation therapy (IMRT) medically necessary for the curative treatment of many tumor types. IMRT is a type of radiation that uses modulation of the radiation beams to shape around the target volumes and avoid the organs-at-risk.

In the curative treatment of some cancers, IMRT has been shown to be superior in sparing normal tissue compared to 3D or 2D radiotherapy. When considering the medical necessity of IMRT, CVS Health considers the cancer stage, the treatment intent, if the overall treatment plan incorporates surgery or chemotherapy, margin status, and performance status.

CVS Health considers IMRT medically necessary for the following indications when there is a concern about damage to surrounding critical structures with the use of 3D conformal radiation therapy, and after consideration of cancer stage, the treatment intent, if the overall treatment plan incorporates surgery or chemotherapy, margin status, and performance status:

- Adrenal gland cancer; or

CVS Health considers a maximum of 30 fractions with definitive intent and 20 fractions with palliative intent as medically necessary. CVS Health considers a maximum of 20 fractions for stage IV secondary malignancy neoplasm as medically necessary.

- Anal cancer; or

CVS Health considers a maximum of 33 fractions with definitive intent for stages 2 and 3 and 28 fractions for stage 1 as medically necessary. CVS Health recommends 3DCRT or 2D for members in Stage 4 with palliative intent.

- Anaplastic thyroid cancer; or

CVS Health considers a maximum of 33 fractions for stages 1-3 thyroid cancer as medically necessary.

- Bladder cancer; or

CVS Health considers a maximum of 28 fractions with definitive intent for members with stages 3 or 4 bladder cancer that have undergone resection surgery and 36 fractions for all stages if they have not undergone resection surgery as medically necessary. CVS Health considers a maximum of 20 fractions with palliative intent as medically necessary.

- Brain tumors in close proximity to critical structures; or

CVS Health considers a maximum of 33 fractions for members with benign and malignant primary brain tumors in proximity to critical structures as medically necessary.

- Breast cancer; or

CVS Health considers IMRT not medically necessary for the treatment of breast cancer with the exception of the following scenarios where IMRT is medically necessary:

- a. Whole Breast Hypofractionation regimen (up to 16 treatments and up to an additional 8 boost treatments)
 - i. left-sided breast cancer AND
 - ii. the following cardiac doses cannot be, using 3D, including after the use of complex positioning and breath hold technique: mean heart dose > 3.2 Gy AND can be less than that with IMRT
 - b. Whole Breast Standard fractionation regimen (up to 25 treatments and up to an additional 8 boost treatments)
 - i. Breast size >500 cc
 - ii. 3D CRT results in hotspots >110% AND can be avoided with IMRT
 - iii. 3D CRT, with positioning and breath hold optimization, yields a mean heart dose > 4 Gy AND can be less than that with IMRT
 - c. Partial breast irradiation
 - i. Up to 10 fractions delivered twice daily or 5 fractions delivered daily
 - d. Bilateral breast irradiation
- Cervical cancer; or

CVS Health considers a maximum of 25 fractions for members with stage 1 cervical cancer who have brachytherapy planned with definitive intent and a maximum of 35 fractions when no brachytherapy is planned as medically necessary. CVS Health considers a maximum of 30 fractions for members with stage 2 or 3 cervical cancer who have brachytherapy planned with definitive intent and a maximum of 35 fractions when no brachytherapy is planned as medically necessary. Stage 4 cervical cancer treated with definitive intent will require further oncologist review. CVS Health recommends 3DCRT or 2D for members with stage 4 disease with palliative intent.

- Cutaneous melanoma; or

CVS Health considers a maximum of 35 fractions for any cutaneous melanoma cancer stage with definitive intent as medically necessary and a maximum of 20 fractions with palliative intent as medically necessary.

- Endometrial cancer; or

CVS Health considers a maximum of 30 fractions for any endometrial cancer stage with definitive intent for members that have undergone surgery and a maximum of 35 fractions for members who have not undergone surgery as medically necessary. CVS Health recommends 3DCRT or 2D for members with palliative intent.

- Esophageal cancer; or

CVS Health considers a maximum of 35 fractions for members with cervical esophageal cancer with definitive intent and a maximum of 28 fractions for members with non-cervical esophageal with definitive intent as medically necessary. CVS Health considers a maximum of 10 fractions for members with treated with palliative intent as medically necessary.

- Gastric cancer; or

CVS Health considers a maximum of 30 fractions with definitive intent as medically necessary and a maximum of 10 fractions with palliative intent as medically necessary.

- Gallbladder cancer *or*

CVS Health considers a maximum of 30 fractions in the treatment of gallbladder cancer with definitive intent as medically necessary and a maximum of 10 fractions with palliative intent as medically necessary.

- Head and neck cancer excluding T1 and T2 glottic cancer; *or*

CVS Health considers a maximum of 35 fractions for members who have undergone surgery and getting chemotherapy with definitive intent as medically necessary. CVS Health considers a maximum of 68 fractions for members who have not had surgery or chemo with BID with definitive intent as medically necessary. CVS Health considers a maximum of 37 fractions for members who have not had surgery and are receiving chemotherapy as medically necessary. CVS Health considers a maximum of 20 fractions with palliative intent as medically necessary.

- Hepatobiliary cancer; or

CVS Health considers a maximum of 30 fractions with definitive intent as medically necessary. CVS Health considers a maximum of 10 fractions with palliative intent as medically necessary.

- Hodgkin's Lymphoma; or

CVS Health considers a maximum of 24 fractions with definitive intent and complete response as medically necessary. CVS Health considers a maximum of 30 fractions with partial response as medically necessary. CVS Health recommends 3DCRT or 2D for members treated with palliative intent.

- Malignant Pleural Mesothelioma; or

CVS Health considers a maximum of 30 fractions with definitive intent and complete resections after surgery as medically necessary. CVS Health considers a maximum of 33 fractions with definitive intent and with no complete resection after surgery as medically necessary. CVS Health considers a maximum of 10 fractions with palliative intent as medically necessary.

- Merkel cell carcinoma; or

CVS Health considers a maximum of 33 fractions with definitive intent as medically necessary. CVS Health considers a maximum of 20 fractions with palliative intent as medically necessary.

- Non-small cell lung cancer; or

CVS Health considers a maximum of 35 fractions for stages II and above with definitive intent as medically necessary. CVS Health recommends 3DCRT or 2D for members with palliative intent and stage 1 definitive intent.

- Non-melanoma skin cancer; or

CVS Health considers a maximum of 33 fractions with definitive intent as medically necessary. CVS Health considers a maximum of 20 fractions with palliative intent as medically necessary.

- Pancreatic cancer; or

CVS Health considers a maximum of 30 fractions with definitive intent as medically necessary. CVS Health considers a maximum of 20 fractions with palliative intent as medically necessary.

- Penile cancer; or

CVS Health considers a maximum of 35 fractions for stages I to II with definitive intent as medically necessary. CVS Health recommends 3DCRT or 2D for members treated with palliative intent.

- Prostate cancer; or

CVS Health considers a maximum of 45 fractions for stages I to III with hydrogel being treated with definitive intent as medically necessary. CVS Health considers

a maximum of 28 fractions for stage 4A with hydrogel being treated with definitive intent as medically necessary. CVS Health considers and with no hydrogel maximum of 45 fractions. In Palliative intent, 20 maximum fractions will be approved.

- Rectal cancer; or

CVS Health considers a maximum of 30 fractions with definitive intent as medically necessary. CVS Health recommends 3DCRT or 2D for members with palliative intent with the exception of T4 tumors requiring treatment of the external iliac or inguinal lymph nodes.

- Small-bowel cancer; or

CVS Health considers a maximum of 30 fractions for stages II and III as medically necessary. CVS Health recommends 3DCRT or 2D for members treated with palliative intent.

- Small-cell lung cancer; or

CVS Health considers a maximum of 35 fractions daily (or 30 fractions twice daily) in the definitive treatment as medically necessary.

- Soft tissue sarcoma; or

CVS Health considers a maximum of 30 fractions with definitive intent for members who have surgery and complete resection. CVS Health considers a maximum of 40 fractions when surgery is not a treatment modality as medically necessary. CVS Health considers a maximum of 20 fractions necessary when the intent is palliative.

- Solitary Plasmacytoma; or

CVS Health considers a maximum of 25 fractions necessary in the treatment of solitary plasmacytoma of the head and neck as medically necessary.

- Testicular cancer; or

CVS Health considers IMRT not necessary in the treatment of testicular cancer.

- Thymic cancer/thymoma; or

CVS Health considers a maximum of 27 fractions (35 fractions for R2 resection) post-surgically as medically necessary. In the inoperable setting, CVS Health considers a maximum of 35 fractions as medically necessary. CVS health considers a maximum of 15 fractions with palliative intent as medically necessary.

- Uveal melanoma; or

CVS Health considers a maximum of 5 fractions (30 fractions for R2 resection) in the treatment of uveal melanoma post-surgically medically necessary. CVS Health considers a maximum of 30 fractions in the inoperable setting as medically necessary. CVS Health considers a maximum of 10 fractions with palliative intent as medically necessary.

- Vulvar cancer

CVS Health considers a maximum of 30 (36 fractions for R2 resection) in the treatment of vulvar cancer post-surgically as medically necessary. In the inoperable setting, a maximum of 36 fractions is considered medically necessary.

The final medical necessity will be determined based on the terms of the member's benefit plan. Please check benefit plan descriptions.

References

1. American College of Radiology (ACR). ACR Practice Guideline for Intensity Modulated Radiation Therapy. 2021 (CSC/BOC) Practice Guideline. Reston, VA: ACR; effective January 1, 2021.
2. American Society for Therapeutic Radiation and Oncology (ASTRO). The ASTRO/ACR Guide to Radiation Oncology Coding 2023. Fairfax, VA: ASTRO; 2023.
3. Bayouth J, Chetty I, Correa C, et al. Continuous localization technologies for radiotherapy delivery. American Society for Radiation Oncology (ASTRO) Emerging Technology Committee Report. Fairfax, VA: ASTRO; January 7, 2010.
4. Chin RI, Rao YJ, Hwang MY, et al. Comparison of unilateral versus bilateral intensity-modulated radiotherapy for surgically treated squamous cell carcinoma of the palatine tonsil. *Cancer*. 2017;123(23):4594-4607.
5. Dayes I, Rumble RB, Bowen J, et al; IMRT Indications Expert Panel. The role of IMRT in breast cancer. Evidence-Based Series #23-3-2. Toronto, ON: Cancer Care Ontario; October 27, 2010.
6. De Sanctis V, Merlotti A, De Felice F, et al. Intensity modulated radiation therapy and oral mucosa sparing in head and neck cancer members: A systematic review on behalf of Italian Association of Radiation Oncology - Head and Neck Working Group. *Crit Rev Oncol Hematol*. 2019;139:24-30.
7. Du T, Xiao J, Qiu Z, Wu K. The effectiveness of intensity-modulated radiation therapy versus 2D-RT for the treatment of nasopharyngeal carcinoma: A systematic review and meta-analysis. *PLoS One*. 2019;14(7):e0219611.
8. Freese C, Takiar V, Fouladi M, et al. Radiation and subsequent reirradiation outcomes in the treatment of diffuse intrinsic pontine glioma and a systematic review of the reirradiation literature. *Pract Radiat Oncol*. 2017;7(2):86-92.
9. Gupta T, Kannan S, Ghosh-Laskar S, Agarwal JP. Systematic review and meta-analyses of intensity-modulated radiation therapy versus conventional two-

- dimensional and/or or three-dimensional radiotherapy in curative-intent management of head and neck squamous cell carcinoma. *PLoS One*. 2018;13(7):e0200137.
10. Haffty BG, Buchholz TA, McCormick B. Should intensity-modulated radiation therapy be the standard of care in the conservatively managed breast cancer patient? *J Clin Oncol*. 2008;26(13):2072-2074.
 11. Hu X, Fang Y, Hui X, et al. Radiotherapy for diffuse brainstem glioma in children and young adults. *Cochrane Database Syst Rev*. 2016;(6):CD010439.
 12. Kamal M, Mohamed ASR, Fuller CD, et al. Outcomes of members diagnosed with carcinoma metastatic to the neck from an unknown primary source and treated with intensity-modulated radiation therapy. *Cancer*. 2018;124(7):1415-1427.
 13. Lim K, Small W Jr, Portelance L, et al; Gyn IMRT Consortium. Consensus guidelines for delineation of clinical target volume for intensity-modulated pelvic radiotherapy for the definitive treatment of cervix cancer. *Int J Radiat Oncol Biol Phys*. 2011;79(2):348-355.
 14. Liu F, Jin T, Liu L, et al. The role of concurrent chemotherapy for stage II nasopharyngeal carcinoma in the intensity-modulated radiotherapy era: A systematic review and meta-analysis. *PLoS One*. 2018;13(3):e0194733.
 15. McCormick B, Hunt M. Intensity-modulated radiation therapy for breast: Is it for everyone? *Semin Radiat Oncol*. 2011;21(1):51-54.
 16. Medical Services Advisory Committee (MSAC). The use of intensity modulated radiation therapy (IMRT) in the treatment of cancer. MSAC Application 1182. Canberra, ACT: MSAC; 2015.
 17. National Comprehensive Cancer Network (NCCN). Breast cancer. Clinical Practice Guidelines in Oncology. Version 2.2023. Jenkintown, PA: NCCN; 2023.
 18. National Comprehensive Cancer Network (NCCN). Prostate cancer. Clinical Practice Guidelines in Oncology. Version 1.2023. Plymouth Meeting, PA: NCCN; 2023.
 19. Sun A, Rumble RB, Warde P; IMRT Indications Expert Panel. The role of IMRT in skin cancers. Evidence-Based Series #21-3-9. Toronto, ON: Cancer Care Ontario; October 29, 2010.
 20. Wong RKW, Rumble RB, Warde P; IMRT Indications Expert Panel. The role of IMRT in gastrointestinal cancers. Evidence-Based Series #21-3-10. Toronto, ON: Cancer Care Ontario; October 29, 2010.
 21. Yu T, Zhang Q, Zheng T, et al. The effectiveness of intensity modulated radiation therapy versus three-dimensional radiation therapy in prostate cancer: A meta-analysis of the literatures. *PLoS One*. 2016;11(5):e0154499.
 22. Zamora L, Leopardi D, Lee I, Humphreys K. Image-guided intensity-modulated radiotherapy. Horizon Scanning Technology Horizon Scanning Report. Stepney, SA: Australian Safety and Efficacy Register of New Interventional Procedures – Surgical (ASERNIP-S); November 2010.
 23. Zelefsky MJ, Fuks Z, Hunt M, et al. High dose radiation delivered by intensity modulated conformal radiotherapy improves the outcome of localized prostate cancer. *J Urol*. 2001;166(3):876-881.

24. Zhang B, Mo Z, Du W, et al. Intensity-modulated radiation therapy versus 2D-RT or 3D-CRT for the treatment of nasopharyngeal carcinoma: A systematic review and meta-analysis. *Oral Oncol.* 2015;51(11):1041-1046.
25. Zietman AL. Editorial comment. *J Urol.* 2001;166(3):881
26. RTOG 1005 protocol. A PHASE III TRIAL OF ACCELERATED WHOLE BREAST IRRADIATION WITH HYPOFRACTIONATION PLUS CONCURRENT BOOST VERSUS STANDARD WHOLE BREAST IRRADIATION PLUS SEQUENTIAL BOOST FOR EARLY-STAGE BREAST CANCER