



## Radiation Therapy Coding



### Common Radiation Coding Errors

#### Treatment Modality code

- Treatment summary refers to beam energy such as

**6X, 12 MV**

CTR codes treatment modality to **01: External beam, NOS - Incorrect!**

- The X or MV in the treatment summary tells us that photon therapy was delivered. Treatment modality code should be **02: External beam, photons<sup>1</sup>**

#### Planning Technique code

- Treatment summary refers to planning technique as

**IMRT/VMAT/SBRT. 1200 cGy x 3 fx**

CTR codes planning technique to **05: IMRT - Incorrect!**

- VMAT refers to rotational/arc therapy. When used w/conventional fractionation, code to **05: IMRT**
- When delivered via SBRT w/ hypofractionation, code to **06: Stereotactic radiotherapy or radiosurgery, NOS<sup>1</sup>**

#### “En Face” Technique

“en face” refers to electron therapy.

Treatment modality code is **04: external beam, electrons<sup>1</sup>**

Most electron boost are 3D conformal (04). Check with your facility for the policy on these.

#### FnF (Field-in-Field), e-comp

- Planning technique coded to 01: External beam, NOS – **Incorrect!**
  - If the treatment summary alludes to FnF or e-comp for the planning technique, code to **04: 3D Conformal<sup>1</sup>**



# Radiation Therapy Coding



## Total Dose Summary for Simultaneous Integrated Boost (SIB)

- Patient with base of tongue squamous cell carcinoma treated with EBRT/VMAT:

Treatment Site	Energy	Dose/FX (cGy)	Fractions	Total Dose (cGy)
PTVpl_70Gy Primary & LN	6X	200	35	7000
PTVp_66.5Gy Primary subclinical	6X	190	35	6650
PTVn_60Gy Right neck	6X	171	35	5895
PTVn_56Gy Left neck	6X	160	35	5600

#	Field	Code/Definition
1	Rad/Surg Seq	0 No radiation and/or surgery
2	Reason no RT	0 RT was administered
3	Location of RT	1 All RT at this facility
4	Date Started/Flag	10/23/20
5	Date Finished/Flag	12/17/20
6	Number of Phases	3
7	Discontinued Early	01 RT completed
8	Total Dose	025145

CTR codes total dose and number of phases as follows:

**# of phases incorrect<sup>1</sup>**

**Total Dose incorrect<sup>1</sup>**

### Correct Codes:

While we can only capture and code three phases, we must enter the total # of phases in item #6<sup>1</sup>

When Simultaneous Integrated Boost (SIB) is used, the total dose entered in item #8 is the highest PTV dose delivered<sup>1</sup>

**Do not add the dose for each PTV to get the total dose<sup>1</sup>**

#	Field	Code/Definition
1	Rad/Surg Seq	0 No radiation and/or surgery
2	Reason no RT	0 RT was administered
3	Location of RT	1 All RT at this facility
4	Date Started/Flag	10/23/20
5	Date Finished/Flag	12/17/20
6	Number of Phases	4
7	Discontinued Early	01 RT completed
8	Total Dose	007000



# Radiation Therapy Coding



## Irradiated volume: CNS Glioblastoma multiforme

- 65 year old male who presented to ER w/ right focal arm seizures, unsteady gait, loss of balance, short-term memory loss. Patient denies nausea, vomiting, headaches.
- Brain resection: glioblastoma, IDH Wild-type, WHO grade 2
- Prescribed concurrent temozolomide + EBRT/VMAT

Seg	#	Field	Code/Definition	Site	Energy	Dose/FX (cGy)	# FX	Total Dose (cGy)
Summary	1	Rad/Surg Sequence	3 Radiation after surgery	Brain 4600	6X	200	23	4600
	2	Reason No Rad	0 Radiation was administered					
	3	Location of Rad	1 All RT at this facility					
	4	Date RT Started/Flag	08/03/20					
	5	Date RT Ended/Flag	09/14/20					
	6	Number of Phases of RT	02					
	7	RT Discontinued Early	01 Radiation completed					
	8	Total Dose	006000					
Phase 1	9	Primary Treatment Volume	12 Whole brain <sup>1</sup>	Total			30	6000
	10	Rad to Draining LNs	00 No RT to draining lymph nodes					
	11	Treatment Modality	02 External beam, photons					
	12	Planning Technique	05 IMRT					
	13	Number of Fractions	023					
	14	Dose per Fraction	00200					
	15	Phase I Total Dose	004600					
Phase 2	16	Primary Treatment Volume	12 Whole brain <sup>1</sup>					
	17	Rad to Draining LNs	00 No RT to draining lymph nodes					
	18	Treatment Modality	02 External beam, photons					
	19	Planning Technique	05 IMRT					
	20	Number of Fractions	007					
	21	Dose per Fraction	00200					
	22	Phase II Total Dose	001400					
Phase 3	23	Primary Treatment Volume	00					
	24	Rad to Draining LNs						
	25	Treatment Modality						

CTR coded irradiated volume for both phases to 12: Whole brain

**Incorrect!**

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# Radiation Therapy Coding



## Irradiated volume: CNS Glioblastoma multiforme (cont.)

Interpreting treatment planning information

Planning modality = 02, photons<sup>1</sup>

Seg	#	Field	Code/Definition
Summary	1	Rad/Surg Sequence	3 Radiation after surgery
	2	Reason No Rad	0 Radiation was administered
	3	Location of Rad	1 All RT at this facility
	4	Date RT Started/Flag	08/03/20
	5	Date RT Ended/Flag	09/14/20
	6	Number of Phases of RT	02
	7	RT Discontinued Early	01 Radiation completed
	8	Total Dose	006000
Phase 1	9	Primary Treatment Volume	13 Brain (limited) <sup>1</sup>
	10	Rad to Draining LNs	00 No RT to draining lymph nodes
	11	Treatment Modality	02 External beam, photons
	12	Planning Technique	05 IMRT <sup>1</sup>
	13	Number of Fractions	023
	14	Dose per Fraction	00200
	15	Phase I Total Dose	004600
Phase 2	16	Primary Treatment Volume	13 Brain (limited) <sup>1</sup>
	17	Rad to Draining LNs	00 No RT to draining lymph nodes
	18	Treatment Modality	02 External beam, photons
	19	Planning Technique	05 IMRT <sup>1</sup>
	20	Number of Fractions	007
	21	Dose per Fraction	00200
	22	Phase II Total Dose	001400
Phase 3	23	Primary Treatment Volume	00
	24	Rad to Draining LNs	
	25	Treatment Modality	

Energy: 6X  
 Gantry: 340 CCW to 181  
 Collim.: 350 Couch: 0  
 SSD: 92.94 Avg. Depth: 5.84  
 SSD @ Iso: 92.52 Avg. Eff. Depth: 5.84  
 Eq. Sq.: 8.80 ALPO: 4.58

**CCW:** counterclockwise, indicative of rotational therapy (VMAT). Gives range of rotation/arc.  
**CW:** clockwise

**Information confirms IMRT planning technique (05)!**

Energy: 6X  
 Gantry: 181 CW to 340  
 Collim.: 10 Couch: 270  
 SSD: 93.41 Avg. Depth: 8.03  
 SSD @ Iso: 89.89 Avg. Eff. Depth: 8.03  
 Eq. Sq. : 9.40 ALPO: 5.12

### Correct Coding:

- #6: There are two separate volumes being irradiated, which makes each a separate phase.
- #9-16: In general, irradiated brain volume is limited when treating gliomas. Do not use code 12 (whole brain)<sup>1</sup>
- #12-19: VMAT was clearly specified. Planning information refers to rotational therapy.
- #16: Cone down (CD) boost focuses on small volume within the primary site<sup>1</sup>

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# Radiation Therapy Coding



## Electronic Brachytherapy

- Treatment summary: Following right breast lumpectomy, patient undergoes IORT via electronic brachytherapy with Zeiss Intrabeam, to a total dose of 2000 Gy.

CTR codes as follows:

- Treatment modality = 12-Brachytherapy, electronic
- Planning technique = 88-NA, treatment not by external beam
- Total dose = 999998

**Incorrect!**



### Zeiss INTRABEAM

Electronic Brachytherapy

Because of the manner in which the x-rays are generated in this system (very much like a linac), and taking into account the low photon energies produced...

**Should be coded as follows:**

Treatment modality: **02, external beam, photons<sup>1</sup>**

Planning Technique: **02, low energy x-ray/photon therapy<sup>1</sup>**

Total dose = **002000<sup>1</sup>**

1-7-21 NAACCR Webinar: Treatment 2021 [https://en.wikipedia.org/wiki/Targeted\\_intra-operative\\_radiotherapy](https://en.wikipedia.org/wiki/Targeted_intra-operative_radiotherapy)

## Thyroid Radioablative Therapy

- Nuclear medicine thyroid med uptake scan:

“After the oral administration of **4.2 mCi I-131** sodium iodide, anterior and posterior whole-body images were performed at 48 hours. Radioiodine uptake was measured and calculated at 48 hours”

**Therapeutic or diagnostic dose???** **This is a diagnostic thyroid scan!**

**Diagnostic** levels of I-131 typically < 5 mCi

**Therapeutic** levels of I-131 > 20 mCi



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## References:

1. 1-7-21 NAACCR Webinar: Treatment 2021  
2021 Radiation Therapy Coding: Challenges and Solutions by  
Wilson Apollo, MS, RTT, CTR
2. CTR Guide to Coding Radiation Therapy Treatment in the STORE  
v2.0 Feb 2021

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