

PDCS CNS Tumors

Melissa Riddle, ODS-C
Iowa Cancer Registry

1

1

2025 Implementation

- **Required by SEER 2025+**
 - Every facility in Iowa must report Pediatric staging and SSDI as applicable
- **Required by Iowa: Ages 0-39**
 - Software will determine which cases will go into a specific Pediatric Schema
- You will be assigning Ped Stage Items and SSDIs (when applicable) **in addition to**
 - AJCC (if applicable)
 - EOD
 - SSDIs/Grade

2

2

Where to Find Information:

- **SEER Website: RSA page – Pediatric Data (2024+)**
 - Schemas/Coding Structure
 - **2025:** <https://staging.seer.cancer.gov/pediatric/home/1.2/>
 - **2026:** <https://staging.seer.cancer.gov/pediatric/home/1.3/>
- **Pediatric Staging Manual (2024+)**
 - NAACCR Website: <https://www.naacccr.org/pediatric-resources/#1733928553790-ca5cfb7b-2f2e>
- **Questions – Ask a SEER Registrar**
 - <https://seer.cancer.gov/registrars/contact.html>



PEDIATRIC DATA COLLECTION SYSTEM (PDCS)
PEDIATRIC STAGING MANUAL
The Pediatric Staging Manual will be expanded over the course of several years and will be a comprehensive guide for coding of pediatric cancers.
<ul style="list-style-type: none"> • Pediatric Staging Manual v1.1 (PDF, 187 KB) • Appendix (PDF, 1.1 MB) • Appendix (PDF, 261 KB) • Appendix (PDF, 115 KB)
TORONTO STAGING GUIDELINES
PEDIATRIC TRAININGS
PEDIATRIC CODING QUESTIONS
REFERENCES

3

3

Pediatric CNS Tumors

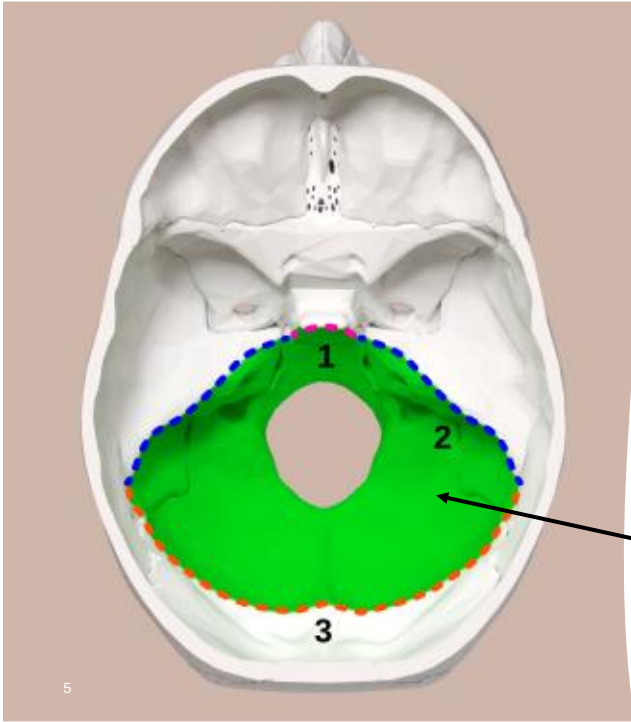
Ependymoma
Astrocytoma
Medulloblastoma

4

4

Pediatric CNS Tumors

- 2nd most common pediatric cancer
 - Most common pediatric solid tumor
- Leading cause of death in children ages: 0-14
- 60% of tumors are located in the posterior cranial fossa (C719)

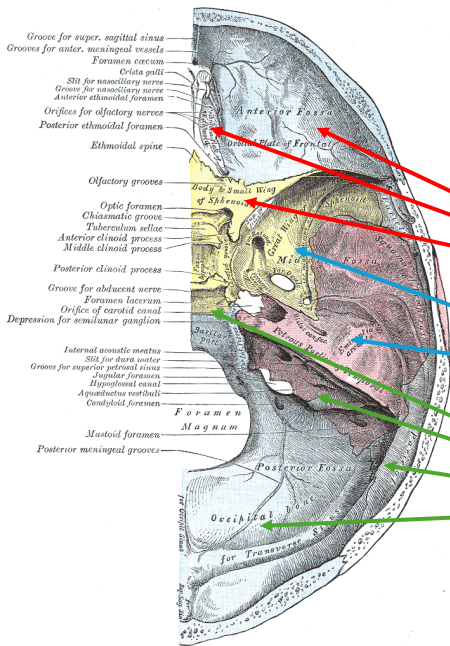


5

This Photo by Unknown Author is licensed under CC BY-SA

Pediatric Tumor: CNS

- Cranial Fossa:
 - **Anterior:**
 - Bones: Frontal, Ethmoid, Sphenoid
 - Contents: Frontal lobes, Olfactory nerves
 - **Middle:**
 - Bones: Sphenoid, Temporal
 - Contents: Temporal lobes, Pituitary Gland
 - **Posterior:**
 - Bones: Sphenoid, Temporal, Parietal, Occipital
 - Contents: Brainstem, Cerebellum

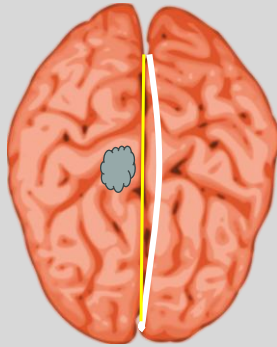


This Photo by Unknown Author is licensed under CC BY-SA

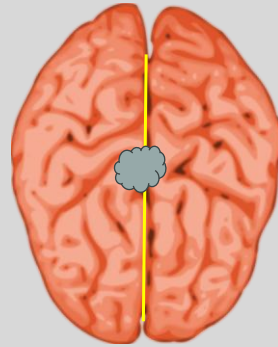
6

6

Midline Shift vs. Crossing Midline



Midline shift



Crossing Midline

Brain/CNS Other **EOD PT: 500**
Medulloblastoma **EOD PT: 250**

7

7

CNS Mets

- **Leptomeningeal carcinomatosis**
 - Cancer spreads to the membranes surrounding the brain and spinal cord (meninges)
 - Other names: meningeal carcinomatosis; carcinomatous meningitis
- **Drop metastasis**
 - Spread of cancer cells to the spinal cord via CSF
 - Tumor cells exfoliate into the CSF and migrate to the spinal canal
 - Associated with primary intracranial tumors such as glioblastoma, medulloblastoma, and anaplastic astrocytoma



This Photo by Unknown Author is licensed under CC BY-SA

8

8

Ependymoma

Primary Site: C710-C729

Histology: 9383, 9391-9394, 9396

Behavior: 0, 1, 3

Pediatric Stage:

- **Ped Primary Tumor:** 050-800; 999
- **Ped Regional Nodes:** 888 (NA)
- **Ped Mets:** 00-70; 99

SSDI: None

9

9

Ependymoma – Ped Primary Tumor

-
- Coded **ONLY** for single tumors confined to the primary site **OR**
 - Single tumor crossing the midline without extension to adjacent structures
 - Multiple tumors in the brain, code **Ped Primary Tumor 999**
 - Multiple tumors is recorded in Ped Mets
 - Benign (/0) and Borderline (/1) tumors **code 050**
 - Regardless of size or extension to adjacent sites
 - Midline shift is **NOT** the same as crossing the midline
 - Direct/Contiguous extension to adjacent site collected in Ped Mets
 - Only information is extension to adjacent site, code **Ped Primary Tumor 999**

10

10

Ependymoma – Ped Primary Tumor

11

Description	Notes	Code
Benign/Borderline tumors	Even if there is extension to adjacent sites	050
Localized	Single tumor confined to primary site without invasion or seeding to other structures	150
Single tumor cross midline	Single tumor crosses the midline WITHOUT invasion of adjacent structures	250
No evidence of primary tumor		800
Unknown	Extension not stated; Multiple tumors; Single tumor w/ extension into adjacent site; Not documented	999

11

Ependymoma – Ped Mets

12

- When it is stated “distant mets, NOS” and no specific mets stated – **code 70**
 - If specific mets are documented, code as appropriate
 - If specific mets are documented and not listed in the codes, assign **code 45**
- Benign and Borderline tumors – **code 00**
- Leptomeningeal mets aka carcinomatous meningitis and meningeal carcinomatosis
 - Spread of malignant cells through CSF space
 - Can originate from primary CNS tumors as well as distant tumors that have spread via hematogenous spread

12

Ependymoma – Ped Mets

Description	Notes	Code
No visible disease on imaging	No tumor cells in CSF; No involvement beyond primary site; Benign/Borderline tumors	00
Tumor cells in CSF	Circulating cells in CSF	15
Intracranial spread beyond a single lesion	All sites – see full list in manual <ul style="list-style-type: none"> Bone (skull) – other than bone see code 45 Brain tumors (C700, C71_) – see list CNS tumors (C701, C709, C72_) – see list Pineal Gland (C753) – see list	25
Visible mets in spine or cervicomedullary junction; Mets within CNS and CSF	Drop mets; leptomeningeal metastasis	35
Extra-neural mets	All sites – see full list in manual <ul style="list-style-type: none"> Bone (other than skull) Brain tumors (C700, C71_) – see list CNS tumors (C701, C709, C72_) – see list Other specific distant mets (codes 15-35 doesn't apply)	45
Distant Mets, NOS	"Distant metastasis, NOS" no documented specific metastasis; Codes 15-45 doesn't apply If specific mets are stated but not listed in codes 15-35, code 45	70
Unknown	Not documented in medical record	99

13

Astrocytoma

Primary Site: C700-C729

Histology: 9380, 9384, 9400-9411, 9420-9424, 9440-9442, 9445

- Gliomas
- Glioneuronal/Neural Tumors

Behavior: 0, 1, 3

Pediatric Stage:

- **Pediatric Primary Tumor:** 050-800; 999
- **Pediatric Regional Nodes:** 888 (NA)
- **Pediatric Mets:** 00-99

Ped SSDI:

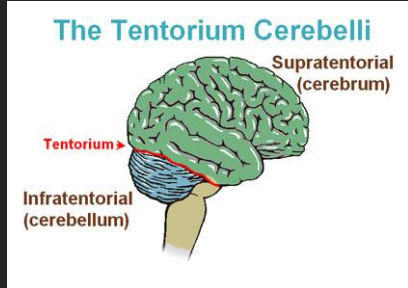
- BRAF Mutational Analysis

14

14

Astrocytoma Ped Primary Tumor

15



This Photo by Unknown Author is licensed under CC BY-SA

- Tentorium cerebelli separates the cerebellum from the inferior occipital lobes
 - The location of the tumor above or below the tentorium can help determine the type of tumor
 - Adult – supratentorial
 - Pediatric – infratentorial
- **Infratentorial Subsites:**
 - All subsites C716-C717
 - Hypothalamus C710
 - Pallium C710
 - Posterior cranial fossa (C719)
 - Thalamus (C710)
- **Supratentorial Subsites:**
 - All subsites C711-C715
 - Primary C710 excluding hypothalamus, pallium, and thalamus
 - Anterior cranial fossa C719
 - Middle cranial fossa C719
 - Corpus callosum C718
 - Tapetum C718
 - Suprasellar C719

15

Astrocytoma – Ped Primary Tumor

Primary Tumor	Extension to	Ped PT	SS
Benign or Borderline tumors	Adjacent structures or midline shift	050	8
Infratentorial Brain (C700, C71_)	Confined to primary OR extends to infratentorial sites only	100	1
Infratentorial Brain (C700, C71_)	Supratentorial site; Bone (skull); Corpus Callosum	500	2
Supratentorial Brain	Confined to primary site OR extends to supratentorial sites only	100	1
Supratentorial Brain	Infratentorial site; Bone (skull); Corpus Callosum	500	2
Brain (C700, C71_)	Circulating cells in CSF; Bone (other than skull – see code 500); Further contiguous extension	700	7

16

16

Astrocytoma – Ped Primary Tumor

Primary Tumor	Extension	Ped PT	SS
CNS Other (C701, C709, C72_)	Confined to primary site	200	1
CNS Other	Adjacent connective/soft tissue; Bone (skull); See complete list in manual	600	2
CNS Other	Bone other than skull (see code 600); See complete list in manual	750	7
No evidence of primary tumor	All CNS sites	800	9
Unknown extension	All CNS sites – Primary tumor can't be assessed; Not documented; DCO (central registry only)	999	9

17

17

Astrocytoma Ped Mets

18

- Code **00** when:
 - Benign/Borderline tumor
 - Physician states no metastatic disease
 - Relevant imaging available and no mention of mets
 - CT, MRI of brain, CNS, and spine; other imaging like PET or CT of other body organs
 - Patient treated for a localized or regional disease
- Code **99** when:
 - No documentation available
 - Biopsy only case
 - DCO (central registry only)

18

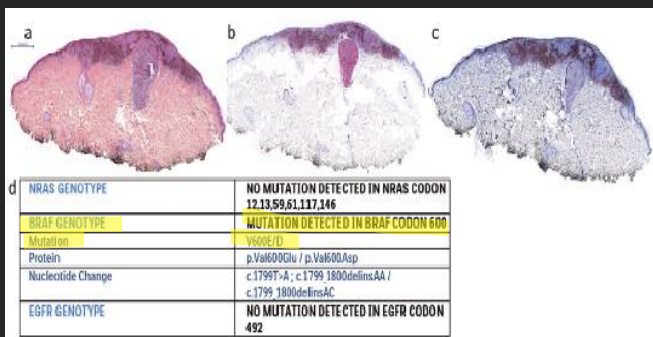
Astrocytoma – Ped Mets

19

Description	Notes	Code
No distant mets	Stated to have no mets; work up shows no mets; Benign/Borderline tumors	00
Distant LN involved		10
Distant metastasis	Mets within CNS and CSF pathways: <ul style="list-style-type: none"> • Drop mets • Leptomeningeal mets Mets outside the CNS; Extra-neural mets; Distant mets WITH or WITHOUT distant LN	70
Unknown	Distant mets not stated; No documentation in medical record; DCO (central registry only)	99

19

20



This Photo by Unknown Author is licensed under CC BY-NC

Astrocytoma Ped SSDI: BRAF

- BRAF – oncoprotein
 - Transmit cell growth and proliferation signals from KRAS and NRAS
 - Poor prognosis and lack of response to anti-EGFR therapy
- Common testing method:
 - Direct Sanger sequencing
 - High-resolution melting analysis
 - Pyrosequencing
 - PCR, allele-specific hybridization
 - Real-time PCR
- Physician statement on BRAF can be used to code when there is no other information available
- May be done for all stages, but primarily done for patients with metastatic disease
- Results from nodal or metastatic tissue may be used for BRAF

20

Astrocytoma – Ped SSDI: BRAF

21

Description	Notes	Code
Normal; Wild Type	Negative for BRAF mutation; No mutation	0
Abnormal/Mutation detected	BRAF V600E (c1799T>A) mutation	1
	NOT BRAF V600E (c.1799T>A) mutation	2
	KIAA1549-BRAF	3
	Abnormal, NOS; Mutated, NOS; BRAF NOS	4
Not documented	Unknown; Not assessed; Unknown if BRAF assessed	9

21

Medulloblastoma

Primary Site: C700-C729

Histology:

- Medulloblastoma: 9470-9472, 9474-9478, 9480
- Medulloepithelioma: 9501-9504
- Atypical teratoid/rhabdoid tumor: 9508
- Pineoblastoma: 9362 (includes site: C753 – pineal gland)

Behavior: 0, 1, 3

Pediatric Stage:

- **Ped Primary Tumor:** 050-800; 999
- **Ped Regional Nodes:** 888 (NA)
- **Ped Mets:** 00-70; 99

Ped SSDI: NONE

22

22



Medulloblastoma – Ped Primary Tumor

- Used to code **ONLY** single tumor confined to primary site **or** single tumor crossing midline
 - If there are multiple tumors in brain, **code 999**
 - Multiple tumors are coded in Ped Mets
- Benign (/0) and Borderline (/1)
 - **ALWAYS** code 050
- Direct or contiguous extension to an adjacent site is coded in Ped Mets
 - Code Ped PT - 999

23

23

Medulloblastoma – Ped Primary Tumor

Description	Notes	Code	SS
Benign/Borderline	Extension into adjacent sites	050	8
Single tumor confined to primary site	No invasion or seeding to other structures; Localized, NOS	150	1
Single tumor crosses midline	No invasion into adjacent structure	250	2
No evidence of primary		800	9
Unknown	No extension stated; Single tumor extend into adjacent structure; Multiple tumors; DCO (central registry only)	999	9

24

24

Medulloblastoma – Ped Mets

	Description	Notes	Code
	None	Benign/Borderline tumor; No evidence of metastatic disease on imaging; No tumor cells in CSF; Physician states no distant mets	00
25	Tumor cells in CSF	Circulating cells in CSF	15
	Intracranial Spread beyond single lesion	All sites: See full list in manual <ul style="list-style-type: none"> • Bone (skull) Brain (C700, C71_) see list in manual CNS tumors (C701, C709, C72_) see list in manual Pineal Gland (C753) see list in manual	25
	Mets in CNS/CSF	Visible mets in spine OR cervicomedullary junction; Mets in CNS and CSF pathways (drop mets, leptomeningal carcinomatosis)	35
	Extra-neural mets	See full list in manual; Bone other than skull (see code 25 for skull) Other specified distant mets (not in codes 15-35)	45
	Distant mets, NOS	No specific distant mets stated; no specific mets	70
	Unknown	Distant mets not stated or documented in medical record	99

25

Registrar Resources...

• PDCS Manual – Appendix I

- NAACCR website

<https://www.naacccr.org/pediatric-resources/#1733928553790-ca5cfb7b-2f2e>

26

• PDCS Coding for Stage and SSDI:

- SEER website
 - 2025: <https://staging.seer.cancer.gov/pediatric/home/1.2/>
 - 2026: <https://staging.seer.cancer.gov/pediatric/home/1.3/>

• Specific Training:

- NACCR Training website:

<https://education.naacccr.org/pediatric-data-collection-system-training>

26



Questions?

- Questions on PDSC Manual and/or coding instructions:
 - **Ask a SEER Registrar:**
 - <https://seer.cancer.gov/registrars/contact.html>
- ICR specific questions on PDSC staging/coding:
 - **Melissa Riddle, ODS-C**
 - Education/Training
 - melissa-riddle@uiowa.edu

28