NATIONAL CANCER INSTITUTE
Division of Cancer Control & Population Sciences

Cancer PathCHART

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Co-Chair, Cancer PathCHART

2023 SEER Workshop
December 5, 2023

Presentation Objectives

By the end of this presentation, attendees will know

- What Cancer PathCHART is & why it is needed to improve tumor site-morphology data
- The interdisciplinary review process & Cancer PathCHART products for cases diagnosed 2024 forward
- How standards will improve cancer surveillance data quality
- Where to find information & the 2024 Cancer PathCHART standards
- About the tumor site-morphology search tool
- How to report questions or raise issues with the Cancer PathCHART standards

Cancer PathCHART (CPC)

Cancer

Pathology

Coding

Histology

And

Registration

Terminology

SEER

Commission on Cancer®

NPCR
NATIONAL PROGRAM of CANCER REGISTRIES

NAACCR

National Cancer Registrars Association

Statistics Canada Statistique Canada

COLLEGE of AMERICAN PATHOLOGISTS

AJCC
American Joint Committee on Cancer

100+years

ICCR International Collaboration on Cancer Reporting

IACR
International Association of Cancer Registries

International Agency for Research on Cancer
World Health Organization

CPC & Bridging the Gap

Cancer Surveillance Standards

Pathology Report Language

n.d. *Navajo Bridge across Grand Canyon on route 89*. US Route 89 Appreciation Society, accessed December 5, 2023 https://usroute89.com/wp-content/uploads/2017/01/Navajo_Bridge_1989-07-1080x675.jpg

Why Is CPC Necessary?

Accuracy of Terms & Codes

impacts

Research Funding

Prevention Planning

Public Health

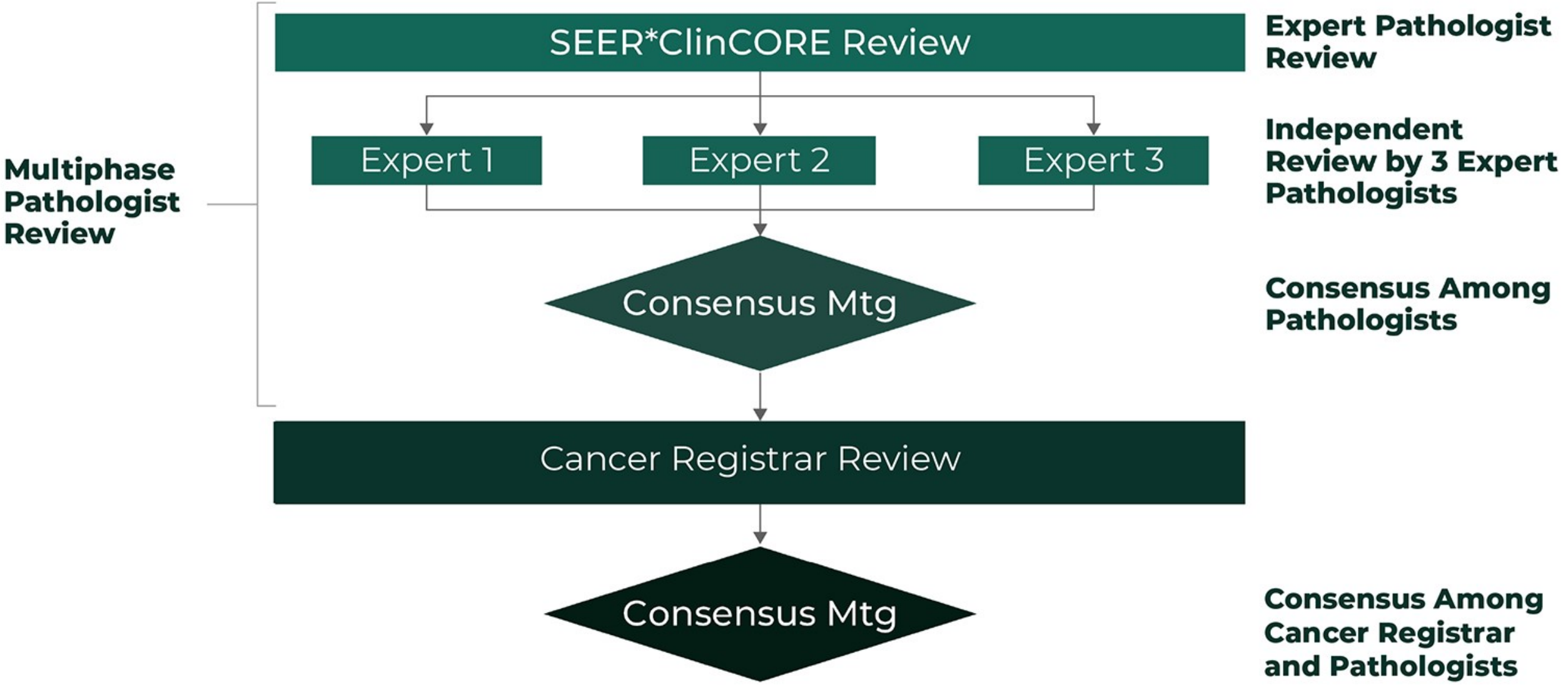
Vision & End Goals

- One source of truth for tumor site-morphology combination standards
- Reducing differences between stakeholders
- Decreased implementation timeline
- Improved data quality

What Will Cancer PathCHART Achieve?

- More streamlined & timely process for implementation of this information within your cancer registry software
- Aligned with
  - *Solid Tumor Rules*
  - Hematopoietic Database
  - Other coding resources

Interdisciplinary Review Process



Pathologist Reviewer Decisions

Biologically Valid

No further review needed

Example
Adenocarcinoma of the colon & rectum

Biologically Unlikely

Histology is unlikely in this site/organ system and may be an error

Example
Squamous cell carcinoma in situ of the rectum (more likely of the anal canal)

Biologically Impossible

Cancer registrars cannot record this combination in the cancer registry database

Example
Hepatocellular carcinoma of the prostate

Send for Consensus

Determination to be made via consensus among multiple pathologists and CTRs

Registrar Review Algorithm

Pre-CPC Status	CPC Pathologist Biological Decision/WHO	Change Type/No Change	CTR Review
Valid per Site/Type List	Valid	No change	No
Valid per Site/Type List	Unlikely	Removal from Site/Type List Create an Edit	Yes
Valid per Site/Type List	Impossible	Removal from Site/Type List Addition to Impossible List	Yes
Edit overridden	Valid	Removal of Edits Addition to Site/Type List	No
Edit overridden	Unlikely	No change	No
Edit overridden	Impossible	Removal from Edits Addition to Impossible List	Yes
Impossible List	Valid	Removal from Impossible List Addition to Site/Type List	No
Impossible List	Unlikely	Removal from Impossible List Create an Edit	No
Impossible List	Impossible	No change	No

Registrar Review Process

- Clarifications to expert pathologists about changes to validity of site-histology combinations
- Compare pathologists' recommendations for alignment with coding rules
- Incorporate answers to histology coding questions for issues submitted to
  - ✓SEER Inquiry System (SINQ)
  - ✓Ask A SEER Registrar

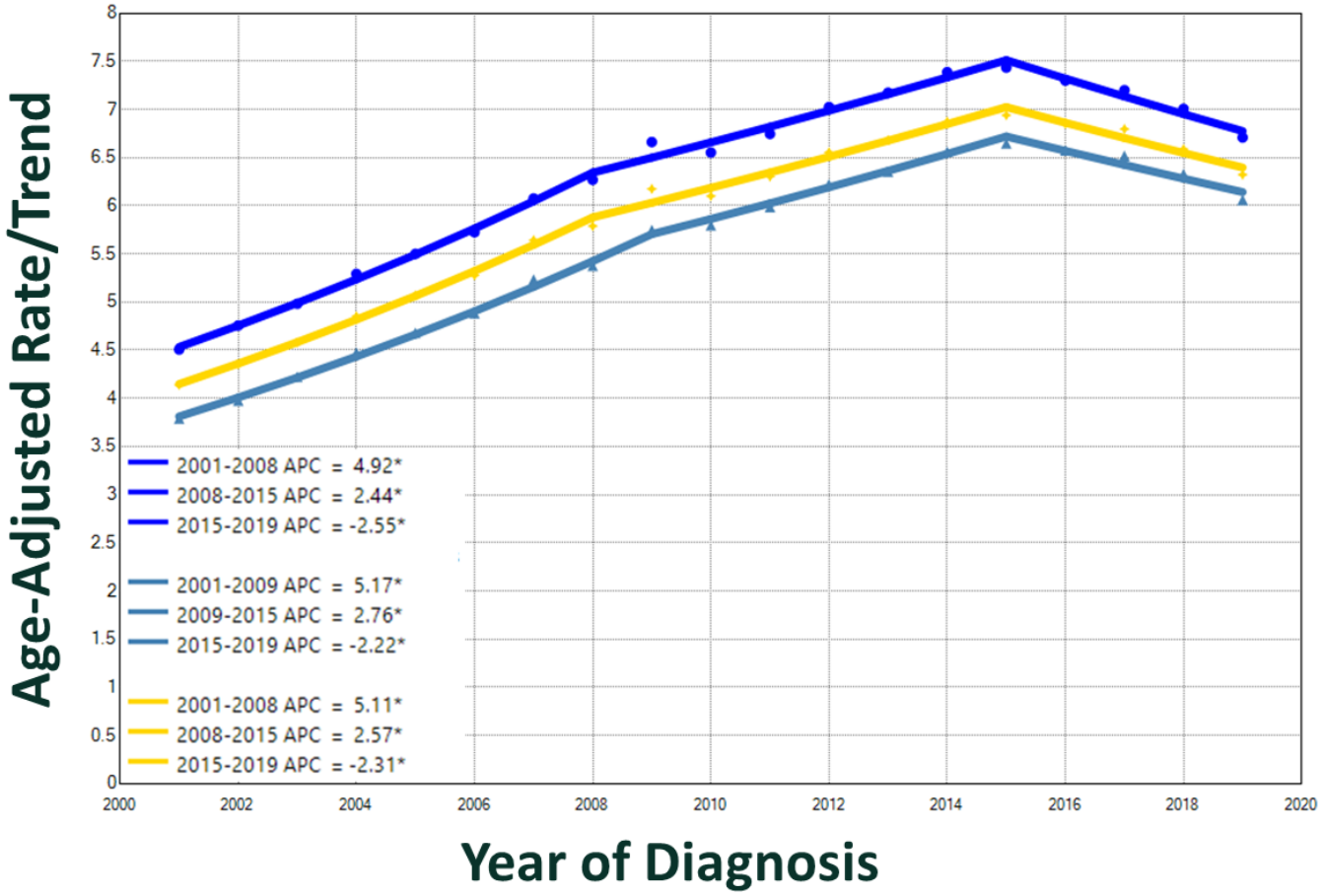
Examples - Liver

Before Review	# Hist	2015–2019 USCS Count	% of Cases	Expert Review Designation	# Hist	2015–2019 USCS Count	% of Cases
SEER Site/Type Validation List	92	139,120	99.9	Valid	29	133,159	95.6
				Unlikely	17	385	0.3
				Impossible	46	5,576	4.0
Manual Review/Override	423	148	0.1	Valid	3	7	<0.1
				Unlikely	69	107	0.1
				Impossible	351	34	<0.1
Impossible	3	0	0	Valid	0	0	0
				Unlikely	0	0	0
				Impossible	3	0	0
New WHO Code/Term	21	0	0	Valid	0	0	0
				Unlikely	4	0	0
				Impossible	17	0	0
Total	**539**	**139,268**	**100%**	**Total**	**539**	**139,268**	**100%**

Impacted Histologies - Liver

Code/Term	2015-2019 USCS Count	Reviewer Comment/Recommendation
8160/3 Cholangiocarcinoma	2,998	Code to C22.1 (IHBD)
8140/3 Adenocarcinoma, NOS	2,373	Code to C22.1 (IHBD)
9130/3 Hemangioendothelioma, malignant	24	Use 9133/3 (Epithelioid hemangioendothelioma, NOS)
8190/3 Trabecular adenocarcinoma	23	Consider 8170/3 (HCC, NOS)

Examples – Liver



Prior to
Cancer PathCHART

Valid & Unlikely

Valid & Unlikely
+ Impossible with a recommendation

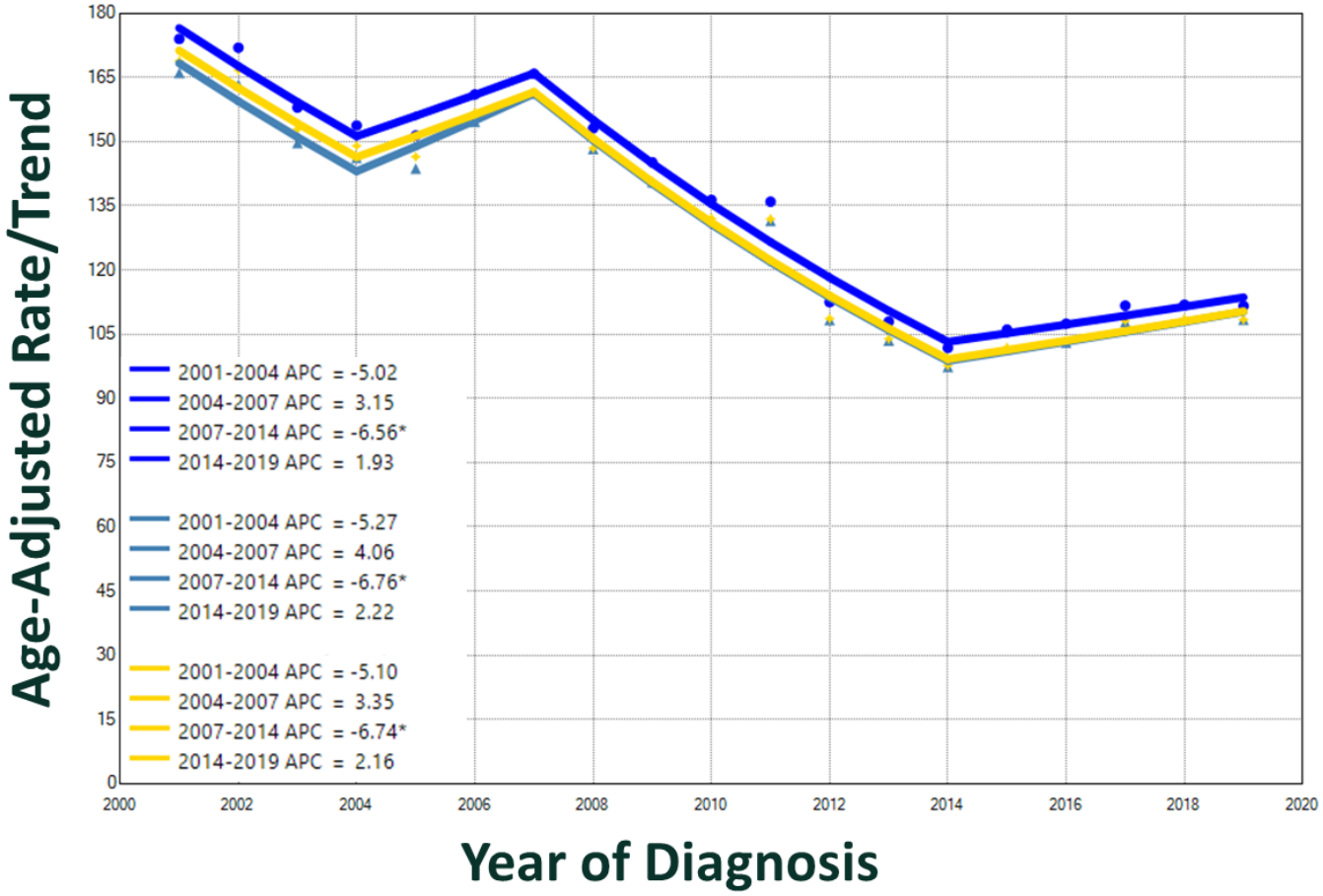
Examples - Prostate

Before Review	# Hist	2015–2019 USCS Count	%	Expert Review Designation	# Hist	2015–2019 USCS Count	%
SEER Site/Type Validation List	108	1,033,812	99.9	Valid	25	1,031,061	99.7
				Unlikely	21	231	<0.1
				Impossible	62	2,520	0.2
Manual Review/Override	409	730	0.1	Valid	9	504	<0.1
				Unlikely	67	149	<0.1
				Impossible	336	77	<0.1
Impossible	3	0	0	Valid	0	0	0
				Unlikely	0	0	0
				Impossible	3	0	0
New WHO Code/Term	15	0	0	Valid	0	0	0
				Unlikely	0	0	0
				Impossible	15	0	0
Total	**535**	**1,034,542**	**100%**	**Total**	**535**	**1,034,542**	**100%**

Impacted Histologies - Prostate

Code/Term	2015-2019 USCS Count	Reviewer Comment/Recommendation
8550/3 Acinar cell carcinoma	2,167	Use 8140/3 (Acinar adenocarcinoma of prostate)
8033/3 Pseudosarcomatous carcinoma	47	Use 8572/3 (Adenocarcinoma with spindle cell metaplasia)
8980/3 Carcinosarcoma, NOS	33	Use 8572/3 (Adenocarcinoma with spindle cell metaplasia)
8481/3 Mucin-producing adenocarcinoma	17	Use 8480/3 (Mucinous adenocarcinoma)

Examples – Prostate



Prior to
Cancer PathCHART

Valid & Unlikely

Valid & Unlikely
+ Impossible with a recommendation

Planned Initial 2024 Work Products

CPC ICD-O-3 Site-Morphology Validation List

- Valid combinations (can be recorded)
- Impossible combinations (cannot be recorded)
- Incorporated into NAACCR site-type edits

2024 CPC Standards Search Tool

- Valid & impossible combinations
- Unlikely combinations (trigger site-type edit)
- Codes & associated terminology

Planned Initial 2024 Work Products

2024 CPC SMVL standards apply only to cases diagnosed January 1, 2024 & forward

n.d. *Caution Tape*. Cliparts #2514003. accessed December 5, 2023, https://clipart-library.com/clipart/1467095.htm

Planned Initial Work Products

Continued

CPC SMVL Standardized Formats for End Users

- Freely available on SEER website
- Easily-consumable formats (Excel, CSV)
- Other formats requested by cancer registry software vendors (Ex: XML, JSON)
- Integrated into data quality edits, SEER API, CDC DLL, etc.

https://seer.cancer.gov/cancerpathchart/products.html

2024 CPC SMVL

Status Codes

1 = Valid

3 = Impossible

A	B	C	D	E	F
Key	FullKey	C_Site	Hist	Behavior	Status
80003	C00080003	C000	8000	3	1
80013	C00080013	C000	8001	3	1
80023	C00080023	C000	8002	3	1
80033	C00080033	C000	8003	3	1
80043	C00080043	C000	8004	3	1
80053	C00080053	C000	8005	3	1
80102	C00080102	C000	8010	2	1
80103	C00080103	C000	8010	3	1
80113	C00080113	C000	8011	3	1
80123	C00080123	C000	8012	3	1
80133	C00080133	C000	8013	3	1
80143	C00080143	C000	8014	3	1
80153	C00080153	C000	8015	3	1
80203	C00080203	C000	8020	3	1
80213	C00080213	C000	8021	3	1
80223	C00080223	C000	8022	3	1
80303	C00080303	C000	8030	3	1
80313	C00080313	C000	8031	3	1
80323	C00080323	C000	8032	3	1
80333	C00080333	C000	8033	3	1
80343	C00080343	C000	8034	3	1
80353	C00080353	C000	8035	3	1

Compact | FullData | Notes

Reviews Completed for 2024 Implementation

Digestive System Tumours

Ampulla of Vater
Anus
Appendix
Biliary System
Colon & Rectum
Esophagus
Gallbladder
Liver
Pancreas
Small Intestine
Stomach

Soft Tissue and Bone Tumours

Bones & Joints
Connective, Subcutaneous & Other Soft Tissue

Breast Tumours

Breast

Female Genital Tumours

Cervix
Endometrium
Fallopian Tube
Myometrium
Ovary
Vagina
Vulva, Adnexa & Other Female Genital
Placenta

Urinary and Male Genital Tumours*

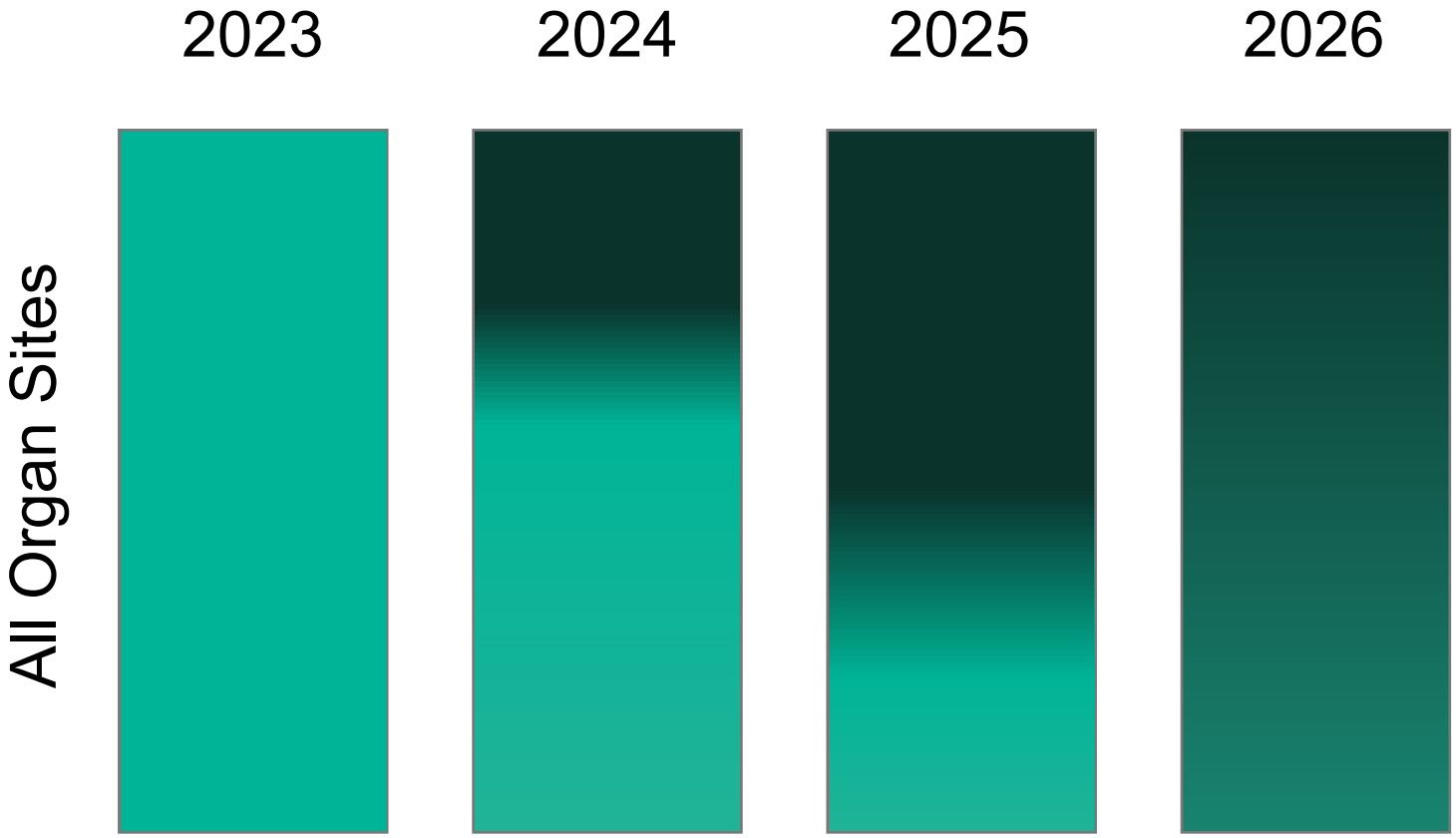
Penis
Prostate
Testis
Kidney

** Partially reviewed for implementation in 2024*

Implementation Timeline

Cancer PathCHART Updated Standards

Previous Standards



Planned Reviews for 2025

Thoracic Tumours

Lung & Bronchus
Pleura
Trachea & Upper Respiratory
Thymus
Mediastinum
Heart & Pericardium

Central Nervous System Tumours

Cerebral Hemispheres
Cerebellum
Brainstem
Ventricles
Meninges
Cranial Nerves
Spinal Cord

Urinary and Male Genital Tumours

Urothelial Sites
Paraurethral Gland
Epididymis, Paratesticular & Spermatic Cord

Pediatric Cancers across Sites

https://seer.cancer.gov/cancerpathchart/

Cancer PathCHART – Tumor Site–Morphology Surveillance Standards Initiative

Last Updated: September 6, 2023

What Is Cancer PathCHART?

Cancer Pathology Coding Histology And Registration Terminology (Cancer PathCHART) is a first-of-its-kind initiative in North America and around the world to update cancer surveillance standards for tumor site, histology, and behavior code combinations and associated terminology.

Why Is It Needed?

- The foundational data items of site, histology, and behavior are the basis for all subsequent data abstraction for a tumor (e.g., stage, treatment, outcomes).
- Accurate data are essential for the evaluation, management, research, and surveillance of cancer patients.

What Will Its Impact Be?

This vital online resource will help cancer registrars, clinicians, pathologists, researchers, and developers use the same terms and coding standards, making cancer surveillance more accurately reflect medical practice without altering cancer registration workflows, all to better support the critical data necessary for public health monitoring and cancer research.

Key Collaborators

- National Cancer Institute - Surveillance, Epidemiology, and End Results Program (NCI – SEER)
- National Cancer Registrars Association (NCRA)
- North American Association of Central Cancer Registries (NAACCR)
- Centers for Disease Control and Prevention National Program of Cancer Registries (CDC – NPCR)
- International Association of Cancer Registries (IACR)
- Statistics Canada | Statisique Canada
- World Health Organization - International Agency for Research on Cancer (WHO – IARC)
- College of American Pathologists (CAP)
- American Joint Committee on Cancer (AJCC)
- American College of Surgeons - Commission on Cancer (ACS – CoC)
- International Collaboration on Cancer Reporting (ICCR)

Informational Website Stats

7,868 page views

https://seer.cancer.gov/cancerpathchart/

85% of visits from within US

1,393 downloads of CPC SMVL across formats

411 downloads of release notes

Top Countries

	Visits	
Countries Page: 1 / 13 › Rows: 5 1-5 of 63	↓	**4,442**
1. United States	3,762	84.7%
2. Canada	286	6.4%
3. China	36	0.8%
4. Taiwan region	34	0.8%
5. Australia	22	0.5%

Getting the Word Out

Registrars

- ✓ Presentation to state registrar associations in US & Canada w/ CE credit
- ✓ Present for live, virtual Q&A
- ✓ ~30 scheduled to date
- Abstracts being submitted

Pathologists

- ✓ Presentation at CAP 2023 Future of Cancer Data Summit (October 2023)
- Articles in *CAP Today* & pathology journal
- CAP podcast

Resources for Registrars

- ✓Launch 2024 CPC ICD-O-3 Site Term Validation List (CPC*STVL) search tool
- Recorded demonstration on tips for using CPC SMVL search tool
- Information on how to report issues with the standards

Cancer PathCHART Site–Morphology Validation List Search Tool (CPC*SMVL)

To be renamed CPC*STVL Search Tool

i The tumor Site-Morphology Validation List (SMVL) combination standards in this tool are for cases diagnosed January 1, 2024 and forward.

What Is the CPC*SMVL Search Tool?

A web-based, interactive tool that that allows cancer registrars and other users to search the **2024 Cancer PathCHART ICD-O-3 Site-Morphology Validation List** for site, histology, and behavior terms and associated codes.

Search results include the expert pathologist-assigned CPC Validity Status of tumor morphology (histology and behavior) by site and organ system, which indicates if specific tumor site-morphology combinations are:

- Valid - will not generate any edit errors; can be recorded in the cancer registry database
- Impossible - will generate an edit error; cannot be recorded in the cancer registry database; must be corrected
- Unlikely - will require manual override or correction to be recorded in the cancer registry database (included in CPC*SMVL, but not in 2024 Cancer PathCHART ICD-O-3 Site-Morphology Validation List)

The CPC Validity Status was derived from an interdisciplinary review by subspecialty matter expert pathologists, registrars, and a biostatistician. Sites with updated standards for 2024 are listed in the table below.

Primary Sites Reviewed for 2024 Implementation +

Additional Resources

- Questions? Ask a SEER Registrar
- *Solid Tumor Rules* https://seer.cancer.gov/tools/solidtumor/
- Hematopoietic Database https://seer.cancer.gov/tools/heme/
- Join the Cancer PathCHART listserv to receive announcements of upcoming changes

Search CPC*SMVL

Suggested Citation

CPC*SMVL Search Tool

Find the site, histology, and behavior terms and associated codes you need in the Cancer PathCHART Tumor Site-Morphology Validation Standards

The CPC*SMVL search tool provides convenient and efficient tool for searching tumor site, histology, and behavior combination standards established by the Cancer PathCHART initiative. Users can search tumor site-morphology combinations by histology term or ICD-O-3.2 code, tumor site or ICD-O-3 topography code, behavior, and/or standard for cancer registration.

To learn more about the Cancer PathCHART initiative and standards, visit https://seer.cancer.gov/cancerpathchart/.

The Tumor Site-Morphology Validation List (SMVL) combination standards in this tool are for cases diagnosed January 1, 2024 and forward. The changes made do not require registrars to recode old cases.

Search —

ICD-O-3.2 Code List User Guide

Choose either Term or Code

Histology Term

ICD-O-3.2 Histology Code

AND

Choose either Term or Code

Primary Site

ICD-O-3 Topography Code

Behavior

- [x] Benign (/0)
- [x] Uncertain/Borderline (/1)
- [x] In Situ (/2)
- [x] Malignant (/3)
- [ ] Select All

CPC Validity Status

- [x] Valid
- [x] Unlikely
- [x] Impossible
- [ ] Select All

Search Database Clear Search

Enter histology term or code

Enter primary site term of code

Select behaviors of interest

Select validity status

The Tumor Site-Morphology Validation List (SMVL) combination standards in this tool are for cases diagnosed January 1, 2024 and forward. The changes made do not require registrars to recode old cases.

Search —

ICD-O-3.2 Code List | User Guide

Choose either Term or Code

Histology Term

neuroendocrine

ICD-O-3.2 Histology Code

AND

Choose either Term or Code

Primary Site

appendix

ICD-O-3 Topography Code

Behavior

- [ ] Benign (/0)
- [ ] Uncertain/Borderline (/1)
- [x] In Situ (/2)
- [x] Malignant (/3)
- [ ] Select All

CPC Validity Status

- [x] Valid
- [x] Unlikely
- [x] Impossible
- [ ] Select All

Search Database | Clear Search

Primary Site	ICD-O-3 Site Code	ICD-O-3.2 Morphology Code	ICD-O-3.2 Preferred Term	WHO Term(s)	CPC Validity Status
Appendix	C18.1	8013/3	Large cell neuroendocrine carcinoma		Valid
Appendix	C18.1	8150/3	Pancreatic neuroendocrine tumor, nonfunctioning		Impossible
Appendix	C18.1	8154/3	Mixed neuroendocrine non-neuroendocrine neoplasm (MiNEN)		Valid
Appendix	C18.1	8240/3	Neuroendocrine tumor, NOS		Valid
Appendix	C18.1	8246/2	Neuroendocrine carcinoma in situ		Unlikely
Appendix	C18.1	8246/3	Neuroendocrine carcinoma, NOS		Valid
Appendix	C18.1	8249/3	Neuroendocrine tumor, grade 2		Valid
Appendix	C18.1	8574/3	Adenocarcinoma with neuroendocrine differentiation		Valid

WHO term to be added for sites reviewed for 2024 implementation before tool goes live

The Tumor Site-Morphology Validation List (SMVL) combination standards in this tool are for cases diagnosed January 1, 2024 and forward. The changes made do not require registrars to recode old cases.

Search —

ICD-O-3.2 Code List | User Guide

Choose either Term or Code

Histology Term

neuroendocrine

AND

Choose either Term or Code

Primary Site

appendix

ICD-O-3.2 Histology Code

ICD-O-3 Topography Code

Behavior

- [ ] Benign (/0)
- [ ] Uncertain/Borderline (/1)
- [x] In Situ (/2)
- [x] Malignant (/3)
- [ ] Select All

CPC Validity Status

- [x] Valid
- [x] Unlikely
- [x] Impossible
- [ ] Select All

Search Database | Clear Search

Can sort results by code, term, & validity status

Primary Site	ICD-O-3 Site Code	ICD-O-3.2 Morphology Code	ICD-O-3.2 Preferred Term	WHO Term(s)	CPC Validity Status
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Appendix	C18.1	8249/3	Neuroendocrine tumor, grade 2		Valid
Appendix	C18.1	8574/3	Adenocarcinoma with neuroendocrine differentiation		Valid

WHO term to be added for sites reviewed for 2024 implementation before tool goes live

ICD-O-4 Review & Implementation

Cancer PathCHART Infrastructure to

- Review beta version of ICD-O-4 prior to release
- Identify errors in codes or terms
- Lead implementation of ICD-O-4 in cancer surveillance in North America
- Educate registrars

Accurate Data are Important!

- Registrar efforts to assure accurate and complete data
  - Provide useful data for research
  - Provide outcomes and survival assessments
  - Guide public health decisions

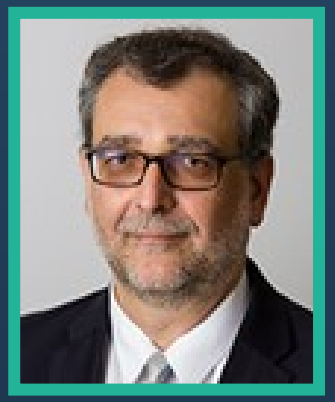
Thank you for all you do!

Acknowledgements

Core Management Team

Brian Rous
Co-Chair

Alison Van Dyke
Co-Chair



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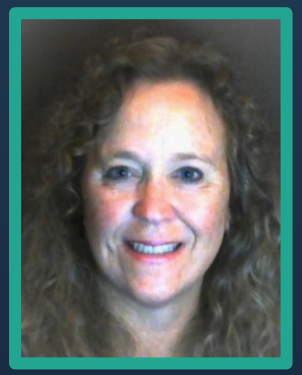

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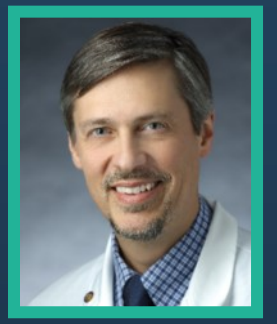

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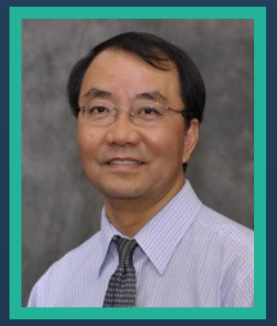

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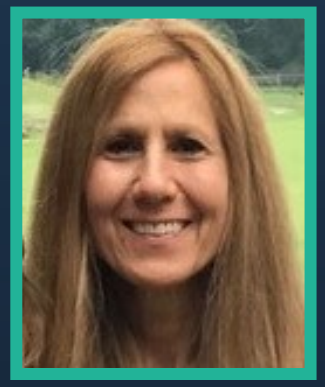

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- Lois Dickie
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- Jim Hofferkamp
- Mildred Jones
- Serena Kozie
- Annelie Landgren
- Janet Reynolds
- Alison Van Dyke
- Nadine Walker

For More Information

Visit the Cancer PathCHART website today!

https://seer.cancer.gov/cancerpathchart/

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