



**TECHNICAL NOTES**  
for the *Cancer Surgery Volume Report*

March  
2024

**Pennsylvania Health Care Cost Containment Council**

Report Period: State Fiscal Year 2023

July 1, 2022 – June 30, 2023 Data

225 Market Street, Suite 400, Harrisburg, PA 17101

Phone: (717) 232-6787

Fax: (717) 232-3821

[www.phc4.org](http://www.phc4.org)

*Barry D. Buckingham, Executive Director*

**TABLE OF CONTENTS**

**Methodology**..... 1

    Study period ..... 1

    Measure reported: Number of cancer surgeries..... 1

    Selection of cancers for this report ..... 1

    Data collection and verification ..... 1

    Study populations and inclusion criteria ..... 2

**Appendix: Definitions for cancer surgeries**..... A-1

## Technical Notes

### *Cancer Surgery Volume Report*

#### METHODOLOGY

This document serves as a supplement to the PHC4 *Cancer Surgery Volume Report*, which presents information about the number of cancer-related surgeries performed at Pennsylvania hospitals and ambulatory surgery centers. Included within this set of technical notes are descriptions of the criteria and definitions (codes) used for case selection and report display.

#### **Study period**

The report includes data from state fiscal year 2023: July 1, 2022 through June 30, 2023.

#### **Measure reported: Number of cancer surgeries**

The primary measure displayed in this report is the number of cancer-related surgeries performed on adult patients (age 18 years and older) at individual hospitals and ambulatory surgery centers in Pennsylvania. Statewide totals are also provided for all of the cancer surgery types.

Hospital volume is reported separately for eleven types of cancers including: bladder, brain, breast, colon, esophageal, liver, lung, pancreatic, prostate, rectal, and stomach cancer. The cancer surgery volume from hospitals includes inpatient discharges, and, for bladder, breast, and prostate cancer surgeries, the hospital volume also includes outpatient cases treated in outpatient departments of the hospital. Furthermore, the hospital's inpatient and outpatient cancer surgery counts are reported separately and combined for a hospital total.

Ambulatory surgery center outpatient surgical volume is reported for three types of cancers: bladder, breast, and prostate cancer.

#### **Selection of cancers for this report**

The eleven cancers included in this report were chosen because of strong evidence in the scientific literature<sup>1</sup> showing a relationship between patient outcomes and hospital volume for these cancer surgeries specifically.

#### **Data collection and verification**

The data for the *Cancer Surgery Volume Report*, obtained from the inpatient and outpatient UB-04 (Uniform Billing) forms, was submitted electronically to the Pennsylvania Health Care Cost Containment Council by Pennsylvania acute care hospitals and ambulatory surgery centers that performed the procedures of interest on adults (18 years and older). Federal hospitals were not included. The data included demographic information, hospital charges, and International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM) and Procedure Coding System (ICD-10-PCS) diagnosis and procedure codes. Current Procedural Technology, Fourth Edition (CPT-4) codes were used for outpatient<sup>2</sup> volume reporting.

Facilities submitted data to the Council on a quarterly basis (within 90 days from the last day of each quarter). Upon receipt of the data, verification was performed to assure data were submitted in a readable format, and extensive quality assurance checks were completed. Error reports for UB-04 data were then generated and returned to each facility with an opportunity to correct any problems. Data accuracy and completeness were ultimately the responsibility of each individual facility.

<sup>1</sup> Described in detail by the California HealthCare Foundation. 2015. "Safety in Numbers: Cancer Surgeries in California Hospitals." Available at <https://www.chcf.org/wp-content/uploads/2017/12/PDF-SafetyCancerSurgeriesHospitals.pdf>

<sup>2</sup> Within this document, the term outpatient refers to cases treated at hospital outpatient departments or ambulatory surgery centers.

**Study populations and inclusion criteria**

All records meeting the definition criteria listed in the Appendix were included in the volume counts. The study populations for each of the eleven cancer surgery categories included all unique adult (age 18 years and older) inpatient discharge records from all Pennsylvania General Acute Care (GAC) hospitals and specialty GAC hospitals operational during the study period. The study populations for bladder, breast, and prostate cancer surgeries also included unique outpatient records from all Pennsylvania GAC hospitals' and specialty GAC hospitals' outpatient departments and ambulatory surgery centers operational during the study period.

Individual patients who underwent more than one type of cancer surgery during their surgical visit were counted in each respective cancer category.

## APPENDIX

### Definitions for Cancer Surgeries

#### Requirements for including a record in the report:

- Record was from a general acute care (GAC) hospital, specialty GAC hospital, or ambulatory surgery center
- Time period: July 1, 2022 through June 30, 2023
- Patient age was 18 years or older
- **Coding requirements\*:**
  - **Inpatient record** had at least one ICD-10-CM diagnosis code and at least one ICD-10-PCS procedure code, in any code position, for a specific cancer surgery category. See links at the bottom of this page to access specific codes.
    - Additional criteria for inpatient records:**
      - Inpatient record was not in Major Diagnostic Category 14 – Pregnancy, Childbirth and the Puerperium
      - Inpatient record was not in Major Diagnostic Category 15 – Newborns and Other Neonates with Conditions
  - **Outpatient record** had at least one ICD-10-CM diagnosis code and at least one CPT-4 procedure code, in any code position, for a specific cancer surgery category. See links at the bottom of this page to access specific codes. Outpatient volume is only reported for bladder, breast, and prostate cancer surgeries.

#### **ICD-10-CM, ICD-10-PCS, and CPT-4 Code definitions by cancer surgery category:**

##### **Bladder Cancer:**

<https://www.phc4.org/wp-content/uploads/CSV2023-Definition-BladderCancerSurgery.xlsx>

##### **Brain Cancer:**

<https://www.phc4.org/wp-content/uploads/CSV2023-Definition-BrainCancerSurgery.xlsx>

##### **Breast Cancer:**

<https://www.phc4.org/wp-content/uploads/CSV2023-Definition-BreastCancerSurgery.xlsx>

##### **Colon Cancer:**

<https://www.phc4.org/wp-content/uploads/CSV2023-Definition-ColonCancerSurgery.xlsx>

##### **Esophagus Cancer:**

<https://www.phc4.org/wp-content/uploads/CSV2023-Definition-EsophagusCancerSurgery.xlsx>

##### **Liver Cancer:**

<https://www.phc4.org/wp-content/uploads/CSV2023-Definition-LiverCancerSurgery.xlsx>

##### **Lung Cancer:**

<https://www.phc4.org/wp-content/uploads/CSV2023-Definition-LungCancerSurgery.xlsx>

##### **Pancreas Cancer:**

<https://www.phc4.org/wp-content/uploads/CSV2023-Definition-PancreasCancerSurgery.xlsx>

##### **Prostate Cancer:**

<https://www.phc4.org/wp-content/uploads/CSV2023-Definition-ProstateCancerSurgery.xlsx>

##### **Rectum Cancer:**

<https://www.phc4.org/wp-content/uploads/CSV2023-Definition-RectumCancerSurgery.xlsx>

##### **Stomach Cancer:**

<https://www.phc4.org/wp-content/uploads/CSV2023-Definition-StomachCancerSurgery.xlsx>

\* Modified from criteria used by the California Department of Health Care Access and Information (formerly the Office of Statewide Health Planning and Development) and the California HealthCare Foundation; see <https://data.chhs.ca.gov/dataset/number-of-cancer-surgeries-volume-performed-in-california-hospitals>.