



TECHNICAL NOTES
for the Cancer Surgery Volume Report

April
2023

Pennsylvania Health Care Cost Containment Council

Report Period: State Fiscal Year 2022

July 1, 2021 – June 30, 2022 Data

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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. 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 2022: July 1, 2021 through June 30, 2022.

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 in Pennsylvania. Hospital surgical volume is reported separately for eleven types of cancers including bladder, brain, breast, colon, esophageal, liver, lung, pancreatic, prostate, rectal, and stomach cancer. Statewide totals are also provided.

Selection of cancers for this report

The eleven cancers included in this report were chosen because of strong evidence in the scientific literature* 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 UB-04 (Uniform Billing) form, was submitted electronically to the Pennsylvania Health Care Cost Containment Council by Pennsylvania general acute care (GAC) and specialty GAC hospitals. Federal hospitals were not included. The data included demographic information, hospital charges, and diagnosis and procedure codes (ICD-10-CM/PCS and CPT-4).

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 hospital.

Study populations and inclusion criteria

All records meeting the definition criteria listed in Appendix Table A 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 (and unique outpatient records for breast cancer surgeries) from all Pennsylvania GAC and specialty GAC hospitals operational during the study period (exceptions are noted in Appendix Tables A and B). Individual patients who underwent more than one type of cancer surgery during their hospitalization were counted in each respective cancer category.

* 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>

APPENDIX

TABLE A

Definitions for Cancer Surgeries

Requirements for including a record in the report:

- Record was from a GAC or SGAC hospital
- Time period: July 1, 2021 through June 30, 2022
- Patient age was 18 years or older
- Code requirements*
 - Record was not in Major Diagnostic Category 14 – Pregnancy, Childbirth and the Puerperium
 - Record was not in Major Diagnostic Category 15 – Newborns and Other Neonates with Conditions
 - Record had at least one ICD-10-CM diagnosis code and at least one ICD-10-PCS procedure code (or CPT-4 code for outpatient breast cancer surgeries), in any code position, for a specific cancer surgery category, as outlined below.

Code definition by cancer surgery category:

Bladder

Diagnosis: C670, C671, C672, C673, C674, C675, C676, C677, C678, C679, D090

Procedure: 0TBB0ZZ, 0TBB3ZZ, 0TBB4ZZ, 0TBB7ZZ, 0TBB8ZZ, 0TBC0ZZ, 0TBC3ZZ, 0TBC4ZZ, 0TBC7ZZ, 0TBC8ZZ, 0TTB0ZZ, 0TTB4ZZ, 0TTB7ZZ, 0TTB8ZZ, 0TTC0ZZ, 0TTC4ZZ, 0TTC7ZZ, 0TTC8ZZ

Brain

Diagnosis: C710, C711, C712, C713, C714, C715, C716, C717, C718, C719, C7931

Procedure: 00500ZZ, 00503ZZ, 00504ZZ, 00570ZZ, 00573ZZ, 00574ZZ, 005B0ZZ, 005B3ZZ, 005B4ZZ, 005C0ZZ, 005C3ZZ, 005C4ZZ, 005D0ZZ, 005D3ZZ, 005D4ZZ, 00B00ZZ, 00B03ZZ, 00B04ZZ, 00B60ZZ, 00B63ZZ, 00B64ZZ, 00B70ZZ, 00B73ZZ, 00B74ZZ, 00BB0ZZ, 00BB3ZZ, 00BB4ZZ, 00BC0ZZ, 00BC3ZZ, 00BC4ZZ, 00BD0ZZ, 00BD3ZZ, 00BD4ZZ, 00D00ZZ†, 00D03ZZ†, 00D04ZZ†, 00D70ZZ†, 00D73ZZ†, 00D74ZZ†, 00T70ZZ, 00T73ZZ, 00T74ZZ

Breast

Diagnosis: C50011, C50012, C50019, C50021, C50022, C50029, C50111, C50112, C50119, C50121, C50122, C50129, C50211, C50212, C50219, C50221, C50222, C50229, C50311, C50312, C50319, C50321, C50322, C50329, C50411, C50412, C50419, C50421, C50422, C50429, C50511, C50512, C50519, C50521, C50522, C50529, C50611, C50612, C50619, C50621, C50622, C50629, C50811, C50812, C50819, C50821, C50822, C50829, C50911, C50912, C50919, C50921, C50922, C50929, D0500, D0501, D0502, D0510, D0511, D0512, D0580, D0581, D0582, D0590, D0591, D0592

Procedure (inpatient, ICD-10-PCS): 0HBT0ZZ, 0HBT3ZZ, 0HBT7ZZ, 0HBT8ZZ, 0HBU0ZZ, 0HBU3ZZ, 0HBU7ZZ, 0HBU8ZZ, 0HBV0ZZ, 0HBV3ZZ, 0HBV7ZZ, 0HBV8ZZ, 0HTT0ZZ, 0HTU0ZZ, 0HTV0ZZ

Procedure (outpatient, CPT-4): 19125, 19301, 19302, 19303, 19305, 19306, 19307

Colon

Diagnosis: C180, C181, C182, C183, C184, C185, C186, C187, C188, C189, C49A4, C7A021, C7A022, C7A023, C7A024, C7A025, D010

Procedure: 0DBE0ZZ, 0DBE3ZZ, 0DBE4ZZ, 0DBE7ZZ, 0DBE8ZZ, 0DBF0ZZ, 0DBF3ZZ, 0DBF4ZZ, 0DBF7ZZ, 0DBF8ZZ, 0DBG0ZZ, 0DBG3ZZ, 0DBG4ZZ, 0DBG7ZZ, 0DBG8ZZ, 0DBH0ZZ, 0DBH3ZZ, 0DBH4ZZ, 0DBH7ZZ, 0DBH8ZZ, 0DBK0ZZ, 0DBK3ZZ, 0DBK4ZZ, 0DBK7ZZ, 0DBK8ZZ, 0DBL0ZZ, 0DBL3ZZ, 0DBL4ZZ, 0DBL7ZZ, 0DBL8ZZ, 0DBM0ZZ, 0DBM3ZZ, 0DBM4ZZ, 0DBM7ZZ, 0DBM8ZZ, 0DBN0ZZ, 0DBN3ZZ, 0DBN4ZZ, 0DBN7ZZ, 0DBN8ZZ, 0DTE0ZZ, 0DTE4ZZ, 0DTE7ZZ, 0DTE8ZZ, 0DTF0ZZ, 0DTF4ZZ, 0DTF7ZZ, 0DTF8ZZ, 0DTG0ZZ, 0DTG4ZZ, 0DTG7ZZ, 0DTG8ZZ, 0DTGFZZ, 0DTH0ZZ, 0DTH4ZZ, 0DTH7ZZ, 0DTH8ZZ, 0DTK0ZZ, 0DTK4ZZ, 0DTK7ZZ, 0DTK8ZZ, 0DTL0ZZ, 0DTL4ZZ, 0DTL7ZZ, 0DTL8ZZ, 0DTLFZZ, 0DTM0ZZ, 0DTM4ZZ, 0DTM7ZZ, 0DTM8ZZ, 0DTMFZZ, 0DTN0ZZ, 0DTN4ZZ, 0DTN7ZZ, 0DTN8ZZ, 0DTNFZZ

* Modified from criteria used by the California 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>.

† Brain Cancer surgery inpatient procedure ICD-10-PCS code is only valid starting October 1, 2021.

Esophagus**Diagnosis:** C153, C154, C155, C158, C159, C160, C49A1, D001**Procedure:** 0DB10ZZ, 0DB13ZZ, 0DB14ZZ, 0DB17ZZ, 0DB18ZZ, 0DB20ZZ, 0DB23ZZ, 0DB24ZZ, 0DB27ZZ, 0DB28ZZ, 0DB30ZZ, 0DB33ZZ, 0DB34ZZ, 0DB37ZZ, 0DB38ZZ, 0DB40ZZ, 0DB43ZZ, 0DB44ZZ, 0DB47ZZ, 0DB48ZZ, 0DB50ZZ, 0DB53ZZ, 0DB54ZZ, 0DB57ZZ, 0DB58ZZ, 0DT10ZZ, 0DT14ZZ, 0DT17ZZ, 0DT18ZZ, 0DT20ZZ, 0DT24ZZ, 0DT27ZZ, 0DT28ZZ, 0DT30ZZ, 0DT34ZZ, 0DT37ZZ, 0DT38ZZ, 0DT40ZZ, 0DT44ZZ, 0DT47ZZ, 0DT48ZZ, 0DT50ZZ, 0DT54ZZ, 0DT57ZZ, 0DT58ZZ**Liver****Diagnosis:** C220, C221, C222, C223, C224, C227, C228, C229, C240, C241, C248, C787, C7B02, D015**Procedure:** 0F800ZZ‡, 0F803ZZ‡, 0F804ZZ‡, 0F810ZZ‡, 0F813ZZ‡, 0F814ZZ‡, 0F820ZZ‡, 0F823ZZ‡, 0F824ZZ‡, 0FB00ZZ, 0FB03ZZ, 0FB04ZZ, 0FB10ZZ, 0FB13ZZ, 0FB14ZZ, 0FB20ZZ, 0FB23ZZ, 0FB24ZZ, 0FT00ZZ, 0FT10ZZ, 0FT14ZZ, 0FT20ZZ, 0FT24ZZ**Lung****Diagnosis:** C3410, C3411, C3412, C342, C3430, C3431, C3432, C3480, C3481, C3482, C3490, C3491, C3492, C7A090, D0220, D0221, D0222**Procedure:** 0B5C0ZZ, 0B5C3ZZ, 0B5C4ZZ, 0B5C7ZZ, 0B5C8ZZ, 0B5D0ZZ, 0B5D3ZZ, 0B5D4ZZ, 0B5D7ZZ, 0B5D8ZZ, 0B5F0ZZ, 0B5F3ZZ, 0B5F4ZZ, 0B5F7ZZ, 0B5F8ZZ, 0B5G0ZZ, 0B5G3ZZ, 0B5G4ZZ, 0B5G7ZZ, 0B5G8ZZ, 0B5H0ZZ, 0B5H3ZZ, 0B5H4ZZ, 0B5H7ZZ, 0B5H8ZZ, 0B5J0ZZ, 0B5J3ZZ, 0B5J4ZZ, 0B5J7ZZ, 0B5J8ZZ, 0B5K0ZZ, 0B5K3ZZ, 0B5K4ZZ, 0B5K7ZZ, 0B5K8ZZ, 0B5L0ZZ, 0B5L3ZZ, 0B5L4ZZ, 0B5L7ZZ, 0B5L8ZZ, 0B5M0ZZ, 0B5M3ZZ, 0B5M4ZZ, 0B5M7ZZ, 0B5M8ZZ, 0BB30ZZ, 0BB33ZZ, 0BB34ZZ, 0BB37ZZ, 0BB38ZZ, 0BB40ZZ, 0BB43ZZ, 0BB44ZZ, 0BB47ZZ, 0BB48ZZ, 0BB50ZZ, 0BB53ZZ, 0BB54ZZ, 0BB57ZZ, 0BB58ZZ, 0BB60ZZ, 0BB63ZZ, 0BB64ZZ, 0BB67ZZ, 0BB68ZZ, 0BB70ZZ, 0BB73ZZ, 0BB74ZZ, 0BB77ZZ, 0BB78ZZ, 0BB80ZZ, 0BB83ZZ, 0BB84ZZ, 0BB87ZZ, 0BB88ZZ, 0BB90ZZ, 0BB93ZZ, 0BB94ZZ, 0BB97ZZ, 0BB98ZZ, 0BBB0ZZ, 0BBB3ZZ, 0BBB4ZZ, 0BBB7ZZ, 0BBB8ZZ, 0BBC0ZZ, 0BBC3ZZ, 0BBC4ZZ, 0BBC7ZZ, 0BBC8ZZ, 0BBD0ZZ, 0BBD3ZZ, 0BBD4ZZ, 0BBD7ZZ, 0BBD8ZZ, 0BBF0ZZ, 0BBF3ZZ, 0BBF4ZZ, 0BBF7ZZ, 0BBF8ZZ, 0BBG0ZZ, 0BBG3ZZ, 0BBG4ZZ, 0BBG7ZZ, 0BBG8ZZ, 0BBH0ZZ, 0BBH3ZZ, 0BBH4ZZ, 0BBH7ZZ, 0BBH8ZZ, 0BBJ0ZZ, 0BBJ3ZZ, 0BBJ4ZZ, 0BBJ7ZZ, 0BBJ8ZZ, 0BBK0ZZ, 0BBK3ZZ, 0BBK4ZZ, 0BBK7ZZ, 0BBK8ZZ, 0BBL0ZZ, 0BBL3ZZ, 0BBL4ZZ, 0BBL7ZZ, 0BBL8ZZ, 0BBM0ZZ, 0BBM3ZZ, 0BBM4ZZ, 0BBM7ZZ, 0BBM8ZZ, 0BT30ZZ, 0BT34ZZ, 0BT40ZZ, 0BT44ZZ, 0BT50ZZ, 0BT54ZZ, 0BT60ZZ, 0BT64ZZ, 0BT70ZZ, 0BT74ZZ, 0BT80ZZ, 0BT84ZZ, 0BT90ZZ, 0BT94ZZ, 0BTB0ZZ, 0BTB4ZZ, 0BTC0ZZ, 0BTC4ZZ, 0BTD0ZZ, 0BTD4ZZ, 0BTF0ZZ, 0BTF4ZZ, 0BTG0ZZ, 0BTG4ZZ, 0BTH0ZZ, 0BTH4ZZ, 0BTJ0ZZ, 0BTJ4ZZ, 0BTK0ZZ, 0BTK4ZZ, 0BTL0ZZ, 0BTL4ZZ, 0BTM0ZZ, 0BTM4ZZ**Pancreas****Diagnosis:** C250, C251, C252, C253, C254, C257, C258, C259**Procedure:** 0FBG0ZZ, 0FBG3ZZ, 0FBG4ZZ, 0FBG8ZZ, 0FTG0ZZ, 0FTG4ZZ**Prostate****Diagnosis:** C61, D075**Procedure:** 0VB00ZZ, 0VB03ZZ, 0VB04ZZ, 0VB07ZZ, 0VB08ZZ, 0VT00ZZ, 0VT04ZZ, 0VT07ZZ, 0VT08ZZ**Rectum****Diagnosis:** C19, C20, C218, C49A5, C7A026, D011, D012**Procedure:** 0DBP0ZZ, 0DBP3ZZ, 0DBP4ZZ, 0DBP7ZZ, 0DBP8ZZ, 0DTP0ZZ, 0DTP4ZZ, 0DTP7ZZ, 0DTP8ZZ**Stomach****Diagnosis:** C161, C162, C163, C164, C165, C166, C168, C169, C49A2, C7A092, D002**Procedure:** 0DB60Z3, 0DB60ZZ, 0DB63Z3, 0DB63ZZ, 0DB64Z3, 0DB64ZZ, 0DB67Z3, 0DB67ZZ, 0DB68Z3, 0DB68ZZ, 0DB70ZZ, 0DB73ZZ, 0DB74ZZ, 0DB77ZZ, 0DB78ZZ, 0DT60ZZ, 0DT64ZZ, 0DT67ZZ, 0DT68ZZ, 0DT70ZZ, 0DT74ZZ, 0DT77ZZ, 0DT78ZZ

‡ Liver Cancer surgery inpatient procedure ICD-10-PCS code is only valid starting October 1, 2021.

TABLE B
Hospitals Not Reported

Facilities that closed

- Brandywine
- Jennersville

Facilities that closed acute care services

- Berwick

Facilities that merged

- LVH Coordinated Allentown merged with Lehigh Valley Hospital
- LVH Coordinated Bethlehem merged with Lehigh Valley Hospital
- Moses Taylor merged with Regional Scranton
- Penn Highlands Clearfield merged with Penn Highlands DuBois
- Tyler Memorial merged with Regional Scranton

Facilities that recently opened

- AHN Wexford
- Geisinger MC Muncy
- Lehigh Valley Dickson
- Penn State Hampden
- Penn State Lancaster
- St Luke's Carbon Campus

Children's hospitals

- Children's Hosp Phila
- Shriners Children Phila
- St. Christopher's Children
- UPMC Children's Hosp Pgh

Facilities with no volume

The following facilities had no (N=0) records in all eleven cancer surgery categories within the study period.

- Advanced Surgical
- AHN Hempfield
- Bradford Regional
- Bucktail
- Conemaugh Meyersdale
- Conemaugh Miners
- Edgewood Surgical
- Endless Mountains
- Fulton County
- Geisinger Jersey Shore
- LECOM Hlth Corry Memorial
- OSS Orthopaedic
- Penn Highlands
- Physicians Care
- Rothman Ortho Specialty
- Roxborough Memorial
- Troy Community
- UPMC Kane
- UPMC Lock Haven
- UPMC Muncy
- Washington HS Greene
- Wills Eye