



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

May  
2019

**Pennsylvania Health Care Cost Containment Council**

Report Period: State Fiscal Year 2018

July 1, 2017 – June 30, 2018 Data

225 Market Street, Suite 400, Harrisburg, PA 17101

Phone: (717) 232-6787

Fax: (717) 232-3821

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

*Joe Martin, Executive Director*

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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 2018: July 1, 2017 through June 30, 2018.

#### **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, usable adult (age 18 years and older) inpatient discharge records (and 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.

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\* 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, 2017 through June 30, 2018
- 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, 0BD4ZZ, 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, 0HBTXZZ, 0HBU0ZZ, 0HBU3ZZ, 0HBU7ZZ, 0HBU8ZZ, 0HBUXZZ, 0HBV0ZZ, 0HBV3ZZ, 0HBV7ZZ, 0HBV8ZZ, 0HBVXZZ, 0HTT0ZZ, 0HTU0ZZ, 0HTV0ZZ

**Procedure (outpatient, CPT-4):** 19125, 19301, 19302, 19303, 19304, 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>.

**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:** 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

**TABLE B**  
**Hospitals Not Reported**

There were a total of 171 GAC/SGAC hospitals in Pennsylvania during the study period. This report included usable records from all facilities except those listed below.

<b>Hospital Name</b>	<b>Reason Hospital Not Reported</b>
<b>Facilities that closed/merged</b>	
Lehigh Valley Muhlenberg	Merged with Lehigh Valley Allentown on May 1, 2018
Lehigh Vly Schuylkill EN	Merged with Lehigh Valley Schuylkill on May 26, 2018
<b>Children's hospitals</b>	
Children's Hosp Phila	Children's hospital
Children's Hosp Pgh UPMC	Children's hospital
Shriners Children Phila	Children's hospital
St. Christopher's Children	Children's hospital
<b>Facilities with no volume</b>	
The following facilities had no (n= 0) records in all eleven cancer surgery categories within the study period.	
Advanced Surgical	No volume
Bucktail	No volume
Conemaugh Meyersdale	No volume
Conemaugh Miners	No volume
Edgewood Surgical	No volume
Endless Mountains	No volume
Forest Health MC Bucks	No volume
Fulton County	No volume
Guthrie Towanda Memorial	No volume
LECOM Hlth Corry Memorial	No volume
Muncy Valley	No volume
OSS Orthopaedic	No volume
Physicians Care	No volume
Rothman Ortho Specialty	No volume
Springfield Crozer	No volume
Washington HS Greene	No volume
Wellspan Surgery & Rehab	No volume
Wills Eye	No volume