CHIA Data User Workgroup

Donald Kirkwood, Manager of Data Release and Procurement

Scott Curley, Chief Data Product Officer

Anne Medinus, Senior Research Account Specialist

Sylvia Hobbs, Associate Director of Artificial Intelligence and Data Innovations

October 28, 2025

Agenda

- **Announcements:**
  - Check Status and Availability of All CHIA Data Products
  - Location of Application Documents
  - Change in Process for Submitting Request for Data Documents
  - Commenting on CHIA Data Release Applications
  - Upcoming ANIA Abstract Deadline for 2026 Annual Conference, Boston Sheraton Hotel
  - Upcoming 2026 Joint Statistical Meeting over 50 countries participating, Menino Convention Center
  - Alert: New Publication on Medications for Opioid Use Disorder in County Jails — Outcomes after Release
- **Data User Support Questions**
  - Neonate/Infant Data
  - Importing the MA APCD
  - Out of State Data
  - Robotic Procedures
- **Q&A**

Announcements

Check Status and Availability of All CHIA Data Products

https://chiamass.gov/status-of-data-requests *(Updated 10/21/2025)*

The CHIA website (https://chiamass.gov/status-of-data-requests) provides detailed information regarding the availability of current data releases as well as the projected timelines. As of the present update, **the MA APCD for calendar year 2024 release (which includes 2020-2024 data with six-month run out from 2025) is currently in progress and targeted for release Fall 2025.**

Product	Target	Actual	Status
MA APCD CY 2024 (2020-2024 with a six month runout from 2025)	Fall 2025	-	In Progress
Release Status Notes • MA APCD CY 2024 is in progress.			
MA APCD CY 2023 (2019-2023 with a six month runout from 2024)	Fall 2024	Fall 2024	Available
Release Status Notes • MA APCD CY 2023 is available for application.			

All case mix data products (HIDD, EDD, and OOD) are now available for application.

Product	Target	Actual	Status
Case Mix FY 2024 (October 1, 2023 - September 30, 2024)			
Hospital Inpatient Discharge Data (HIDD)	June 2025	May 2025	Available
Emergency Department Data (EDD)	August 2025	July 2025	Available
Outpatient Observation Stay (OOD)	September 2025	August 2025	Available

Location of Application Documents

- Application Documents
- Fee Schedule
- Regulatory Information
- Data Release Committee
- Applications Received and Commenting
- Check the Status of Your Request

The following webpage links provide the step-by-step instructions for non-government entities and government entities on how to apply for the case mix and MA APCD data.

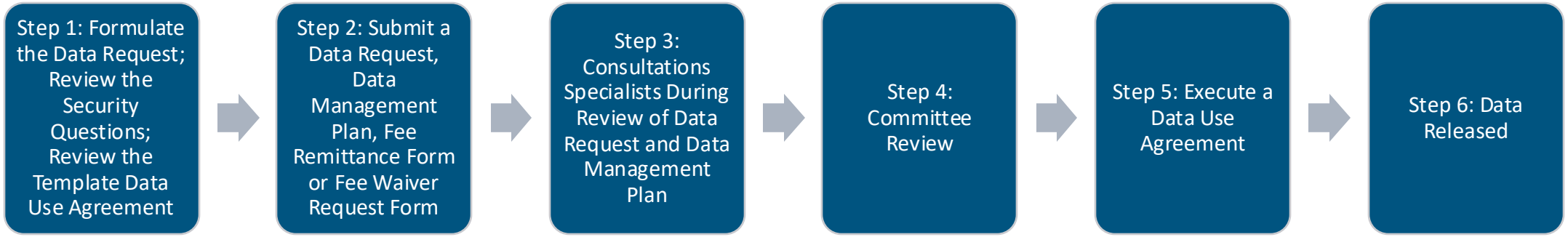
Non-Government Application Documents

https://www.chiamass.gov/non-government-agency-apcd-requests
https://www.chiamass.gov/non-government-agency-case-mix-requests

Government Application Documents

https://www.chiamass.gov/government-agency-apcd-requests
https://www.chiamass.gov/government-agency-case-mix-requests

The webpage provides detailed instructions on the six steps below in the application process that have been designed to help applicants prepare applications and to allow for the release of data while protecting patient privacy.



Change in Step 2 Process for Submitting Data Request Documents

Submitting Data Request

All application documents must be emailed to CHIA

Application documents are no longer submitted to or managed through IRBNet.org. All application materials must now be emailed directly to CHIA. Even if you have previous application documents submitted to IRBNet which you are updating, those updates should also be emailed directly to CHIA.

- ❑ **Massachusetts Case Mix Data** application documents must be emailed to casemix.data@chiamass.gov.
- ❑ **Massachusetts All Payer Claims Data** application documents must be emailed to apcd.data@chiamass.gov.

Call for Poster Abstract Submissions are Now Being Accepted for the 2026 American Nursing Information Association Annual Conference

Upcoming Health Informatics Conference

Submission deadline: Abstracts must be submitted via the Abstract Management System by 11:59 pm ET on November 10, 2025

See: https://www.ania.org/events/2026-ania-annual-conference

Conference Date and Location: March 26 – 28, 2026, Boston Sheraton Hotel

One of the many abstract theme tracks include **Quality Improvement and Patient Outcomes**

- Evaluate the impact clinical information systems have on patient care outcomes.
- Identify how clinical decision support systems can drive evidence-based practice.
- Discuss new and emerging trends in patient engagement in a technology-laden environment.

Posters from Annual Meetings for the Past Four are viewable online at: https://library.ania.org/store/1/index/34

Joint Statistical Meeting is the Largest Gathering of Statisticians and Data Scientists in the World

Attendees from over 50 countries

Upcoming International Statistics Conference

August 1-6, 2026, Thomas Michael Menino Convention and Exhibition Center, Boston

Abstract Submission to Open December 2, 2025

See: https://ww2.amstat.org/meetings/jsm/2026/index.cfm

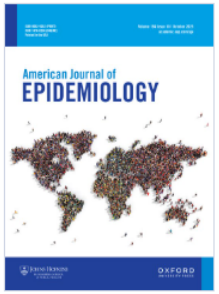
JSM Conference and Exposition has broad topics ranging from statistical applications to methodology and theory to the expanding boundaries of statistics, such as analytics and data science.

JOINT STATISTICAL MEETING INCLUDES:

- American Statistical Association
- Casualty Actuarial Society
- The Caucus for Women in Statistics and Data Science
- International Biometric Society (ENAR and WNAR)
- International Chinese Statistical Association
- International Indian Statistical Association
- Institute of Mathematical Statistics
- International Society for Bayesian Analysis
- International Statistical Institute
- Korean International Statistical Society
- Royal Statistical Society
- Statistical Society of Canada
- Statistical Society of Australia

Alert: New Publication Evaluating the Generalizability of Commercial Healthcare Claims Data

Dahlen, A., Deng, Y., & Charu, V. (2025). *Evaluating the generalizability of commercial healthcare claims data*. ***American Journal of Epidemiology***, *194*(10), 2999–3006. https://doi.org/10.1093/aje/kwaf142



Volume 194, Issue 10
October 2025

JOURNAL ARTICLE

Evaluating the generalizability of commercial healthcare claims data

Alex Dahlen, Yaowei Deng, Vivek Charu

American Journal of Epidemiology, Volume 194, Issue 10, October 2025, Pages 2999–3006, https://doi.org/10.1093/aje/kwaf142

Published: 30 June 2025 **Article history**

- The study used State Inpatient Databases from Massachusetts, California, Iowa, Maryland, and Michigan obtained from AHRQ, with Census American Community Survey, and Merative MarketScan Commercial Database claims data.
- The study found that commercial claims data underestimated inpatient discharge rates by about 28% when compared with data from state inpatient databases and Census data across Massachusetts, California, Iowa, Maryland, and Michigan.
- Procedures performed more often in high-deprivation neighborhoods were systematically underestimated, while those in affluent areas were overestimated.
- Implications are that studies using commercial claims should explicitly assess and disclose socioeconomic bias because estimates of disease prevalence, utilization, and policy impact may misrepresent true population patterns, especially for procedures concentrated in lower-income communities.

Analysis code for this study is available on GitHub:
https://github.com/alex-dahlen/ClaimsDataBenchmarking

Data User Support Questions

Question: I am analyzing newborns in medical claims and finding it difficult to untangle a newborn's distinct claim from the mother's delivery-level care. I am focused on the first month of life and need to determine what coding logic is commonly used for neonates from birth to the first 30 days of life. What are some specific codes that can be used for detecting neonates distinct from their mothers in medical claims?

Answer: To distinguish newborns from maternal delivery claims in administrative and medical claims data, there are ranges of specific revenue codes, ICD-10-CM diagnosis codes, CPT procedure codes and ICD-10-PCS codes researchers commonly rely on that only apply to newborns, excluding all maternal or the older pediatric population codes.

Examples of Neonate Revenue Codes

Revenue Code	Description
0170	Newborn nursery, general classification
0171	Newborn nursery, Level I
0172	Newborn nursery, Level II
0173	Newborn nursery, Level III
0174	Newborn nursery, Level IV
0179	Other nursery
0210	Neonatal intensive care, Level I
0211	Neonatal intensive care, Level II
0212	Neonatal intensive care, Level III
0213	Neonatal intensive care, Level IV
0219	Neonatal intensive care, other
0723	Circumcision (newborn only)

Examples of Neonate Diagnosis Codes

ICD-10-CM Code	Description
Z38.0–Z38.8	Liveborn infant according to place and type of delivery
Z00.110	Health examination for newborn under 8 days old
Z00.111	Health examination for newborn 8 to 28 days old
Z05.1–Z05.9	Observation and evaluation of newborn for suspected condition ruled out
P00.*–P04.*	Newborn affected by maternal factors and complications of pregnancy/labor
P05.*	Slow fetal growth and fetal malnutrition (newborn)
P07.0–P07.3	Disorders of short gestation and low birth weight
P20.*–P21.*	Intrauterine hypoxia and birth asphyxia
P22.*–P29.*	Respiratory and cardiac disorders of newborn
P36.*–P37.*	Bacterial sepsis and infections specific to perinatal period
P50.*–P61.*	Neonatal hemorrhage and hematologic disorders
P70.*–P74.*	Endocrine and metabolic disturbances of newborn
P91.*	Other disturbances of cerebral status of newborn
P96.1	Neonatal Abstinence Syndrome (withdrawal from maternal use of drugs of addiction)
P96.*	Other conditions originating in perinatal period

answer continued →

Answer *(continued)*: Some codes are primarily used for inpatient hospital billing and hospital discharge reporting and others for ambulatory care, pediatrician's office, and birthing-center encounters outside the inpatient hospital setting. Also, various organizations publish guidelines for neonatal coding. For example, Centers for Medicare & Medicaid Services, the American Academy of Pediatrics, and the American Academy of Family Physicians collectively can be sources of coding logic to distinguish newborn claims from maternal delivery care. For the first 30 days of life, inpatient claims typically rely on ICD-10-CM codes such as Z38.xx for liveborn infants and P00–P96 for perinatal conditions, while ICD-10-PCS codes capture procedures performed during the neonatal hospitalization. These are examples of coding frameworks that ensure neonatal encounters are uniquely identified and separated from maternal services.

Examples of CPT Codes

CPT Code	Description
99468	Initial inpatient neonatal critical care (≤ 28 days)
99469	Subsequent inpatient neonatal critical care
99477	Initial intensive observation or thermoregulation for ill neonate
99460	Initial hospital/birthing center care, normal newborn
99461	Initial care, normal newborn outside hospital/birthing center
99462	Subsequent hospital care, normal newborn
99464	Attendance at delivery (immediate newborn resuscitation)
99465	Delivery-room resuscitation of newborn
36406	Umbilical vein catheterization, newborn
36660	Arterial puncture, newborn
36455	Exchange transfusion, neonatal, partial or complete
54150	Circumcision using clamp or other device; newborn (≤28 days)
54160	Circumcision, surgical excision; newborn (≤28 days)

Examples of ICD-10-PCS Codes

ICD-10-PCS Code	Description
6A800ZZ	Monitoring of neonatal cardiac output
6A801ZZ	Monitoring of neonatal cerebral function
3E033XZ	Introduction of substance via umbilical vein

Example of Organizations with Neonatal Coding Guides

American Academy of Pediatrics
https://publications.aap.org/aapnews/article-abstract/36/5/26/24883/Become-familiar-with-ICD-10-CM-guidelines-for

American Academy of Family Physicians
https://www.aafp.org/family-physician/practice-and-career/getting-paid/coding/newborn-care-services.html

Centers for Medicare & Medicaid Services (CMS) ICD-10-CM Guidelines FY 2025 (Chapter 16)
https://www.cms.gov/files/document/fy-2025-icd-10-cm-coding-guidelines.pdf

Question: I recently imported the MA APCD asterisk-delimited text files into my database but realized afterward that I mistakenly set every data element to a 500-character VARCHAR field. I now understand this isn't correct, since some fields should be numeric, others have specific lengths, and date fields need to follow CHIA's standard format. How can I determine which data elements should be stored as numeric versus character, and what field lengths and formats should be used when importing specific data elements from the MA APCD text files into my database to match CHIA's intended data structure?

Importing Data

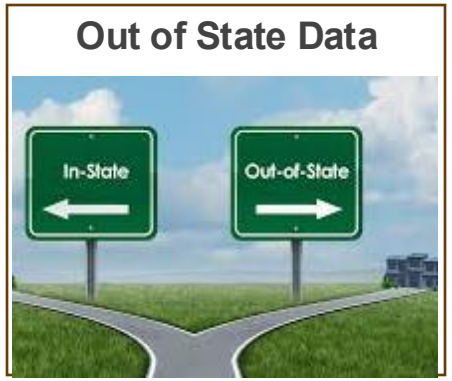
Answer: The hard drive accompanying the MA APCD data release contains comprehensive documentation listing the format, of every data element within each table. This documentation serves as the authoritative reference for reconstructing the dataset within a relational database environment, ensuring each field conforms to the data structure intended by CHIA. In addition, CHIA's publicly available online data submission specifications, used by payers to file data to the MA APCD, delineate the expected data types, permissible values, and format constraints for each element, thereby providing a secondary source of validation regarding how those elements should be defined at import.

Importing the data in accordance with these specifications improves efficiency of the database. Queries executed against data stored in its correct type and precision (for example, integers rather than character strings for numeric identifiers, or standardized date fields rather than free text) enable the query optimizer to use indexing, reduce memory overhead, and accelerate join and filter operations. In short, aligning the imported schema with the prescribed data element formats ensures both semantic fidelity to CHIA's design and optimal analytical performance.

Information on data format can be found in filing specifications at following link:

https://www.chiamass.gov/information-for-data-submitters

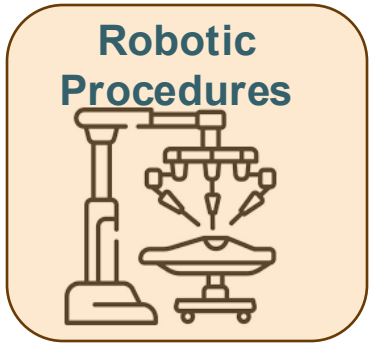
Question: I'm trying to understand the geographic scope of the MA APCD. Is the dataset limited only to medical care delivered within Massachusetts, or does it also include claims for Massachusetts residents who receive care out of state? For example, if a Massachusetts member is hospitalized in New Hampshire or undergoes a specialty procedure at a provider in Rhode Island, would those claims still appear in the MA APCD? Conversely, would the dataset capture claims for non-Massachusetts residents who receive care from a Massachusetts provider?



Answer: The MA APCD is not limited to care provided in Massachusetts. For example, if the parent is the subscriber and their son or daughter goes away to college in another state and the son or daughter seek outside of state healthcare as a member on their parent's insurance that claim would be in the MA APCD. If families divorce and the previously married couple agrees to continue with one covering the insurance and another partner moves out of state their out of state claim would be in the MA APCD.

However, since you had previously mentioned, you are also analyzing Medicaid data. Keep in mind that Medicaid is a public entitlement program at the individual level, not a commercial contractual policy which can be at the family level. Therefore, there is no subscriber–dependent relationship because Medicaid does not have group or family insurance products. Each eligible person, whether an adult or child, is a beneficiary in their own right. This also holds true for the MCOs. The MCO agrees to provide services to enrollees (Medicaid beneficiaries), not to a family unit under one subscriber.

Question: I am examining trends in the use of robotic-assisted surgical procedures within the Massachusetts healthcare system. I prefer to apply for the MA APCD over case mix data for longitudinal analysis comparing post-operative recovery for robotic-assisted procedures to conventional surgical techniques and professional claims. Could you clarify the extent to which ICD-10-PCS or HCPCS codes specific to robotic-assisted surgery are represented in MA APCD medical claims?



Answer: In the medical literature, one HCPCS 'S2900' code and twenty ICD-10-PCS codes are used to analyze robotic assisted surgery. In looking at CHIA's new MA APCD Release CY2024 for code S2900, the code use increased from 3,196 procedures in 2020 to 9,864 in 2024, representing a 208.6% rise over five years, **see Figure 1 below**. Likewise, there has been an increase in distinct providers using robotic assisted surgery. Over the five-year period from 2020 to 2024, the service providers have been predominantly associated ten health care organizations, **see Table 1 below**.

Figure 1. Volume of S2900 Procedure Codes by Date of Service Year

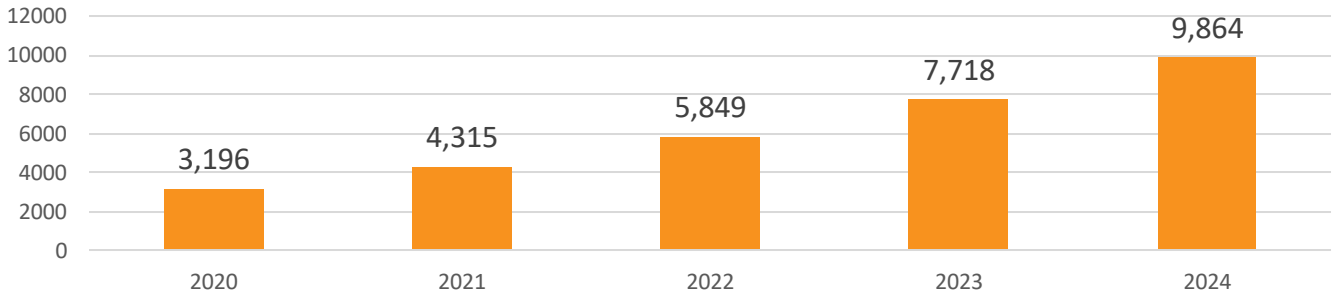
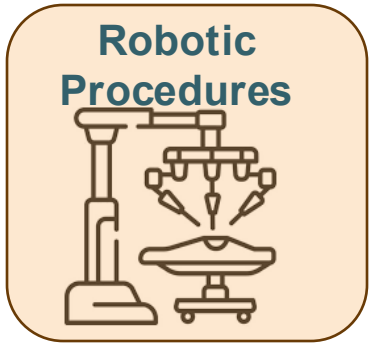


Table 1. Top Ten Facilities Using Robotic Assisted Surgery
Massachusetts General Physicians Organization, Inc.
Brigham & Women's Physicians Organization, Inc.
UMass Memorial Medical Group, Inc.
Hallmark Health Medical Associates, Inc.
Southcoast Hospitals Group, Inc.
Pratt Surgical Associates, Inc.
Baystate Medical Center, Inc.
Reliant Medical Group, Inc.
Tufts Medical Center, Inc.

answer continued

Answer *(Continued):* **Table 2** below lists the twenty ICD-10-PC robotic assisted procedures. It is important to note that some robotic procedures may not appear as distinct claim lines and are bundled rather than billed separately. This occurs because some carriers consider robotics a technique rather than a standalone billable service; as a result, robotic codes may be inconsistently reported or omitted due to payer-specific bundling rules. In the MAAPCD, between 2020 and 2024, the volume of ICD-10-PCS robotic-assisted codes increased from 729 to 1,682, reflecting a 130.7% overall rise and an annual growth rate of 23.2%. This growth was disproportionately concentrated in trunk surgeries, which expanded from 516 procedures in 2020 to 1,491 in 2024, accounting for nearly 89% of all robotic-assisted procedures in CY2024. See **Figure 2** below.



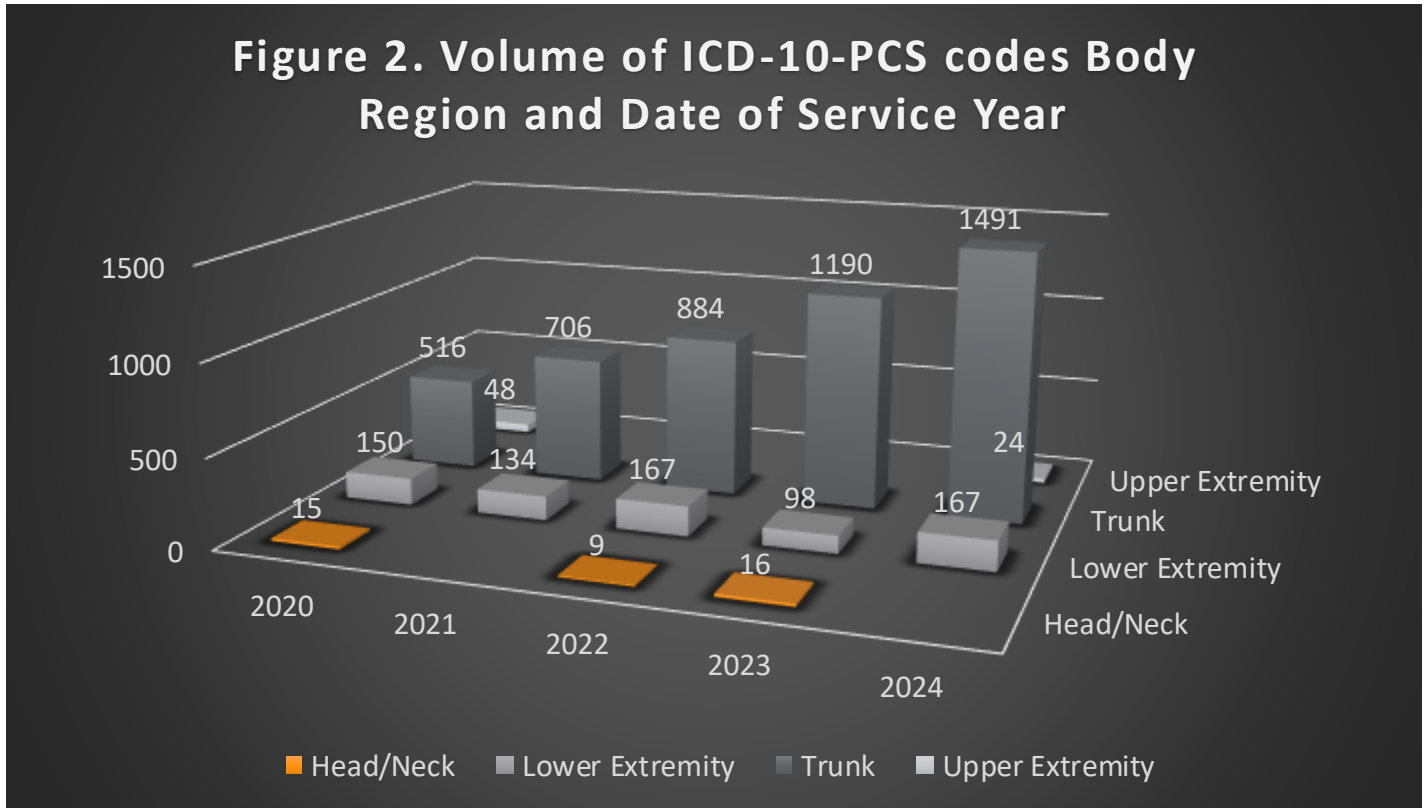


Table 2. ICD-10-PCS Robotic Assisted Procedures

Upper Extremity
- 8E0X0CZ – Open Approach
- 8E0X3CZ – Percutaneous Approach
- 8E0X4CZ – Percutaneous Endoscopic Approach
- 8E0XXCZ – External Approach

Lower Extremity
- 8E0Y0CZ – Open Approach
- 8E0Y3CZ – Percutaneous Approach
- 8E0Y4CZ – Percutaneous Endoscopic Approach
- 8E0YXCZ – External Approach

Trunk Region
- 8E0W0CZ – Open Approach
- 8E0W3CZ – Percutaneous Approach
- 8E0W4CZ – Percutaneous Endoscopic Approach
- 8E0W7CZ – Via Natural or Artificial Opening
- 8E0W8CZ – Via Natural or Artificial Opening Endoscopic
- 8E0WXCZ – External Approach

Head and Neck Region
- 8E09XCZ – External Approach
- 8E090CZ – Open Approach
- 8E093CZ – Percutaneous Approach
- 8E094CZ – Percutaneous Endoscopic Approach
- 8E097CZ – Via Natural or Artificial Opening
- 8E098CZ – Via Natural or Artificial Opening Endoscopic

When is the next Data User Group meeting?

- The next User Group will meet Tuesday, November 25, 2025.
- http://www.chiamass.gov/ma-apcd-and-case-mix-user-workgroup-information/

Questions?

- Questions related to MA APCD email:
  apcd.data@chiamass.gov
- Questions related to Case Mix email:
  casemix.data@chiamass.gov