Chronic Condition Subject Matter Expert Panel and BETOS Restructuring

RBCS

Restructured BETOS Classification System RBCS Final Report

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EXECUTIVE SUMMARY

The rapid evolution of medical services and technology has led to changes in Medicare spending and, in turn, created challenges to understanding Medicare expenditures. Since the 1980s, the Centers for Medicare & Medicaid Services (CMS), policymakers, and researchers have relied on the Berenson-Eggers Type of Service[1] (BETOS) Taxonomy to understand shifts in Medicare physician spending over time. However, since BETOS was originally developed, new avenues of utilization have materialized, and the landscape of provided services has expanded, requiring the BETOS system to be refreshed.

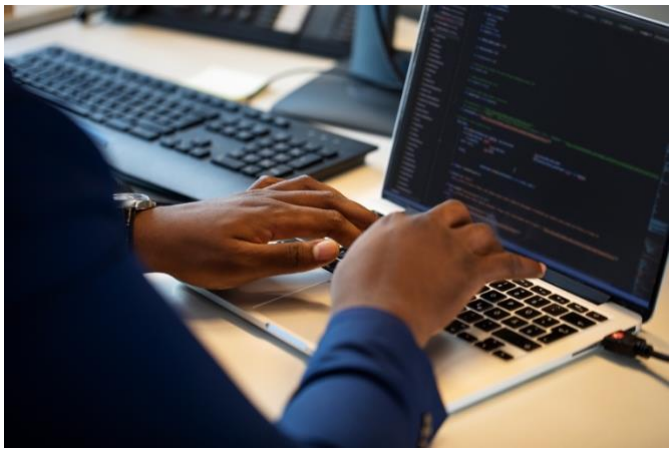
In September 2019, Provider Resources, Inc. (***PRI***™) and the CMS Office of Enterprise Data and Analytics (OEDA) launched this project to restructure and maintain the BETOS classification system. The objective was twofold: 1) to revise the BETOS classification system for healthcare services and supplies to facilitate meaningful analysis of healthcare spending and utilization; and 2) to maintain and update the Taxonomy over time. Specifically, the project sought to categorize the American Medical Association (AMA) CPT® and CMS Healthcare Common Procedure Coding System (HCPCS) codes (Levels 1 and 2) across all Medicare Part B services (not only Physician Fee Schedule (PFS) services) and reduce the number of uncategorized CPT and HCPCS codes.

This work culminated in the creation of the Restructured BETOS Classification System (RBCS). RBCS development required an extensive review of the previous efforts to update BETOS and necessitated the exploration of innovative approaches to account for most Medicare Part B expenditures.

The RBCS includes CPT, HCPCS Level One and HCPCS Level Two codes. Level One and Level Two HCPCS codes are used to bill for professional services, hospital outpatient services, durable medical equipment (DME), drugs, radiology and clinical lab tests. Each step of the

[1] Robert A. Berenson, MD, Mary Jo Braid-Forbes, MPH (May 2019). Updating BETOS 2.0 for 2018 and 2019. Report for the Medicare Payment Advisory Commission. https://www.urban.org/research/publication/development-and-structure-betos-20-illustrative-data.

RBCS development process was reviewed and approved by a Technical Expert Panel (TEP) comprised of experts with diverse backgrounds including, but not limited to, social science researchers, practicing physicians, physicians in academic institutions, representatives from Medicare Payment Advisory Commission (MedPAC), Cigna Healthcare, and the Urban Institute, along with staff from CMS within the Center for Medicare, Office of the Actuary, and the Center for Clinical Standards and Quality.



Each year, the RBCS Taxonomy is updated to account for newly introduced and retired HCPCS/CPT codes, as well as changes in the utilization of services. The update also includes a thorough review of the process used to build the RBCS to ensure it remains accurate and stable. As part of the review process, additional areas of interest and potential complicating factors are explored. All Taxonomy updates and process modifications are reviewed by the TEP to ensure the RBCS remains logically sound and aligned with the needs of the research community. The TEP met on April 17, 2024, to discuss the development of the 2024 RBCS Taxonomy.

In 2020, the first year of RBCS Taxonomy development, the RBCS update process reviewed HCPCS/CPT codes paid by Medicare Part B on claims billed between January 1, 2014, and December 31, 2018. The final 2020 RBCS Taxonomy contained 13,414 distinct HCPCS/CPT codes.

In 2021, the RBCS Taxonomy update process reviewed HCPCS/CPT codes paid by Medicare Part B on claims billed between January 1, 2015, and December 31, 2019. A total of 599 HCPCS/CPT codes were newly added to the taxonomy. The final 2021 RBCS Taxonomy file contained 14,013 distinct HCPCS/CPT codes.

In 2022, the RBCS Taxonomy update process reviewed HCPCS/CPT codes paid by Medicare Part B on claims billed between January 1, 2016, and December 31, 2020. A total of 347 HCPCS/CPT codes were newly added to the taxonomy. The final 2022 RBCS Taxonomy file contained 14,360 distinct HCPCS/CPT codes.

In 2023, the RBCS Taxonomy update was modified to incorporate fee schedules into the HCPCS/CPT code identification process. In addition to reviewing HCPCS/CPT codes paid by Medicare Part B on claims billed between January 1, 2017, and December 31, 2021 (5 years of claims data), the process incorporated CMS fee schedules active between January 1, 2017, and December 31, 2022 (6 years of fee schedule data). Fee schedules were added to the RBCS Taxonomy update process for two reasons: 1) to ensure that the RBCS Taxonomy includes HCPCS/CPT codes that were paid by Medicare, but were not found in the claims data, and 2) to make the RBCS more current by capturing an additional year of data with newly introduced

HCPCS/CPT codes. A total of 1,162 HCPCS/CPT codes were newly added to the taxonomy. Among these newly added HCPCS/CPT codes, 311 were added to the taxonomy using the paid claims methodology and the remaining 851 were added because they were covered by a fee schedule. Of the HCPCS/CPT codes newly added to the RBCS using the paid claims methodology, 211 were first made available as billable codes in 2021. Of the HCPCS/CPT codes newly added to the RBCS using the fee schedule methodology, 96 were first made available as billable codes in 2021 and 350 were first made available as billable codes in 2022. The final 2023 RBCS Taxonomy file contained 15,522 distinct HCPCS/CPT codes.

In 2024, the RBCS Taxonomy update process reviewed HCPCS/CPT codes paid by Medicare Part B on claims billed between January 1, 2018, and December 31, 2022 (5 years of claims data), and incorporated CMS fee schedules active between January 1, 2018, and December 31, 2023 (6 years of fee schedule data). A total of 462 HCPCS/CPT codes were newly added to the taxonomy. Among these newly added HCPCS/CPT codes, 455 were added to the taxonomy using the fee schedule methodology and the remaining 7 were added using the paid claim methodology. The final 2024 RBCS Taxonomy file contained 15,984 distinct HCPCS/CPT codes.

The final 2024 Taxonomy file represents a timeline of all RBCS to HCPCS code assignments throughout the history of the RBCS.It preserves RBCS assignments from all prior Taxonomy files. This includes instances in which the RBCS value assigned to a HCPCS/CPT code is updated during a revision (in which case both the original *and* updated assignments are in the taxonomy, but with different dates), and when a given HCPCS/CPT code is retired or no longer used for Medicare Part B billing (in which case the RBCS assignment is carried forward from one year to the next, but it is not reviewed or updated during the yearly review process).

The final 2024 Taxonomy file consists of **17,997 total** rows which breaks down as follows:

13,414	Distinct RBCS assignments with effective dates equal to 1/1/2014. These HCPCS/CPT codes are from the original 2020 RBCS Release Year.
900	Distinct RBCS assignments with effective dates equal to 1/1/2015. Of these assignments, 599 are for HCPCS/CPT codes that were newly introduced in the 2021 RBCS Taxonomy file, and 301 are for HCPCS/CPT codes where the prior RBCS assignment was updated during the 2021 RBCS revision process.
1,172	Distinct RBCS assignments with effective dates equal to 1/1/2016. Of these assignments, 347 are for HCPCS/CPT codes were newly introduced in the 2022 RBCS Taxonomy file, and 825 are for HCPCS/CPT codes where the prior RBCS assignment was updated during the 2022 RBCS revision process.
1,471	Distinct RBCS assignments with effective dates equal to 1/1/2017. Of these assignments, 1,162 are for HCPCS/CPT codes were newly introduced in the 2023 RBCS Taxonomy file, and 309 are for HCPCS/CPT codes where the prior RBCS assignment was updated during the 2023 RBCS revision process.

1,040	Distinct RBCS assignments with effective dates equal to 1/1/2018. Of these assignments, 462 are for HCPCS/CPT codes were newly introduced in the 2024 RBCS Taxonomy file, and 578 are for HCPCS/CPT codes where the prior RBCS assignment was updated during the 2024 RBCS revision process.
17,997	**Total Rows**

Assignments carried over from previous Release Years have RBCS Assignment Effective Dates equal to the first year the classification is made. The timespans used for each iteration of the RBCS Taxonomy are presented in ***Table 1***.

Table 1: RBCS Taxonomy Timespans

RBCS Release Year	Part B Healthcare Services Time Period	Fee Schedule 6-year Period	RBCS Assignment Effective Date
2020	2014 – 2018	NA	01/01/2014
2021	2015 – 2019	NA	01/01/2015
2022	2016 – 2020	NA	01/01/2016
2023	2017 – 2021	2017-2022	01/01/2017
2024	2018 – 2022	2018-2023	01/01/2018

An advantage to having the Taxonomy in a timeline format is that it maintains the history of the Taxonomy in a single file. This allows users to easily see previous versions of the Taxonomy and helps them understand the gradual evolution of the RBCS Taxonomy as Medicare Part B payment policies change, HCPCS/CPT codes are added or retired, and assignments are updated. Another advantage to maintaining history is that it will aid in the replication of results when the Taxonomy is used at different points in time. As the RBCS evolves, maintaining the RBCS history in this way will prove crucial.

For example: HCPCS/CPT code 15770 was assigned an initial RBCS ID of PS000M in the 2020 RBCS Taxonomy and this assignment was carried over into the 2021 and 2022 RBCS Taxonomy release years. However, HCPCS/CPT code 15770 is assigned a new RBCS ID of PS000O in the 2024 RBCS Taxonomy release year because the HCPCS/CPT code did not meet the criteria to be designated a major procedure for 3 consecutive years. For HCPCS/CPT code 15770, the original assignment has an effective date of 01/01/2014 (the first year the classification was made). The modified assignment has a new row with an effective date of 01/01/2018 as presented in ***Table 2***.

Table 2: RBCS Taxonomy Assignment Effective Date Example

HCPCS/CPT Code	RBCS ID	RBCS Assignment Effective Date
15770	PS000M	01/01/2014
15770	PS000O	01/01/2018

This final report details the processes undertaken to update the 2024 RBCS Taxonomy. Included in the report and appendices are significant details on the development of categories, subcategories, families, and major procedure designation. The final Taxonomy and HCPCS/CPT code crosswalk are also included in this report.

REINTRODUCING THE RBCS TAXONOMY

Introduction

The RBCS design work began with the understanding that it was an evolution of the BETOS framework; it would need to fill the same niche occupied by the original BETOS. Throughout the RBCS development process, careful consideration was given to how the classification system would be used, understood, and maintained over time. The Taxonomy design, decision rules, and classification methodology were structured with these guiding operational principles in mind.

RBCS Taxonomy Overview

Like the BETOS classification system that preceded it, the RBCS Taxonomy is hierarchically structured with several levels of granularity. The various groupings within each level of the hierarchy (categories, subcategories, and families) were developed to ensure they are clinically meaningful and informative.

The RBCS only categorizes HCPCS/CPT codes with an allowed amount greater than zero paid through Medicare Part B funds or covered by one of the Medicare fee schedules, excluding HCPCS/CPT codes only paid through Medicaid or commercial payers. Fee schedule and claims data are both used because some HCPCS/CPT codes can account for significant Medicare spending even when they are not explicitly covered by a Medicare Fee Schedule. For example, HCPCS/CPT code 81479 (Unlisted Molecular Pathology) is not paid by any fee schedule but is eligible for payment by a Medicare Administrative Contractor (MAC) after the medical record is submitted, undergoes complex medical review with evidence supporting medical necessity, and the appropriate billing for services using HCPCS/CPT code 81479.[2]

The RBCS hierarchy has RBCS categories at the highest level, followed by RBCS subcategories, followed by RBCS families. Each lower level of the Taxonomy is fixed and nested within the higher-level grouping; a subcategory cannot include HCPCS/CPT codes from different categories, and families cannot include HCPCS/CPT codes from different

[2] https://localcoverage.cms.gov/mcd_archive/view/article.aspx?articleInfo=58918:17

subcategories. This structure is designed to allow various levels of granularity for researchers interested in analyzing Medicare spending and utilization.

In addition, HCPCS/CPT codes in the “procedures” category are further subdivided into “major procedures” and “other procedures.” Any HCPCS/CPT code in the “procedures” category can be designated as a “major procedure” regardless of its subcategory or family. This RBCS Taxonomy feature was also carried over from the original BETOS. This feature allows researchers to focus on procedures that require more work or are more likely to be performed in inpatient settings.

Like the original BETOS and BETOS 2.0, the RBCS assignment for a given HCPCS/CPT code was condensed into a single RBCS identifier. This RBCS identifier is six characters in length with each character or group of characters conveying important information about the identifier’s place in the RBCS Taxonomy. The RBCS category is identified by the first character, the subcategory is identified by the combined first and second characters, the family is identified by the third, fourth, and fifth characters, and the major procedure designation is identified by the sixth character. Embedding intelligence into the RBCS identifier helps data users easily determine an identifier’s general place in the RBCS Taxonomy.

Well-defined RBCS classification rules not only help guide the process of assigning RBCS identifiers to a place in the Taxonomy, but they also provide guidance to data users by being easily understood and clinically relevant. RBCS rules are future-facing, ensuring the Taxonomy is responsive to technological innovation and changes in practice patterns. The rules for each level of the Taxonomy are described in the following sections.

Claims Data

Each year, the RBCS process is updated utilizing the most recently compiled five years of Medicare Part B claims data. The RBCS only categorizes HCPCS/CPT codes from the claims data with an allowed amount greater than zero paid through Medicare Part B funds, excluding HCPCS/CPT codes only paid through Medicaid or commercial payers. The 2024 development of the RBCS Taxonomy used Virtual Research Data Center (VRDC) data from the Medicare carrier, DME, and outpatient claims files for the years 2018 to 2022.

Allowed amounts are used for all spending assessments throughout the RBCS update process. Allowed amounts represent the total liability owed to the provider for the rendered service, including Medicare liability, patient deductibles, and patient co-pays. The allowed amount provides a more accurate representation of the true cost of a given service rather than the Medicare paid amount alone. This is because it combines all liabilities owed to the provider for a given service, not just what is paid by one party. Allowed amounts were used whenever they were available in the data. When they were not available, an allowed amount equivalent was calculated by combining the Medicare paid amount with the patient responsibility amount.

For every RBCS update, five years of claims data are combined and analyzed as a single unit. This broad timeframe smooths out variation in spending and utilization and increases data stability. Spending and utilization are used during the family creation process and the major procedure identification process, both of which are covered in more detail below. By using a large, multi-year dataset, the Taxonomy naturally adjusts to changing trends and healthcare practice patterns over time but does so slowly, giving the RBCS Taxonomy the stability needed to be a useful research tool. The RBCS claims date range was selected to ensure that the final year of claims data being used to construct the Taxonomy was complete when the RBCS update process began.

Fee Schedules

Fee schedules were also used to identify HCPCS/CPT codes for inclusion in the RBCS Taxonomy beginning with the 2023 RBCS update. The 2024 RBCS update evaluated fee schedules covering January 1, 2018 through December 31, 2023. These dates correspond with the 5-year timeframe used to select the claims data for the RBCS update process (2018 – 2022) plus one additional year (2023).

Adding fee schedule data benefits the RBCS in two primary ways. First, using fee schedules as a data source makes the RBCS more comprehensive by capturing HCPCS/CPT codes paid by Medicare that may not account for any spending in the claims data. It is possible that some HCPCS/CPT codes that are paid by one of the Medicare fee schedules are not billed on a claim, or are billed, but did not account for any allowed spending. Using fee schedules ensures those HCPCS/CPT codes are included in the RBCS Taxonomy. Second, adding an additional year of fee schedule data makes the RBCS more current by including HCPCS/CPT codes that were issued in the year following the end of the RBCS claims date range.

The following fee schedules are used in the RBCS update process:

- MPFS Relative Value Unit File (PPRVU)[3]
  Codes from the MPFS PPRVU file with status codes listed in ***Table 3*** were considered paid by the MPFS:

[3] https://www.cms.gov/medicare/payment/fee-schedules/physician/pfs-relative-value-files

Table 3: MPFS National Physician Fee Schedule Relative Value File Status Code (PPRVU)

Status Code	Description
A	Active code
B	Bundled code
C	MACs priced code
J	Anesthesia services
R	Restricted coverage
T	Paid as only service

- Outpatient Prospective Payment System (OPPS) Addendum B[4]
  Codes from the OPPS Addendum B with status indicators listed in ***Table 4*** were considered paid by the OPPS:

Table 4: Outpatient Prospective Payment System (OPPS) Status Indicators

Status Indicator	Description
F	Corneal Tissue Acquisition; Certain CRNA Services and Hepatitis B Vaccines
G	Pass-through Drugs and Biologicals
H	Pass-through device categories
J1 – J2	Hospital Part B services paid through comprehensive Ambulatory Payment Classifications (APC)
K	Nonpass-through drugs and non-implantable biologicals Therapeutic Radiopharmaceuticals Brachytherapy Sources Blood and Blood Products
L	Flu/PPV/COVID-19 vaccine
N	Items/services packaged into APC rates
P	Partial Hospitalization
Q1-Q4	Packaged Services Subject to Separate Payment under OPPS Payment Criteria
R	Blood and Blood Products
S	Significant Procedure, Not Discounted when Multiple
T	Significant Procedure, Multiple Reduction Applies
U	Brachytherapy Sources
V	Clinic or Emergency Department Visit
X	Ancillary Services

- Ambulatory Surgical Center (ASC) Payment Rates Addenda AA, BB, and FF[5].

[4] https://www.cms.gov/medicare/payment/prospective-payment-systems/hospital-outpatient/addendum-a-b-updates

[5] https://www.cms.gov/medicare/payment/prospective-payment-systems/ambulatory-surgical-center-asc/asc-payment-rates-addenda

Codes in ASC Addenda AA, BB, and FF were considered paid if they did not have a status indicator listed in ***Table 5***.

Table 5: Excluded Ambulatory Surgical Center (ASC) Payment Indicators

Payment Indicator	Description
B5	Alternative code may be available; no payment made
D5	Discontinued codes
E5	Surgical Procedure/item not valid for Medicare purposes because of coverage, regulation and/or statute
K5	Surgical procedure/item not valid for Medicare purposes

- Durable Medical Equipment Parenteral and Enteral Nutrition (DMEPEN)[6]
  All codes listed in the DMEPEN fee schedule were considered paid by Medicare.
- Durable Medical Equipment Prosthetics, Orthotics, & Supplies (DMEPOS)[7]
  All codes listed in the DMEPOS fee schedule were considered paid by Medicare.
- Clinical Lab Fee Schedule (CLFS)[8]
  All codes listed in the CLFS were considered paid by Medicare.
- National Drug Code (NDC) Drug and Biological Average Sales Price (ASP NDC), Average Wholesale Price (AWS NDC), Outpatient Prospective Payment (OPPS NDC) and COVID-19 NDC Crosswalk[9]
  All codes in the ASP NDC, AWS NDC, OPPS NDC, and COVID-19 NDC files were considered paid by Medicare.
- Additionally, all FQHC payment codes[10] listed in ***Table 6*** were considered paid by Medicare.

Table 6: Federally Qualified Health Center (FQHC) HCPCS/CPT Codes

HCPCS/CPT Code	Description
G0466	FQHC visit, new patient
G0467	FQHC visit, established patient
G0468	FQHC visit, IPPE or AWV
G0469	FQHC visit, mental health, new patient

[6] https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/DMEPOSFeeSched/DMEPOS-Fee-Schedule

[7] https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/DMEPOSFeeSched/DMEPOS-Fee-Schedule

[8] https://www.cms.gov/medicare/payment/fee-schedules/clinical-laboratory-fee-schedule-clfs/files

[9] https://www.cms.gov/medicare/payment/part-b-drugs/asp-pricing-files

[10] https://www.cms.gov/medicare/payment/prospective-payment-systems/federally-qualified-health-centers-fqhc-center

HCPCS/CPT Code	Description
G0470	FQHC visit, mental health, established patient
G0511	Chronic Care Management for FQHCs
G0512	RHC or FQHC only, psychiatric collaborative care model
G0071	5+ minutes of virtual (non-face-to-face) communication between an RHC or FQHC practitioner
G2025	Payment for a telehealth distant site service furnished by a RHC or FQHC only

Unbundling Spending

Bundled payments present a challenge for the RBCS methodology because allowed spending amounts for individual HCPCS/CPT codes are a critical part of the family assignment process. When services are paid as part of a bundle, reimbursement is not directly linked to each specific service on a claim. Rather, bundled payments capture multiple services that are paid as part of a package with providers being paid a set rate for the entire package instead of being paid for each individual service. In these instances, HCPCS/CPT codes that are part of the bundle may have a line-level payment amount of $0 even if they are covered by Medicare. Therefore, the RBCS update process included steps to “unbundle” bundled claims and allocate spending to the HCPCS/CPT codes included in the bundled payment. This process focused on three broad types of bundled claims:

1. Bundled Ambulatory Payment Classifications (APC) claims paid through the Outpatient Prospective Payment System (OPPS),
2. Federally Qualified Health Center (FQHC) claims, and
3. Rural Health Clinic (RHC) claims.

Though different mechanisms were used to identify the payments and bundled codes for each of these bundled types, the process of unbundling the payment is the same.

Medicare pays for most hospital outpatient services under the OPPS using APCs. APC claims must meet the following criteria to be included in the unbundling process: at least one claim line contains an APC code (where revenue center payment method indicator is equal to 1), and at least one claim line contains a HCPCS/CPT code (where the revenue center payment method indicator is equal to 9).

FQHCs are safety net providers that typically provide services in an outpatient clinic. FQHCs are not reimbursed by Medicare through the PFS or OPPS like other comparable providers of Medicare Part B services. Rather Medicare pays FQHCs based on the FQHC PPS. Bill type codes were used to identify FQHC claims. Bundled payments for these claims were taken from lines with FQHC-specific procedure codes, and bundled lines were identified as non-denied claim lines with $0 allowed spending. Claim lines that did not have FQHC-specific procedure codes but had greater than $0 in allowed spending were considered non-bundled services and were excluded from the unbundling process.

RHCs do not receive reimbursement from Medicare's PFS or OPPS like comparable providers of Medicare Part B services. Instead, CMS pays an all-inclusive rate (AIR) payment per visit

throughout the clinic's fiscal year which are then reconciled at the end of the year. Bill type codes were also used to identify RHC claims. Bundled payments for these claims were taken from claim lines with a "CG" procedure code modifier (primary reason for the medically necessary visit), and bundled lines were identified as non-denied claim lines with $0 allowed spending. Claim lines that did not have a "CG" procedure code modifier but had greater than $0 in allowed spending were considered non-bundled services and were excluded from the unbundling process.

For all claim types, charged amounts from the bundled lines were used to allocate the bundled payment on the claim. The bundled payments were allocated to each bundled line according to the proportion of the overall charged amount accounted for by a given claim line. An example of how this process works is provided in ***Table 7***.

Table 7: Unbundling Bundled Payments Example

Claim Line	HCPCS/CPT Code	Provider Payment Amount	Charged Amount	Percent of Charged Amount	Unbundled Paid Amount
1	96365	$0	$337	1.4%	$136
2	96375	$0	$200	0.8%	$80
3	C1713	$0	$565	2.4%	$227
4	C1776	$9,163	$15,216	66.7%	$6,120
5	73560	$0	$164	0.7%	$66
6	27447	$0	$6,301	27.6%	$2,534

**Line 4: Bundled Payment*
**Lines 1 – 6: Bundled Codes*
**Percentages in the "Percent of Charged Amount" are rounded and therefore sum to 99.6% instead of 100%.*
**Unbundled Paid amounts in this example were calculated using non-rounded percentages*

In the example shown in ***Table 7***, the entire paid amount for the claim ($9,163) is on Claim Line 4 (see the "Provider Payment Amount" column) and Claim Lines 1, 2, 3, 5, and 6 have Provider Payment Amounts of $0. To appropriately allocate the Provider Payment Amount across all claim lines, percentages were calculated for each line based on the proportion of the overall total charged amount a given line accounted for (see the "Percent of Charged Amount" column). In this example, Claim Lines 4 and 6 accounted for a large percentage of the overall charged amount (66.7% and 27.6% respectively), while Claim Lines 1, 2, 3, and 5 accounted for a relatively small percentage of the overall charged amount (2.4% to 0.7%).

These percentages were multiplied by the total Provider Payment Amount ($9,163) so that each line was allocated a proportion of the paid amount equal to the proportion of the charged amount that line accounted for. This amount is listed in the "Unbundled Paid Amount" column. In this example, Claim Line 4 was allocated $6,120 of the paid amount because it accounted for 66.7% of the overall changed amount (66.7% of $9,163 is $6,120), and Claim Line 6 was allocated $2,534 of the paid amount because it accounted for 27.6% of the overall charged

amount (27.6% of $9,163 is $2,534). Claim Lines 1, 2, 3, and 5 were allocated between $227 and $66 of the paid amount because they accounted for between 2.4% and 0.7% of the overall charged amount. When summed, the total of the "Unbundled Paid Amount" column equals the total of the "Provider Payment Amount" column.

The unbundling process was restricted to HCPCS/CPT codes covered by at least one fee schedule. Non-covered or expired HCPCS/CPT codes are occasionally included in a service bundle on a claim, but they are not always identified as non-payable codes by the payment and status indicators. To prevent such codes from entering the Taxonomy or influencing the allocation of spending among covered codes in the bundle, codes that were not covered by a fee schedule were excluded from the unbundling process.

For claims with more than one bundled payment, the bundled payments were summed and divided among the bundled claim lines as if all bundled lines on the claim were reimbursed as part of a single payment.

Categories

Identified as the first character of the RBCS identifier, a category is the highest level of the Taxonomy and represents broad concept such as "Procedures," "Tests," and "Imaging." These eight groupings give shape to the overall structure of the Taxonomy and help guide subsequent RBCS assignments. ***Table 8*** lists the specific categories and rules used to assign HCPCS/CPT codes to RBCS categories.

Table 8: Category Decision Rules

Category	Rule
Anesthesia	• All anesthesia HCPCS/CPT codes were placed in the anesthesia category.
DME	• HCPCS/CPT codes for products and supplies were classified as Durable Medical Equipment (DME).
Evaluation and Management (E&M)	• All HCPCS/CPT codes identified as evaluation and management visits were classified as E&M. • HCPCS/CPT codes for physical examinations to obtain specimens for subsequent testing were assigned to the E&M category.
Imaging	• If the primary purpose of a HCPCS/CPT code is to obtain an image, it was classified as imaging in the RBCS Taxonomy. • For situations in which a HCPCS/CPT code appeared to combine imaging and a procedure, if the primary purpose is to produce an image for interpretation, the HCPCS/CPT code was assigned to imaging.
Other	• HCPCS/CPT codes for ambulance, enteral and parenteral feeding and nutrition services and supplies, and vision, hearing, and speech services were classified as Other.
Procedures	• If the primary purpose of a HCPCS/CPT code is to perform a procedure at a single time and place, it was classified as a procedure. • For situations in which a HCPCS/CPT code appeared to combine imaging and a procedure, if the primary purpose is to produce an image to facilitate a procedure, the HCPCS/CPT code was classified as a procedure.

Category	Rule
	• HCPCS/CPT codes for obtaining biopsy or measurement information were assigned as a procedure.
Treatments	• If the medical intervention described by a HCPCS/CPT code is intended to be delivered repeatedly as part of a series over time, it was classified as a treatment. • HCPCS/CPT codes linking an E&M process with a treatment modality were classified as treatments.
Tests	• If the purpose of the procedure is to obtain test results, the HCPCS/CPT code was classified as a test.

Subcategories

Identified by the combined first and second characters of the RBCS identifier, subcategories are the mid-level of the Taxonomy, further dividing categories into specific service groups or organ systems. For example, the "Procedures" category contains subcategories specific to organ systems, such as "Breast," "Cardiovascular," or "Skin." The "Tests" category contains subcategories that are specific to test type, such as "Anatomic Pathology" and "Pulmonary." The full list of 52 RBCS subcategories is presented in ***Table 9.***

Table 9: RBCS Subcategories by Category Group

Category	Subcategory
Anesthesia	Anesthesia
Durable Medical Equipment (DME)	Drugs Administered through DME
DME	Hospital Beds
DME	Medical/Surgical Supplies
DME	Orthotic Devices
DME	Other DME
DME	Oxygen and Supplies
DME	Wheelchairs
Evaluation and Management (E&M)	Behavioral Health Services
E&M	Care Management/Coordination
E&M	Critical Care Services
E&M	E&M – Miscellaneous
E&M	Emergency Department Services
E&M	Home Services
E&M	Hospice
E&M	Hospital Inpatient Services
E&M	Nursing Facility Services
E&M	Observation Care Services
E&M	Office/Outpatient Services
E&M	Ophthalmological Services
Imaging	CT Scan
Imaging	Imaging – Miscellaneous

Category	Subcategory
Imaging	Magnetic Resonance (MR)
Imaging	Nuclear
Imaging	Standard X-ray
Imaging	Ultrasound
Other	Ambulance
Other	Enteral and Parenteral
Other	Vision, Hearing, and Speech Services
Procedure	Breast
Procedure	Cardiovascular
Procedure	Digestive/Gastrointestinal
Procedure	Eye
Procedure	Hematology
Procedure	Musculoskeletal
Procedure	Other Organ Systems
Procedure	Skin
Procedure	Vascular
Test	Anatomic Pathology
Test	Cardiography
Test	General Laboratory
Test	Molecular Testing
Test	Neurologic
Test	Pulmonary
Test	Test – Miscellaneous
Treatment	Chemotherapy
Treatment	Dialysis
Treatment	Injections and Infusions (nononcologic)
Treatment	Physical, Occupational, and Speech Therapy
Treatment	Radiation Oncology
Treatment	Spinal Manipulation
Treatment	Treatment – Miscellaneous

Like categories, well-structured rules were used to determine how HCPCS/CPT codes were classified into the various subcategories. These rules are outlined in ***Table 10.***

Table 10: Subcategory Decision Rules

Category	Subcategory Assignment Rules
Evaluation and Management (E&M)	• Subcategory distinctions remain based primarily on place of service. • Most E&M (care management/coordination) spending is in "visits," with substantial variation by place of service. • Certain E&M activities specific to a clinical domain (e.g., ophthalmology and

Category	Subcategory Assignment Rules
	behavioral health) are retained. • Recent policy interest in new E&M activities that do not require in-person patient encounters and are recognized for PFS payments gave rise to a subcategory for care coordination/management activities. As such HCPCS/CPT codes increase in number, they may need to be grouped into additional subcategories and families in the future.
Procedures & Treatments	• Neither technical modality (e.g., endoscopy) nor service location (e.g., office or ambulatory surgical center) were deemed clinically important distinctions for creating subcategories. Rather, organ system remains the sole basis for procedure subcategories, and type of treatment remains the basis for treatment subcategories. • Blood products and preparation for transfusion including laboratory HCPCS/CPT service codes are categorized to Procedure – Hematology. • Drugs administered orally are categorized as Treatment – Miscellaneous. Some medications associated with chemotherapy, but also used for other treatment, are categorized as Treatment – Miscellaneous rather than Treatment – Chemotherapy. • Administration of preventive vaccines covered by Medicare are categorized to Treatment –for example, injection for influenza, pneumococcal, and Hepatitis B vaccines. • Component services for dialysis and supplies are grouped as Treatment – Dialysis.
Imaging	• The original BETOS imaging subcategories continue to effectively present the different imaging modalities.
Tests	• HCPCS/CPT codes for travel allowance and collection of specimens are categorized as Test – Laboratory, such as collection of venous blood by venipuncture. Venipunctures and arterial punctures for withdrawal of blood for diagnosis are categorized as procedures.
Anesthesia	• Spending was not analyzed inside this broad category, and no subcategory or family designations were created.
Durable Medical Equipment (DME)	• Medical/Surgical Supplies are assigned to items thrown away after use or not used with equipment. • Other DME is assigned to reusable medical equipment that can withstand repeated use. • Drug and supply dispensing fees paid to a pharmacy are categorized as Other DME. • Orthotic Devices includes HCPCS/CPT codes for prosthetics.
Other	• Other – Enteral & Parenteral category includes items such as formula, tubes, supply kits, and all services and supplies related to enteral and parenteral nutrition.

Families

The family classification is the third, fourth, and fifth characters of the RBCS identifier. Families represent the lowest level of the hierarchy and subdivide the subcategories into groups of HCPCS/CPT codes based on the similarity of the procedural approach. For example, the "Digestive/Gastrointestinal" subcategory of the "Procedures" category contains families such as "Cholecystectomy – Laparoscopic" and "Upper GI Endoscopy." The "Anatomic Pathology" subcategory of the "Tests" category contains families such as "Immunohistochemistry" and "Surgical Pathology Examination." Clinical and coding experts, as well as the AMA CPT section and subsection headings, were the primary means by which similar HCPCS/CPT codes were grouped. The 2024 RBCS Taxonomy includes 179 named families, listed in ***Appendix A: RBCS Families***.

While all HCPCS/CPT codes in the RBCS Taxonomy are given a category and subcategory, not all HCPCS/CPT codes are assigned to a family. The RBCS family development process begins by identifying the highest spending among non-anesthesia HCPCS/CPT codes that, when combined, accounted for 90% of total allowed spending in the claims data being reviewed (excluding anestheisia related spending). These high-spend HCPCS/CPT codes (referred to below as "start codes") were used as starting points to build RBCS families.

Once the start codes were identified, all HCPCS/CPT codes were reviewed, and clinically similar codes were grouped into candidate families. Formal families were created from candidate families when two conditions were met: 1) the candidate family contained at least 1 start code and 2) the combined spending of all codes in the candidate family accounted for at least 0.1% of non-anesthesia allowed spending in the claims data. Because the combined spending of all codes in a candidate family was evaluated against the 0.1% spending threshold, some families contain HCPCS/CPT codes that do not account for any spending in the claims data. HCPCS/CPT codes that could not be grouped into formal families were not assigned to an RBCS family.

The use of spending and utilization patterns in the family development process helps ensure the RBCS Taxonomy is consistent with changing practice trends. As practice patterns change or new HCPCS/CPT codes are introduced, spending will increase for groups of procedures with higher utilization and will decrease for groups with lower utilization. In this way, new families will be introduced, and old families will be retired. This RBCS Taxonomy process has dual benefits:

1. capturing emerging healthcare trends; and
2. pruning families that experience decreased utilization.

As spending fluctuates from year to year, families that are close to the threshold may be dropped and added repeatedly over time. This instability would introduce confusion and make the Taxonomy difficult to use. To resolve this potential problem, families are only dropped if they

fail to meet the spending threshold for five consecutive years. If a family enters the retention period one year but exceeds the threshold the next year, the five-year retention period restarts.

When HCPCS/CPT codes are retired and replaced by new HCPCS/CPT codes, the new HCPCS/CPT codes may be different enough from the retired HCPCS/CPT codes to prevent them from being grouped into the same family. For example, in 2016, all HCPCS/CPT codes in the "Transluminal Angioplasty – Venous" family were retired and replaced with new HCPCS/CPT codes in the "A-V Fistula PCI" family. To avoid a potential gap as replacement HCPCS/CPT codes accumulate the spending needed to create a new family, retired and replacement HCPCS/CPT codes are reviewed and new families are created if needed. If the original HCPCS/CPT codes were assigned to an RBCS family and it is determined that the replacement HCPCS/CPT codes are different enough to create a new RBCS family, a new RBCS family is created automatically. This new RBCS family then begins the five-year retention period and could potentially be dropped if sufficient spending is not accumulated over the next five years.

For retired HCPCS/CPT codes that are not part of a named RBCS family, spending for the retired HCPCS/CPT codes is added to the spending for the replacement HCPCS/CPT codes. This allows the Taxonomy to pick up emerging trends more quickly.

For each category, families were assigned a numeric value beginning with "001" in order of highest spending to lowest spending, with "001" assigned to the family with the highest spending. Numbers were assigned in this way because the families with the highest spending are likely to be the most stable over time. HCPCS/CPT codes not assigned to a family are always given the value of "000."

Major Procedure Identification

The major procedure designation is the sixth character of the RBCS identifier. In the last step of the RBCS update process, all HCPCS/CPT codes in the "Procedures" category were evaluated to determine if they were major or non-major procedures. Major procedures were assigned an "M," and non-major procedures were assigned an "O" (other). An "N" (not a procedure) was assigned to all non-procedure HCPCS/CPT codes.

Unlike other levels of the RBCS Taxonomy, the major procedure designation is not hierarchical in nature. All HCPCS/CPT codes in the "Procedures" category can be classified as major procedures, regardless of subcategory. The major procedure identification process used relative value units (RVUs) and service setting to differentiate procedure type. Major procedure HCPCS/CPT codes were identified in four ways:

- HCPCS/CPT codes assigned an RVU greater than or equal to 9.0 were identified as a major procedure.
- HCPCS/CPT codes assigned an RVU greater than or equal to 5.5 but less than 9.0 and used in an inpatient setting greater than 15% of the time were identified as a major procedure.
- HCPCS/CPT code descriptions beginning with "unlisted" that occurred in an inpatient setting with a frequency greater than 15% were classified as a major procedure. The RVU requirement was not included for unlisted HCPCS/CPT codes because RVUs were not assigned to these codes.
- Add-on HCPCS/CPT codes were identified as major procedures when all of their associated primary HCPCS/CPT codes were major procedures. Add-on HCPCS/CPT codes represent procedures where the bulk of the effort is concentrated in the primary HCPCS/CPT code. For this reason, add-on HCPCS/CPT codes were generally not identified as major procedures using RVU rules, even if they occurred within the context of a major procedure. This rule was developed to account for situations where all primary HCPCS/CPT codes for a given add-on HCPCS/CPT code were major procedures. This rule was not applied in situations in which primary HCPCS/CPT codes for the add-on HCPCS/CPT code were a mix of major and non-major procedures or where the add-on HCPCS/CPT code was not in the "procedures" category.

RVU releases were obtained from the CMS PFS Relative Value Files website[11] for the years covered by the RBCS Taxonomy revision timeframe. The most recent non-missing RVU was retained for situations in which a HCPCS/CPT code was assigned different RVUs across years.

[11] https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeeSched/PFS-Relative-Value-Files

In addition to these rules, a three-year retention was used to enhance the stability of the major procedure identification indicator. HCPCS/CPT codes identified as major procedures in one year continued to be classified as major procedures unless they fail to meet the major procedure benchmarks for three consecutive years. If a major procedure entered the retention period one year and then exceeded the thresholds the next year, the three-year retention period restarted.

CHANGES MADE FOR THE CURRENT YEAR

WW Codes

Durable Medical Equipment Medicare Administrative Contractors (DME MACs) convert NDC codes for certain anti-cancer drugs into WW codes to facilitate claims processing. These HCPCS/CPT codes are not covered by any fee schedule, but they do account for significant spending in the Medicare claims data. Though WW codes are not covered by any fee schedule, they are affiliated with corresponding J codes that are covered by one or more Medicare fee schedules.

To maintain consistency within the RBCS, all spending and utilization for WW codes was transferred to the corresponding J codes. WW codes, their corresponding J code, and the allowed spending accounted for by the WW codes in the 2024 release year data are presented in ***Appendix B***.

RBCS 2024 UPDATE PROCESS

This section of the report provides summary details for the 2024 update process. A step-by-step outline of the update process is presented in ***Appendix C***. All data and statistics in this section were generated using the data extract for a given revision year, and does not include RBCS assignments maintained in the RBCS Taxonomy file for historic purposes (e.g., codes that were not reviewed because they were retired).

HCPCS/CPT Codes and Captured Spending

Statistics for the current and prior year data extracts are shown in ***Table 11***. A total of 15,106 distinct HCPCS/CPT codes were identified in the data extract used for the 2024 RBCS update process. Of these HCPCS/CPT codes, 462 were new to the 2024 release year. The 2024 release year data extract captured $15.4 billion more in total spending than the 2023 release year.

Table 11: Data Extract Statistics for Release Years 2020-2024

	RBCS Release Year				
	2020	**2021**	**2022**	**2023**	**2024**
Years Captured	2014-2018	2015-2019	2016-2020	2017-2022*	2018-2023*
HCPCS/CPT Codes In the Data Extract	13,414	13,648	13,759	14,806	15,106
New HCPCS/CPT Codes		599	347	1,162	462

	RBCS Release Year				
	2020	2021	2022	2023	2024
Total Allowed Spending Captured	$1,109 billion	$1,154 billion	$1,149 billion	$1,137 billion	$1,152 billion
Spending Attributed to New HCPCS/CPT Codes	N/A	$4,991 million	$3,737 million	$4,615 million	$1,079 million

*The last year in this date range only captures fee schedule data and does not include any claims data.

New HCPCS/CPT Code Summary

The top ten new HCPCS/CPT codes in terms of spending and utilization are listed in ***Table 12 and Table 13***. Most of the high spending and high frequency HCPCS/CPT codes were for COVID-19 related services. It is important to note that most new HCPCS/CPT codes in the 2024 release year were added because they were included on a 2023 fee schedule, and therefore did not have any claims data associated with them for years 2018-2022. As a result, all new HCPCS/CPT codes other than K1034 accounted for less than 0.01% of total spending. K1034 alone accounted for 99.99% of the $1,079 million in spending attributed to new HCPCS/CPT codes, while all remaining new HCPCS/CPT codes combined accounted for just $80,000. Similarly, K1034 accounted for over 75% of utilization attributed to new HCPCS/CPT codes.

Table 12: Top Ten New HCPCS/CPT Codes by Allowed Spending

HCPCS/CPT Code	Description
K1034	Provision of COVID-19 test, nonprescription self-administered and self-collected use, FDA approved, authorized or cleared, one test count
87593	Detection of Orthopoxvirus
0044A	Intramuscular administration of single severe acute respiratory syndrome coronavirus 2 (COVID-19) vaccine, recombinant spike protein nanoparticle, saponin-based adjuvant, preservative free, 5 mcg/0.5 ml dosage; booster dose
0154A	Intramuscular administration of single severe acute respiratory syndrome coronavirus 2 (COVID-19) vaccine, mrna-lnp, bivalent spike protein, preservative free, 10 mcg/0.2 ml dosage, diluent reconstituted, tris-sucrose formulation, additional dose
0144A	Intramuscular administration of single severe acute respiratory syndrome coronavirus 2 (COVID-19) vaccine, mrna-lnp, spike protein, bivalent, preservative free, 25 mcg/0.25 ml dosage, additional dose
87913	Genotype analysis of severe acute respiratory syndrome coronavirus 2 (COVID-19) by nucleic acid for identification of mutations in targeted regions
K1027	Oral device/appliance used to reduce upper airway collapsibility, without fixed mechanical hinge, custom fabricated, includes fitting and adjustment
G1028	Take-home supply of nasal naloxone; 2-pack of 8mg per 0.1 ml nasal spray (provision of the services by a medicare-enrolled opioid treatment program); list separately in addition to code for primary procedure

HCPCS/CPT Code	Description
0164A	Intramuscular administration of single severe acute respiratory syndrome coronavirus 2 (covid-19) vaccine, mrna-lnp, spike protein, bivalent, preservative free, 10 mcg/0.2 ml dosage, additional dose
A9277	Transmitter; external, for use with non-durable medical equipment interstitial continuous glucose monitoring system

Table 13: Top Ten New HCPCS/CPT Codes by Utilization

HCPCS/CPT Code	Description
K1034	Provision of covid-19 test, nonprescription self-administered and self-collected use, fda approved, authorized or cleared, one test count
G1010	Clinical decision support mechanism stanson, as defined by the medicare appropriate use criteria program
G9891	Mdpp session reported as a line-item on a claim for a payable mdpp expanded model (em) hcpcs code for a session furnished by the billing supplier under the mdpp expanded model and counting toward achievement of the attendance performance goal for the pay
87593	Detection of orthopoxvirus
0044A	Intramuscular administration of single severe acute respiratory syndrome coronavirus 2 (covid-19) vaccine, recombinant spike protein nanoparticle, saponin-based adjuvant, preservative free, 5 mcg/0.5 ml dosage; booster dose
0144A	Intramuscular administration of single severe acute respiratory syndrome coronavirus 2 (covid-19) vaccine, mrna-lnp, spike protein, bivalent, preservative free, 25 mcg/0.25 ml dosage, additional dose
0154A	Intramuscular administration of single severe acute respiratory syndrome coronavirus 2 (covid-19) vaccine, mrna-lnp, bivalent spike protein, preservative free, 10 mcg/0.2 ml dosage, diluent reconstituted, tris-sucrose formulation, additional dose
90619	Meningococcal conjugate vaccine, serogroups a, c, w, y, quadrivalent, tetanus toxoid carrier
A9277	Transmitter; external, for use with non-durable medical equipment interstitial continuous glucose monitoring system
91314	Severe acute respiratory syndrome coronavirus 2 (sars-cov-2) vaccine, mrna-lnp, spike protein, bivalent, preservative free, 25 mcg/0.25 ml dosage, for intramuscular use

Categories and subcategories for new HCPCS/CPT codes are listed in ***Table 14***. As shown there, the "Molecular Testing" subcategory captured most spending among new codes (just over $1 billion in spending for new HCPCS/CPT codes). When combined, new codes in all other subcategories accounted for less than $150,000 in total allowed spending.

Table 14: Highest Spending Categories and Subcategories for New HCPCS Codes

Category	Subcategory	Total New HCPCS/CPT Codes	Total Allowed Amount for New HCPCS/CPT Codes ($M)
Test	Molecular Testing	46	$1,079.302
Test	General Laboratory	32	$0.080
Treatment	Injections and Infusions (nononcologic)	108	$0.058
DME	Other DME	14	$0.002
E&M	Home Services	3	>$0.001
DME	Drugs Administered Through DME	4	>$0.001
E&M	E&M - Miscellaneous	1	>$0.001
E&M	Care Management/Coordination	7	>$0.001
E&M	Ophthalmological Services	1	$0.000
DME	Medical/Surgical Supplies	33	$0.000

Category, Subcategory, and Family Modifications

Part of the RBCS update process involved reviewing HCPCS/CPT code assignments to ensure they were categorized accurately.

The count of HCPCS/CPT codes the 2024 RBCS update data extract that changed category, subcategory, or family relative to their most recent assignment in the 2023 RBCS Taxonomy are presented in ***Table 15***. As indicated, 389 HCPCS/CPT codes were reclassified. Almost all (327) of these were HCPCS/CPT codes that moved from "No RBCS Family" to a formal family. Of the HCPCS/CPT codes that moved from "No RBCS Family" to a formal family, most moved to "Below Knee Orthotic" (125), "Knee Orthosis" (36), or the newly created "Fluid Flow and Drainage of Eye (Any Method)" (29) and "Shoulder Repair or Replacement – Open" (28) families.

Table 15: Count of 2024 HCPCS/CPT Codes that Switched Places in the RBCS Taxonomy

RBCS Taxonomy Modifications	Count of HCPCS/CPT Codes
HCPCS/CPT Codes moved from "No RBCS Family" to a Family	327
HCPCS/CPT Codes moved from a family to "No RBCS Family"	2
HCPCS/CPT Codes Switched from One Family to Another Family	12
HCPCS/CPT Codes Switched Subcategory and Family*	30
HCPCS/CPT Codes Switched Category, Subcategory, and Family*	18
Total	**389**

**HCPCS/CPT codes that were not part of a named family were included in these counts.*

Count of Categories, Subcategories, and Families

The category, subcategory, and family counts for codes in the 2024 RBCS update data extract are presented in ***Table 16***. No new categories or subcategories were introduced in 2024, and no categories, subcategories or families were modified in 2024.

Table 16: RBCS Category, Subcategory, and Family* Counts

	RBCS Release Year				
RBCS Taxonomy	**2020**	**2021**	**2022**	**2023**	**2024**
Total Categories	8	8	8	8	8
Total Subcategories	52	52	52	52	52
Total Families	158	158	172**	176	179
New Categories	0	0	0	0	0
New Subcategories	0	0	1	0	0
New Families	0	0	15	4	3
Families Retained†	0	5	14	15	14

	RBCS Release Year				
RBCS Taxonomy	2020	2021	2022	2023	2024
Categories Not Carried Over	0	0	0	0	0
Subcategories Not Carried Over	0	0	1	0	0
Families Not Carried Over	0	0	1	0	0

** All family counts in this table do not include the "No RBCS Family" family.*
† Families that failed to meet the thresholds but were in the five-year retention period.
***The Blood Glucose Test or Reagent Strips family was replaced by the Diabetic Supplies and Monitoring family, which increased the 2022 total family count to 172 even though there were 15 new families (158 + 15 - 1 = 172).*

The 2024 update process idetnfied 3 new families for inclusion in the 2024 RBCS Taxonomy. Statistics for the new families are provided in ***Table 17.***

Table 17: Families Introduced in the 2024 RBCS Taxonomy

Category	Subcategory	Family	Total HCPCS/CPT Codes	Total Allowed Spending ($M)
Procedure	Eye	Fluid Flow and Drainage of Eye (Any Method)	29	$1,808
Procedure	Musculoskeletal	Shoulder Repair or Replacement - Open	28	$1,414
Test	Molecular Testing	COVID Specific	11	$5,724

Families in the Retention Period

The distribution of families in the five-year retention period is presented in ***Table*** . In the 2024 release year there was 1 family in the 1-year retention period (this family met the family creation criteria in the 2023 release year but not in the 2024 release year), 1 family in the 2-year retention period (this family met the family creation criteria in the 2022 release year but not in the 2023 or 2024 release years), 10 families in the 3-year retention period (these families met the family creation criteria in the 2021 release year but not in the 2022, 2023 or 2024 release years), and 2 families in the 4-year retention period (these families met the family creation criteria in the 2020 release year but not in the 2021, 2022, 2023 or 2024 release years). The retention period was first implemented in 2021 so there are no families in the 5-year retention period for the 2024 release.

Table 18: Family Retention Period Monitoring

	RBCS Release Year			
Family Retention Period	2021	2022	2023	2024
1-Year Retention	5	11	2	1
2-Year Retention	0	3	10	1
3-Year Retention	0	0	3	10

	RBCS Release Year			
Family Retention Period	**2021**	**2022**	**2023**	**2024**
4-Year Retention	0	0	0	2
5-Year Retention	0	0	0	0
Families Dropped – Expired	0	0	0	0
Families Dropped – Other*	0	1	0	0

** Families were dropped if all HCPCS/CPT codes within the family were no longer found in the data or if all* HCPCS/CPT *codes were assigned to a more suitable family.*

HCPCS/CPT Codes and Allowed Spending Captured by Named Families

Given the nature of the family identification process, most HCPCS/CPT codes were not assigned to a code family. Only groups of related HCPCS/CPT codes that have a start code (high spend codes used to start families) and can account for the spending threshold of at least 0.1% of total allowed spending were assigned to an RBCS family. Less than half (44.1%) of HCPCS/CPT codes in the 2024 data extract met this criterion. However, RBCS families captured the majority of 2024 spending (90.9%). The spending breakdown can be found in ***Table 19***.

Table 19: HCPCS/CPT Codes and Allowed Spending Captured by RBCS Families

	RBCS Release Year				
RBCS Families	**2020**	**2021**	**2022**	**2023**	**2024**
Number of Families	158	158	172	176	179
HCPCS/CPT Codes Assigned to a Family	4,069	4,299	5,149	6,048	6,663
Percent of HCPCS/CPT Codes Accounted for in RBCS Families	30.3%	31.5%	37.4%	40.8%	44.1%
Total Spending Captured	$981B	$1,022B	1,033B	$1,024B	$1,048B
Percent of Total Spending Captured	88.5%	88.5%	89.9%	90.1%	90.9%

Major Procedures

A comparison of major procedure counts is presented in ***Table 20.*** A total of 3,331 HCPCS/CPT codes were identified as a major procedure in the 2024 RBCS Taxonomy data extract. When compared to the 2023 data extract, in the 2024 data extract there were 9 more HCPCS/CPT codes identified as major procedures using RVUs, and 17 fewer HCPCS/CPT codes identified as major procedures using service setting. The number of HCPCS/CPT codes identified as major procedures because they were add-on codes to major procedures remained the same across both years (121). Fewer HCPCS/CPT codes were identified as major procedures as a result of the 3-year retention period in 2024 than in 2023 (221 in 2023 vs 48 in 2024).

Table 20: HCPCS/CPT Codes Identified as Major Procedures

	RBCS Release Year				
Major Procedures	**2020**	**2021**	**2022**	**2023**	**2024**
Total Major Procedures	3,485	3,470	3,480	3,512	3,331
% of HCPCS/CPT Codes in Procedures Category	55.9%	55.7%	55.8%	54.8%	51.4%
Major Procedures Identified Using RVUs Alone	2,692	2,681	2,678	2,702	2,711
Major Procedures Identified Using Service Setting*	672	468	463	468	451
Major Procedures Identified as Add-On Codes	121	111	115	121	121
Major Procedures Retained	0	210	224	221	48

** Includes "unlisted" HCPCS/CPT codes.*

Major Procedures in the Retention Period

All HCPCS/CPT codes that do not meet the major procedure threshold during a given update retain their major procedure designation for three years. As shown in ***Table 21***, in the 2024 RBCS data , 27 major procedures entered year one of the three-year retention period, 0 major procedures entered year two of the three-year major procedure retention period, and 21 major procedures entered year three of the three-year retention period. A total of 188 major procedures did not meet the major procedures threshold for the fourth consecutive year and were therefore designated as "other" procedures.

Table 21: Major Procedure Retention Period Monitoring by Release Year

	RBCS Release Year			
Major Procedure Retention Status	**2021**	**2022**	**2023**	**2024**
1-Year Retention	210	25	0	27
2-Year Retention	0	199	25	0
3-Year Retention	0	0	199	21
Major Procedures Changed to Other	0	0	0	188
Other Procedures Changed to Major	1	10	5	3
Major Procedures Changed to "N" *	0	0	0	0

** Major procedures will change to "N" if they switch from the procedures category to a different category.*

Taxonomy File Updates

A distribution of the HCPCS/CPT codes in the final RBCS Taxonomy Files for each release year is presented in ***Table 22***. A total of 15,984 distinct HCPCS/CPT codes were included in the final 2024 RBCS taxonomy file. The 2024 taxonomy file contains RBCS assignments for 568 codes that retired prior to the data collection period for the current year, which are retained in the Taxonomy for historical purposes. The 2024 RBCS taxonomy file also contains RBCS assignments for 310 HCPCS/CPT codes that were active during the 2024 data collection period, but were not reviewed in 2024 because they were not present in the 2024 RBCS data extract.

Table 22: Taxonomy File Statistics for Release Years 2020-2024

	RBCS Release Year				
	2020	2021	2022	2023	2024
Total HCPCS/CPT Codes In the Taxonomy File	13,414	14,013	14,360	15,522	15,984
New HCPCS/CPT Codes		599	347	1,162	462
RBCS Revisions (Cagetgory, Subcategory, Family)		300	815	304	389
RBCS Revisions (Majory Procedure Only)		1	10	5	189

CONCLUSION

The update process for the RBCS Taxonomy added new HCPCS/CPT codes and introduced several process improvements. The RBCS Taxonomy proved to be very stable with little variation in the overall structure of the Taxonomy. Manual review of RBCS identifier assignments improved the accuracy of the overall Taxonomy.

Spending and HCPCS/CPT Code Count by Subcategory

The full breakdown of spending by subcategory can be found in ***Table 23*** through ***Table 32***.

Table 23: Spending and Utilization by Subcategory in 2024 RBCS Update – Anesthesia

Subcategory	Allowed Spending ($M)	% of Allowed Spending	Total HCPCS/CPT Codes	% of HCPCS/CPT Codes
Anesthesia	$13,425	1.2%	289	1.9%

Table 24: Spending and Utilization by Subcategory in 2024 RBCS Update – Durable Medical Equipment (DME)

Subcategory	Allowed Spending ($M)	% of Allowed Spending	Total HCPCS/CPT Codes	% of HCPCS/CPT Codes
Drugs Administered through DME	$4,997	0.4%	45	0.3%
Hospital Beds	$413	0.0%	37	0.2%
Medical/Surgical Supplies	$7,417	0.6%	472	3.1%
Orthotic Devices	$19,507	1.7%	1041	6.9%
Other DME	$36,059	3.1%	507	3.4%
Oxygen and Supplies	$4,089	0.4%	22	0.1%
Wheelchairs	$3,502	0.3%	317	2.1%

Table 25: Spending and Utilization by Subcategory in 2024 RBCS Update – Evaluation and Management (E&M)

Subcategory	Allowed Spending ($M)	% of Allowed Spending	Total HCPCS/CPT Codes	% of HCPCS/CPT Codes
Behavioral Health Services	$12,463	1.1%	134	0.9%
Care Management/Coordination	$4,992	0.4%	93	0.6%
Critical Care Services	$7,561	0.7%	20	0.1%
E&M – Miscellaneous	$939	0.1%	96	0.6%
Emergency Department Services	$30,045	2.6%	15	0.1%
Home Services	$2,291	0.2%	24	0.2%
Hospice	$16	0.0%	2	0.0%
Hospital Inpatient Services	$46,982	4.1%	20	0.1%
Nursing Facility Services	$14,985	1.3%	29	0.2%
Observation Care Services	$7,239	0.6%	12	0.1%
Office/Outpatient Services	$147,203	12.8%	77	0.5%
Ophthalmological Services	$11,458	1.0%	34	0.2%

Table 26: Spending and Utilization by Subcategory in 2024 RBCS Update – Imaging

Subcategory	Allowed Spending ($M)	% of Allowed Spending	Total HCPCS/CPT Codes	% of HCPCS/CPT Codes
CT Scan	$26,538	2.3%	113	0.7%
Imaging – Miscellaneous	$2,361	0.2%	40	0.3%
Magnetic Resonance	$11,223	1.0%	110	0.7%
Nuclear	$15,822	1.4%	237	1.6%
Standard X-ray	$25,022	2.2%	339	2.2%
Ultrasound	$23,567	2.0%	134	0.9%

Table 27: Spending and Utilization by Subcategory in 2024 RBCS Update – Other

Subcategory	Allowed Spending ($M)	% of Allowed Spending	Total HCPCS/CPT Codes	% of HCPCS/CPT Codes
Ambulance	$31,057	2.7%	16	0.1%
Enteral and Parenteral	$2,378	0.2%	43	0.3%
Vision, Hearing, and Speech Services	$2,184	0.2%	154	1.0%

Table 28: Spending and Utilization by Subcategory in 2024 RBCS Update – Procedures

Subcategory	Allowed Spending ($M)	% of Allowed Spending	Total HCPCS/CPT Codes	% of HCPCS/CPT Codes
Breast	$2,654	0.2%	62	0.4%
Cardiovascular	$24,773	2.2%	583	3.9%
Digestive/Gastrointestinal	$26,019	2.3%	771	5.1%
Eye	$24,871	2.2%	320	2.1%
Hematology	$1,760	0.2%	68	0.5%
Musculoskeletal	$54,727	4.7%	2029	13.4%
Other Organ Systems	$25,087	2.2%	1779	11.8%
Skin	$28,253	2.5%	435	2.9%
Vascular	$17,080	1.5%	428	2.8%

Table 29: Spending and Utilization by Subcategory in 2024 RBCS Update – Tests

Subcategory	Allowed Spending ($M)	% of Allowed Spending	Total HCPCS/CPT Codes	% of HCPCS/CPT Codes
Anatomic Pathology	$13,508	1.2%	126	0.8%
Cardiography	$10,345	0.9%	110	0.7%
General Laboratory	$43,476	3.8%	1216	8.0%
Molecular Testing	$18,169	1.6%	744	4.9%
Neurologic	$5,159	0.4%	148	1.0%
Pulmonary	$1,630	0.1%	45	0.3%
Test - Miscellaneous	$1,157	0.1%	119	0.8%

Table 30: Spending and Utilization by Subcategory in 2024 RBCS Update – Treatments

Subcategory	Allowed Spending ($M)	% of Allowed Spending	Total HCPCS/CPT Codes	% of HCPCS/CPT Codes
Chemotherapy	$78,602	6.8%	309	2.0%
Dialysis	$50,567	4.4%	96	0.6%
Injections and Infusions (nononcologic)	$128,181	11.1%	921	6.1%
Physical, Occupational, and Speech Therapy	$47,521	4.1%	66	0.4%
Radiation Oncology	$21,730	1.9%	136	0.9%
Spinal Manipulation	$3,658	0.3%	8	0.1%
Treatment - Miscellaneous	$7,510	0.7%	115	0.8%

APPENDIX A: RBCS FAMILIES

- **Category**
  - **Subcategory**
    - Family

DME

- **Drugs Administered through DME**
  - Bronchodilator
  - Vasodilator
- **Medical/Surgical Supplies**
  - Skin Allograft
  - Wound Care Directed Dressings
- **Orthotic Devices**
  - Below Knee Orthotic
  - Implantable Joint Device
  - Intermittent Urinary Catheter
  - Knee Orthosis
  - Lumbar Sacral Orthosis Brace
  - Ostomy
- **Other DME**
  - Cardiac Catheter
  - Cardiac Stent
  - Cardioverter-Defibrillator
  - CPAP (sleep apnea)
  - Diabetic Supplies and Monitoring
  - Home Ventilator
  - Implantable Neurostimulator
  - Orthopedic Screw
  - Pacemaker
- **Oxygen & Supplies**
  - Oxygen Concentrator
- **Wheelchairs**
  - Power Wheelchairs and Accessories
  - Wheelchair Accessories

Evaluation and Management (E&M)

- **Behavioral Health Services**
  - Psychotherapy – Group
  - Psychotherapy – Nongroup
- **Care Management/Coordination**
  - Chronic & Transitional Care Management
- **Critical Care Services**
  - Critical Care E&M
- **Emergency Department services**
  - Emergency Department E&M
- **Home Services**
  - Home E&M – New and Established
  - Home Health Skilled Services
- **Hospital Inpatient Services**
  - Hospital Discharge Management
  - Hospital E&M – Initial
  - Hospital E&M – Subsequent
- **Nursing Facility Services**
  - Rest Home E&M
  - SNF E&M
- **Observation Care Services**
  - Observation Care
- **Office/Outpatient Services**
  - Annual Wellness Visits
  - FQHC E&M – Facility Fee
  - Hospital Outpatient E&M – Facility Fee
  - Office E&M – Established
  - Office E&M – New
  - Telephone Services
- **Ophthalmological Services**
  - Ophthalmological E&M

Imaging

- **CT Scan**
  - CT/CTA – Abdomen and Pelvis
  - CT/CTA – Chest
  - CT/CTA – Head and Neck
  - CT/CTA – Spine
- **Imaging – Miscellaneous**
  - Computerized Ophthalmic Imaging
- **Magnetic Resonance (MR)**
  - MRI/MRA – Abdomen and Pelvis
  - MRI/MRA – Head and Neck
  - MRI/MRA – Lower Extremity
  - MRI/MRA – Other
  - MRI/MRA – Spine
- **Nuclear**
  - Myocardial Perfusion Scan
  - PET – Oncology

- **Standard X-ray**
  - Angiography
  - Contrast Agent
  - Mammography
  - X-ray – Chest
  - X-ray – Lower Extremity
  - X-ray – Spine and Pelvis
  - X-ray – Upper Extremity
- **Ultrasound**
  - Duplex Scan – Extracranial Arteries
  - Duplex Scan – Extremity Arteries
  - Duplex Scan – Extremity Veins
  - Echocardiography (TTE/TEE)
  - Ultrasound – Abdomen and Pelvis
  - Ultrasound – Nonspecific

Other

- **Ambulance**
  - Medical Transport – Air
  - Medical Transport – Ground
  - Medical Transport – Ground Emergency
  - Medical Transport – Mileage
- **Enteral & Parenteral**
  - Enteral Feeding and Formula
  - Parenteral Feeding and Formula

Procedure

- **Breast**
  - Breast Biopsy
  - Mastectomy
- **Cardiovascular**
  - Comprehensive Electrophysiologic Evaluation
  - Insertion/Removal/Replacement ICD
  - Pacemaker Insertion or Repair
  - Pacemaker Removal
  - Percutaneous Coronary Artery Angioplasty and Stenting
  - Percutaneous Transcatheterization
- **Digestive/gastrointestinal**
  - Cholecystectomy – Laparoscopic
  - Colonoscopy – Lesion Removal
  - Hernia Repair – Laparoscopic (any site)
  - Hernia Repair – Open (Inguinal)
  - Lower GI Endoscopy – Other
  - Upper GI Endoscopy
- **Eye**
  - Cataract Surgery
  - Fluid Flow and Drainage of Eye (Any Method)
  - Intravitreal Injection
  - Vitrectomy – Mechanical
- **Hematology**
  - Red Blood Cell Transfusion
- **Musculoskeletal**
  - Arthrodesis – Spine
  - Arthroplasty – Hip
  - Arthroplasty – Knee
  - Arthroscopy – Lower Extremity
  - Arthroscopy – Upper Extremity
  - Destruction by Neurolytic Agent – Back
  - Joint Injection
  - Laminotomy or Laminectomy – Lumbar
  - Nerve Block Injection – Back
  - Neurostimulator – Back
  - Percutaneous Vertebroplasty
  - Shoulder Repair or Replacement - Open
- **Other Organ Systems**
  - Bronchoscopy
  - Calculus Removal – Urinary
  - Cystourethroscopy
  - Lymph Node Biopsy
  - Nasal/Sinus Endoscopy
  - Prostate Resection
- **Skin**
  - Debridement
  - Destruction Skin Lesion
  - Mohs Surgery
  - Nail Procedure
  - Removal or Shaving of Skin Growth
  - Skin Biopsy
  - Skin Grafting
  - Skin Lesion Excision
  - Wound Repair – All Levels
- **Vascular**
  - A-V Fistula Creation

- A-V Fistula PCI
- Transluminal Angioplasty – Arterial
- Transluminal Angioplasty – Venous
- Transvascular Stent
- Varicose Vein Ablation
- Vascular Embolization
- Venous Catheter Insertion

Test

Anatomic Pathology
- Immunohistochemistry
- Surgical Pathology Examination

Cardiography
- Electrocardiogram
- External Electrocardiographic Monitoring

General Laboratory
- Bacterial Culture
- Blood Count
- Clinical Chemistry
- Drug Tests
- Immunoassay
- Venipuncture Blood Collection

Molecular Testing
- COVID Specific
- Genetic Analysis
- Infectious Agent Detection by DNA/RNA

Neurologic
- Electrical Nerve Conductivity
- Sleep Study

Pulmonary
- Pulmonary Function Testing

Treatment

Chemotherapy
- Chemotherapeutic Agent
- Chemotherapy Administration

Dialysis
- ESRD Related Services (not dialysis)
- Hemodialysis
- Peritoneal Dialysis

Injections and Infusions (nononcologic)
- COVID-19 Vaccine Administration
- Erythropoiesis - Stimulating Agent
- Injection – Anticoagulant
- Injection – Clotting Factors
- Injection – Colony Stimulating Factors
- Injection – Enzymes
- Injection – Growth/Hormone Factor
- Injection – Hyaluronan or Derivative
- Injection – Immune Globulin
- Injection – Immunomodulator
- Injection – Macular Degeneration
- Injection – Monoclonal Antibodies
- Injection – Somatostatin
- Injection – Tumor Necrosis Factor Blocker
- Injection – Vasodilator
- Injection Administration
- Intravenous Infusion, Hydration
- Platelet Stimulating Agent
- Vaccine – Toxoids
- Vaccine Admin – Flu, Pneum, & Hep B

Physical, Occupational, and Speech Therapy
- Occupational Therapy
- PT Treatment
- PT/OT Evaluation
- Speech Therapy

Radiation Oncology
- Conventional Radiation Treatment
- Intensity Modulated Radiation Therapy
- Radiation Treatment Planning

Spinal Manipulation
- Chiropractic

Treatment – Miscellaneous
- Cardiac Rehabilitation
- Hyperbaric Oxygen
- Immunosuppressive Drugs – Non-Injectable

APPENDIX B: WW CODE CONVERSION

Table 31: WW Codes to J Codes mapping, and WW Codes Allowed Spending

WW Code	J Code	Allowed Spending for WW Codes ($M)
WW020	J8510	$0.319
WW090	J8520	$2.891
WW093	J8521	$124.839
WW010	J8530	$0.412
WW011	J8530	$9.252
WW030	J8560	$10.562
WW080	J8600	$0.930
WW040	J8610	$0.038
WW100	J8610	$0.001
WW101	J8610	<$0.001
WW102	J8610	$0.005
WW103	J8610	$0.001
WW002	J8700	$0.258
WW003	J8700	$3.264
WW005	J8700	$9.302
WW006	J8700	$13.935
WW009	J8700	$0.001
WW140	J8705	$11.815

Table 32: Allowed Spending Adjustments for J Codes as a Result of Transferring Allowed Spending from WW Codes

J Code	Original J Code Allowed Spending ($M)	Converted WW Code Allowed Spending ($M)	Total adjusted J Code Allowed Spending ($M)
J8510	<$0.001	$0.319	$0.320
J8520	$0.003	$2.891	$2.894
J8521	$0.021	$124.839	$124.860
J8530	$0.420	$9.664	$10.084
J8560	$0.030	$10.562	$10.593
J8600	<$0.001	$0.930	$0.931
J8610	$0.079	$0.045	$0.123
J8700	$0.029	$26.760	$26.789
J8705	$0.000	$11.815	$11.815

APPENDIX C: 2024 RBCS UPDATE STEPS

The steps below were performed for the 2024 RBCS update.

1. Combined all fee schedules issued between January 1, 2018, and December 31, 2023, and identified HCPCS/CPT codes paid by Medicare.
2. Extracted HCPCS/CPT codes from carrier, DME, and outpatient claims from the VRDC with service dates between January 1, 2018, and December 31, 2022.
3. Identified and unbundled FQHC, RHC, and APC bundled payments. (HCPCS/CPT codes that were not covered by a fee schedule during the 6-year window, such as retired HCPCS/CPT codes, were not allocated spending during the unbundling process).
4. Retained HCPCS/CPT codes with positive allowed spending[12] over the five-year timeframe and HCPCS/CPT codes billed as part of a bundled payment.
5. Combined the list of paid HCPCS/CPT codes from the claims data with the list of HCPCS/CPT codes paid by one of the Medicare fee schedules, keeping all HCPCS/CPT codes that were either paid in the claims data or were covered by a fee schedule.
6. Removed excluded codes from the combined file. Excluded codes fall into one of the following groups: Assessment codes, dental codes (HCPCS/CPT codes starting with "D"), "S" codes (HCPCS/CPT codes starting with "S" are only paid by commercial insurers), CPT II codes (HCPCS/CPT codes ending with "F", which are used to capture measurements), and hospice codes with HCPCS/CPT values between Q5001 and Q5010.
7. Applied the RBCS identifiers from the previous year to the new file.
8. Identified HCPCS/CPT codes that were not classified in the previous year.
9. Added category and subcategory classifications to any new HCPCS/CPT codes.
10. Identified newly added HCPCS/CPT codes for families, reviewed HCPCS/CPT codes to determine if new families needed to be created, reviewed retired and replacement HCPCS/CPT codes, and identified existing families that did not meet the spending threshold and began the five-year retention period.
11. Identified major and non-major procedures and began the three-year retention period for HCPCS/CPT codes that do not meet the major procedure requirements.
12. Applied quality assurance checks.
    a. Spot checks
    b. HCPCS/CPT add-on code checks
13. Finalized Taxonomy for TEP review.
14. Conducted TEP review of revised Taxonomy.
15. Finalized RBCS Taxonomy for the current year.
16. Submitted the *RBCS Final Report* to CMS.

[12] For the carrier and DME files, the allowed amount was defined as the allowed charge amount. For all other claims files, allowed amounts were calculated by adding the payment amount and the patient responsibility amount(s). This was done because other claims tables do not have a field for specifically captured allowed amounts.