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 Service1 (BETOS) taxonomy to understand shifts in Medicare Part B 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. The first objective was to revise the BETOS classification system for healthcare services and supplies to facilitate meaningful analysis of healthcare spending and utilization. Specifically, the project sought to categorize Healthcare Common Procedure Coding System (HCPCS) codes across all Medicare Part B services, not only Physician Fee Schedule (PFS) services, and reduce the number of uncategorized HCPCS codes. The second objective was to maintain and update the taxonomy over time.

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 HCPCS Level One codes (commonly referred to as “CPT codes”) and HCPCS Level Two codes (commonly referred to as “HCPCS codes”). This includes codes for professional services, durable medical equipment (DME), drugs, and clinical lab tests. Each step of the RBCS development process was reviewed and approved by a Technical Expert Panel (TEP) comprised of experts with diverse backgrounds including, but not limited to,

[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.

social science researchers, practicing physicians, physicians in academic institutions, and staff from other federal agencies such as CMS, the Centers for Disease Control and Prevention, and the Assistant Secretary for Planning and Evaluation.

Each year, the RBCS taxonomy is updated to account for retired HCPCS codes, newly introduced HCPCS codes, and changes in utilization that could impact how HCPCS codes are categorized in the RBCS taxonomy. The update effort 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 20, 2022, to discuss the development of the 2022 RBCS taxonomy.

In 2020, the first year of RBCS development, the RBCS process evaluated claims billed between January 1, 2014, and December 31, 2018. The final 2020 taxonomy captured 13,414 distinct HCPCS codes paid through Medicare Part B and accounted for over $1.109 trillion in allowed spending.

In 2021, the RBCS development process evaluated claims billed between January 1, 2015, and December 31, 2019. The final 2021 taxonomy captured 13,648 distinct HCPCS codes paid through Medicare Part B and accounted for over $1.154 trillion in allowed spending. Of the HCPCS codes classified in 2021, 599 were new to the taxonomy. A total of 365 codes classified in the 2020 taxonomy construction were not reviewed during the 2021 taxonomy construction process, either because they were expired or because they were captured by the 2021 RBCS data extract.

In 2022, the RBCS development process evaluated claims billed between January 1, 2016, and December 31, 2020. The final 2022 taxonomy captured 13,759 distinct HCPCS codes paid through Medicare Part B and accounted for over $1.149 trillion in allowed spending. Of the HCPCS codes classified in 2022, 347 were new to the taxonomy. A total of 236 codes classified in the 2021 taxonomy were not reviewed during the 2022 taxonomy construction process. However, these codes are included in the taxonomy file because the taxonomy contains all RBCS classification history. These classifications will be end dated 12/31/2019 and the HCPCS codes from these classifications will not have a subsequent classification that is end dated 12/31/2020.

The final 2022 taxonomy file represents a timeline of RBCS assignments. The taxonomy preserves all RBCS assignments for HCPCS codes from taxonomies issued in previous years that were:

- not included in the 2022 taxonomy construction process; and
- revised during the 2022 taxonomy construction process.

The final 2022 taxonomy file consists of 15,486 total rows which is broken down as follows:

Number of Rows	Description
13,759	Distinct HCPCS active codes at the 12/31/2020
1,061	Assignments with end dates equal to 12/31/2019. These are for HCPCS codes where the assignment changed, or the code was retired, after the 2021 RBCS update.
666	Assignments with end dates equal to 12/31/2018. These are for HCPCS codes where the assignment changed, or the code was retired, after the 2020 RBCS update
15,486	**Total Rows**

As detailed in Table 1, all assignments in the RBCS taxonomy file that are active for 2022 have an end date of 12/31/2020, the last date of the 2022 data pull. The retired RBCS assignments from the 2021 RBCS taxonomy file have an end date of 12/31/2019. All assignments new to the 2022 RBCS taxonomy have an effective date of 01/01/2016.

Table 1: Active and Retired RBCS Assignment End Dates

Assignment Description	RBCS Assignment End Date
Assignments active for the 2022 RBCS taxonomy	12/31/2020
Assignments from the 2021 taxonomy where the assignment changed, or the code was retired after the 2021 RBCS update	12/31/2019
Assignments from the 2020 taxonomy where the assignment changed, or the code was retired after the 2020 RBCS update	12/31/2018

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 what previous versions of the taxonomy looked like and helps them to understand the gradual evolution of the taxonomy as payment policies change, HCPCS codes are added or retired, and assignments are updated. Another advantage 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.

This final report details the processes undertaken to update the 2022 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 code crosswalk are also included.

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 will 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) are carefully developed to ensure they are clinically meaningful and informative. The RBCS only categorizes HCPCS codes with an allowed amount greater than zero paid through Medicare Part B funds, excluding HCPCS codes only paid through Medicaid or commercial payers.

The RBCS hierarchy has RBCS code categories at the highest level, followed by RBCS code subcategories, followed by RBCS code families. Each lower level of the taxonomy is fixed and nested within the higher-level grouping; a subcategory cannot include HCPCS codes from different categories, and families cannot include HCPCS codes from different subcategories. This structure is designed to allow various levels of granularity for researchers interested in Medicare spending and utilization.

In addition, HCPCS codes in the “procedures” category are further subdivided into “major procedures” and “other procedures.” Any HCPCS 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, and it 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 taxonomy is condensed into a single RBCS code. This RBCS code is six characters in length with each character or group of characters conveying important information about the code’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. Imbedding intelligence into the RBCS code in this way helps data users easily determine a code’s general place in the RBCS

taxonomy.

Well-defined RBCS classification rules not only help guide the process of assigning RBCS codes 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.

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 codes with an allowed amount greater than zero paid through Medicare Part B funds, excluding HCPCS codes only paid through Medicaid or commercial payers. The 2022 development of the RBCS taxonomy used Virtual Research Data Center (VRDC) data from the Medicare carrier, DME, and outpatient claims files for the years 2016 to 2020.

It is important to note that 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 was 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, the five years of data are combined and analyzed as a single unit. This broad timeframe smooths out variation in spending and utilization and increases data stability. This is important because spending and utilization are used during the family creation 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 practice patterns over time but does so slowly, giving the RBCS taxonomy the stability needed to be a useful research tool.

Categories

Identified as the first character of the RBCS code, categories are the highest level of the taxonomy and represent broad concepts such as “procedures,” “tests,” and “imaging.” These groupings give shape to the overall structure of the taxonomy and help guide subsequent code assignments. ***Table 2*** lists the specific categories and rules used to assign RBCS codes to categories.

Table 2: Category Decision Rules

Category	Rule
Anesthesia	• All anesthesia HCPCS codes were placed in the anesthesia category.
DME	• HCPCS codes for products and supplies were classified as DME.
Evaluation and Management (E&M)	• All HCPCS codes identified as evaluation and management visits were classified as E&M. • HCPCS 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 code is to obtain an image, it was classified as imaging in the RBCS taxonomy. • For situations in which a HCPCS code appeared to combine imaging and a procedure, if the primary purpose is to produce an image for interpretation, the HCPCS code was assigned to imaging.
Other	• HCPCS 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 code is to perform a procedure at a single time and place, it was classified as a procedure. • For situations in which a HCPCS code appeared to combine imaging and a procedure, if the primary purpose is to produce an image to facilitate a procedure, the HCPCS code was classified as a procedure. • HCPCS codes for obtaining biopsy or measurement information were assigned as a procedure.
Treatments	• If the medical intervention described by a HCPCS code is intended to be delivered repeatedly as part of a series over time, it was classified as a treatment. • HCPCS 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 code was classified as a test.

Subcategories

Identified by the combined first and second characters of the RBCS code, 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 function.” The full list of RBCS subcategories is presented in ***Table 3***.

Table 3: 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
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

Category	Subcategory
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 are used to determine how HCPCS codes should be classified into the various subcategories. These rules are outlined in **Table *4***.

Table 4: 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 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 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 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

Category	Subcategory Assignment Rules
	categorized as Treatment – Miscellaneous rather than Treatment – Chemotherapy. • Administration of preventive vaccines covered by Medicare are categorized to Treatment – 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 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 is 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 codes for prosthetics.
Other	• The Other – Enteral & Parenteral category includes items such as formula, tubes, supply kits, and all services and supplies related to enteral and parenteral nutrition.

Families

Families represent the lowest level of the hierarchy and subdivide the subcategories into groups of HCPCS 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 AMA CPT section and subsection headings, are the primary means by which similar HCPCS codes are grouped. The 2022 RBCS taxonomy includes 172 named families, listed in ***Appendix A: RBCS Families***.

It is important to note that while all HCPCS codes in the RBCS taxonomy are given a category and subcategory, not all HCPCS codes are assigned to a family. The RBCS code family development process begins by identifying the highest spending among non-anesthesia HCPCS codes that, when combined, account for 90% of total allowed spending in the claims data being reviewed for the current year. These high-spend HCPCS codes (referred to below as "start codes") are used as starting points to build RBCS code families.

Once the start codes have been identified, the data are searched for other HCPCS codes that are clinically similar to one or more start HCPCS codes. If these clinically similar HCPCS codes (including the start code) meet the spending threshold of at least 0.1% of allowed spending in the claims data being reviewed, then a formal family is created to capture these codes. HCPCS codes that cannot be grouped in this way are not assigned to a formal 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 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
2. pruning families that experience decreased utilization

The risk of this design is that the taxonomy might become unstable. 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 will only be 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 will restart.

When HCPCS codes are retired and replaced by new HCPCS codes, the new HCPCS codes may be different enough from the retired HCPCS codes to prevent them from being grouped into the same family. For example, in 2016, all HCPCS codes in the “Transluminal Angioplasty – Venous” family were retired and replaced with new HCPCS codes in the “A-V Fistula PCI” family. To avoid a potential gap as replacement HCPCS codes accumulate the spending needed to create a new family, a review step to the RBCS update process was added to identify retired and replacement HCPCS codes and to automatically create new families if needed. If the original HCPCS codes were assigned to an RBCS code family and it is determined that the replacement HCPCS codes are different enough to create a new RBCS family, the new RBCS family will be created automatically. This new RBCS family will then begin the five-year retention

period and will potentially be dropped if sufficient spending is not accumulated over the next five years.

For retired HCPCS codes that are not part of a named RBCS family, the spending will be added for the retired HCPCS codes to the spending for the replacement HCPCS codes. This will allow the taxonomy to pick up emerging trends more quickly.

The family classification is the third, fourth, and fifth characters of the RBCS code value. 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 codes that were not assigned to a family are always given the value of "000."

Major Procedure Identification

In the last step of the RBCS update process, all HCPCS codes in the "procedures" category are evaluated to determine if they are major or non-major procedures. Unlike other levels of the RBCS taxonomy, the major procedure designation is not hierarchical in nature. All HCPCS codes in the "procedures" category can be classified as major procedures, regardless of subcategory. The major procedure identification process uses relative value units (RVUs) and service setting to differentiate procedure type. Major procedure HCPCS codes can be classified in four ways:

- HCPCS codes assigned an RVU greater than or equal to 9.0 are identified as a major procedure.
- HCPCS 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 are identified as a major procedure.
- HCPCS code descriptions beginning with "unlisted" and occurring in an inpatient setting with a frequency greater than 15% are classified as a major procedure. The RVU requirement is not included for unlisted HCPCS codes because RVUs are not assigned to these codes.
- Add-on HCPCS codes are identified as major procedures when all primary HCPCS codes are major procedures. Add-on HCPCS codes represent procedures where the bulk of the effort is concentrated in the primary HCPCS code. For this reason, add-on HCPCS codes are generally not classified 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 codes for a given add-on HCPCS code are major procedures. This rule is not applied in situations in which primary HCPCS codes for the add-on HCPCS code are a mix of major and non-major procedures or where the add-on HCPCS code is not in the "procedures" category.

RVU releases for 2017, 2018, 2019, 2020, and 2021 were obtained from the CMS PFS Relative Value Files website.[2] The most recent non-missing RVU was retained for situations in which a HCPCS code was assigned different RVUs across years.

In addition to these rules, a three-year retention is used to enhance the stability of the major procedure identification indicator. HCPCS codes identified as major procedures in one year will continue to be classified as major procedures unless they fail to meet the major procedure benchmarks for three consecutive years. If a major procedure were to enter the retention period one year and then exceed the thresholds the next year, the three-year retention period would restart.

The major procedure designation is added as the sixth character of the RBCS code value. Major procedures are assigned an "M," and non-major procedures are assigned an "O" (other). An "N" (not a procedure) is assigned to all non-procedure HCPCS codes.

CHANGES MADE FOR THE CURRENT YEAR

Bundled Services

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.

Bundled payments present a challenge for the RBCS methodology for two reasons. First, HCPCS codes that do not account for any allowed spending are dropped from the RBCS assignment process so codes that are frequently paid as part of a bundle may be excluded from the taxonomy. Second, although in some instances the entire payment for a bundled service may be assigned to a HCPCS code that specifically identifies the bundle, there may be other instances in which the payment is assigned to a HCPCS code that is also used for non-bundled payments. In the latter case, the bundle payment will artificially inflate the overall allowed amount for that service.

To account for these challenges, the RBCS update process includes procedures to "unbundle" bundled claims. This process focuses on three broad types of bundled claims: Bundled Ambulatory Payment Classification (APC) claims, Federally Qualified Health Center (FQHC) claims, and Rural Health Clinic (RHC) claims. Though different mechanisms are used to identify

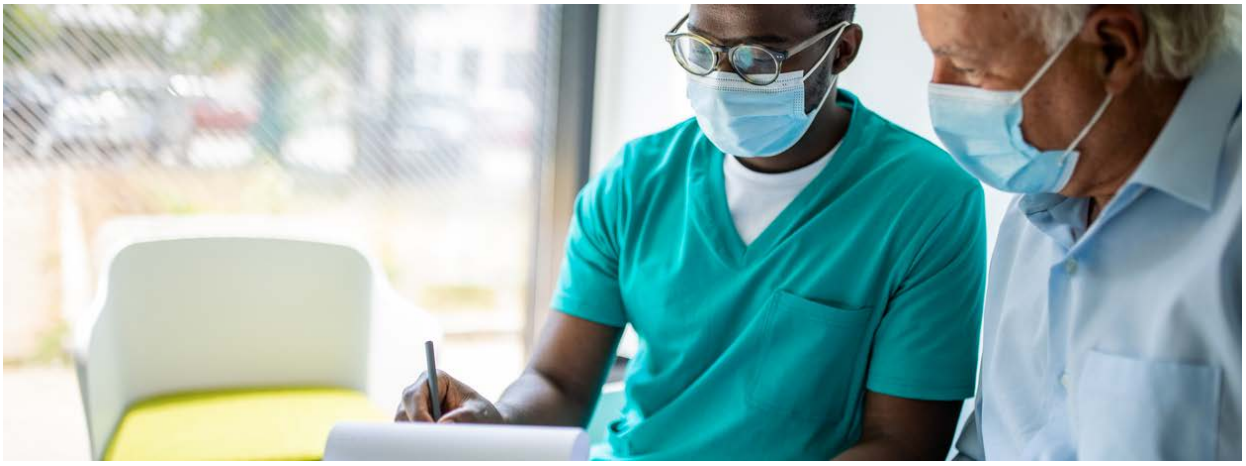
[2] https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeeSched/PFS-Relative-Value-Files

the payments and bundled codes for each of these bundled types, the process of unbundling the payment is the same.

Ambulatory Payment Classifications

Medicare pays for most hospital outpatient services under the outpatient prospective payment system (OPPS) using APCs, which classifies individual services based on similarity of clinical characteristics and costs. Additionally, within each APC, CMS packages integral, ancillary, supportive, dependent, and adjunctive services as well as items with the primary service. However, not all APCs bundle services together. Some items and services, such as pass-through devices and drugs, are required by statute to be paid separately under the OPPS. APC payments can apply to outpatient surgery, outpatient clinics, emergency department services, and observation services. APC payments also apply to outpatient testing such as radiology and nuclear medicine imaging and therapies such as certain drugs, intravenous infusion therapies, and blood products.

In the VRDC, claims with APC bundles will have the entire APC payment on a claim line with the APC code. All other lines with HCPCS codes paid as part of the APC will have zero-dollar Medicare paid amounts. Non-bundled services can also be billed on claims with APC codes and will have separate Fee-for-Service (FFS) payment amounts.



APC claims were defined as outpatient claims with at least one claim line containing an APC code with a payment method indicator indicating the claim line was paid a standard hospital OPPS amount. Any claim with at least one APC code was considered an APC claim. Bundled lines were identified as lines on APC claims with a payment method indicator indicating the payment for that line was included in line with the APC code.

Federally Qualified Health Centers

FQHCs are safety net providers that typically provide services in an outpatient clinic. FQHCs are not reimbursed by Medicare through the PFS or through the OPPS like other comparable providers of Medicare Part B services. Rather, Medicare pays FQHCs based on the FQHC Prospective Payment System (PPS) for medically necessary primary health services and qualified preventive health services delivered by an FQHC practitioner.

The bundled FQHC payment corresponds to FQHC-specific HCPCS codes. The same claim will include at least one additional line item with the HCPCS code describing the reason for the visit with the same line revenue center code as the FQHC bundle code and with a Medicare zero-dollar paid amount. Some additional services that are not part of the FQHC bundle can also be billed on FQHC claims with positive paid amounts. These additional items include drugs, vaccines, and lab tests.

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.

Rural Health Centers

For Medicare reimbursement, RHCs do not receive payment through the PFS or through the OPPS like other 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 is then reconciled at the end of the year. RHCs receive an AIR payment for medically necessary, face-to-face primary health services and qualified preventive health services furnished by an RHC practitioner. RHC services appear on outpatient Medicare claims.

An RHC claim is similar in many ways to an FQHC claim, but it does not contain RHC-specific HCPCS codes. Instead, it will contain a line item with the HCPCS code describing the reason for the visit, and the entire Medicare payment for the visit will be on that line. There may be additional lines for services that do not require a co-insurance or deductible, but these services will always have a zero-dollar paid amount. There may also be additional line items on the claim for separately billable services, such as lab services, which will have positive Medicare payments.

Bill type codes were 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.

Unbundling Spending

For all claim types, charged amounts from the bundled lines were used to distribute the bundled payment on the claim. The bundled payments were allocated to each bundled line according to the proportion of the charged amount. For example, if one line on a bundled claim accounted for

25 percent of the overall charges from the bundled lines on that claim, 25 percent of the bundled payment was allocated to that line.

Below is an example of how the unbundling process is handled in RBCS.

Table 5: Unbundling Bundled Payments Example

Claim Line	HCPCS Code	Provider Payment Amount	Charged Amount	Percent of Charged Amount	Unbundled Paid Amount
1	71046	$0	$266	4%	$88
2	78452	$0	$3287	47%	$1087
3	99284	$2096	$915	13%	$303
4	96413	$233	$833	12%	$275
5	93017	$0	$864	12%	$286
6	A9500	$0	$877	12%	$290

Lines 3 – 4: Bundled Payments
Lines 1 – 6: Bundled Codes

For claims with more than one bundled payment, the bundled payment was summed and divided among the bundled claims as if the lines were paid as part of a single bundle. This was only done for APC claims; FQHC and RCH claims only have one payment per claim.

RBCS Assignment Effective and End Dates in the Taxonomy File

In the previous iterations of the RBCS taxonomy file, the RBCS Assignment Effective Date was based on the year the taxonomy was released. For example, in the 2020 RBCS Taxonomy the RBCS Assignment Effective Date was set to 01/01/2020 – in reference to the year the taxonomy was released. The RBCS Assignment End Date was defined as the date that the RBCS assignment in the record become inactive. For example, in the 2020 RBCS Taxonomy, the RBCS Assignment End Date was set to 12/31/9999 because none of the assignments were inactive.

The RBCS Assignment Effective and End Dates have been modified in the current iteration of the RBCS taxonomy file to align with the timespan of the claims reviewed when constructing the taxonomy. For example, the 2022 RBCS taxonomy update used claims data with dates of service between 01/01/2016 and 12/31/2020. Any assignments that are new to this version of the taxonomy, either because the previous assignment was updated or because the HCPCS code is new, will have effective dates of 01/01/2016 and end dates of 12/31/2020.

Assignments carried over from previous years will have effective dates equal to the first year the classification was made. Assignments that were changed will have end dates equal to the end date in the last iteration of the file. For example, an assignment originally established in the 2020 RBCS Taxonomy, carried over into the 2021 RBCS Taxonomy, but modified in the 2022 RBCS Taxonomy, will have an effective date of 01/01/2014 (the first year the classification was made) and an end date of 12/31/2019 (the end date from the 2021 taxonomy file). The new assignment for that HCPCS code will have an effective date of 01/01/2016 and an end date of 12/31/2022. The timespans used for each iteration of the RBCS taxonomy are presented in ***Table 6***.

Table 6: RBCS Taxonomy Timespans

RBCS ID Assignment Year	Part B Healthcare Services 5-year Period	RBCS Assignment Effective Date	RBCS Assignment End Date
2020	2014 – 2018	01/01/2014	12/31/2018
2021	2015 – 2019	01/01/2015	12/31/2019
2022	2016 – 2020	01/01/2016	12/31/2020

ADDITIONAL ISSUES REVIEWED IN THE CURRENT YEAR

Alternative Payment Models (APMs)

An alternative payment model (APM) deviates from traditional Medicare FFS by adding incentive payments or restructuring how care is paid to motivate healthcare providers to provide higher-quality and more cost-efficient care. APMs can apply to a specific clinical condition, episode of care, medical specialty, site of care, or population. ***Appendix B: Overview of Medicare APMS*** provides an overview of the different types of Medicare APMs. For Medicare Part B services, Medicare's payment incentives under current APMs can be billed and paid for (1) prospectively (prior to the provision of services) within the traditional PFS and Hospital Outpatient Prospective Payment System (OPPS) or other FFS reimbursement systems, (2) retrospectively (payment is reconciled after the provision of services) within the PFS and OPPS, or (3) by lump sum payments (prospective or retrospective) made outside of the PFS and OPPS. Because some APMs will likely impact FFS claims, there is the potential for APMs to influence the RBCS classification process.

Potential Impact of APMs on the RBCS

The RBCS can be impacted by APMs in two ways. First, some HCPCS codes may not make it into the RBCS because HCPCS codes are only included in a given RBCS revision if they can account for greater than zero dollars in allowed spending. If a HCPCS code is always used as part of an APM but is never associated with spending in the claims data, it will not be included in the RBCS revision process. Second, some families may not be created because Part B spending is used in the family determination process to select family "start" codes (highest spending codes accounting for 90 percent of non-anesthesia related allowed spending) and to consolidate codes into families (a family must account for at least 0.1 percent of non-anesthesia related allowed spending). The extent to which APMs divert allowed spending away from claims data could prevent the consolidation of some RBCS families.

One example of a model that would impact the RBCS is the Primary Care First (PCF) APM, which began in January 2021. A Medicare beneficiary's primary care doctor will receive one flat payment that covers most of the primary care services furnished to

the beneficiary which can be partially offset by lower FFS billing for each visit. Under this model, primary care practices receive a prospective risk-adjusted population-based payment paid in a per member per month (PMPM) lump sum outside of Medicare's FFS system, a primary care visit flat fee for qualified evaluation and management (E&M) services that is paid within Medicare's FFS system, and a retrospective performance-based adjustment to their primary care revenue paid outside of Medicare's FFS system. The flat visit fee will affect Part B FFS claims, and subsequently the RBCS process, because the claim line with the qualified E&M HCPCS code will show the flat visit fee paid amount and other services provided in the same visit will have zero-dollar paid amounts on those claim lines.

Currently, Medicare APMs have very little impact on the RBCS. Most currently active Medicare APMs involve retrospective FFS payments that do not affect the amount paid and shown on Part B FFS claims. The Health Care Payment Learning & Action Network (HCPLAN) APM framework, which classifies APMs into four categories and eight subcategories, indicates that in contract year 2020, approximately 57 percent of Medicare payments were still made under Category 1 APMs (FFS with no link to quality and value) or Category 2 APMs (FFS with some link to quality and value), and 38 percent were made under Category 3 APMs (APMs built on FFS architecture, including APMs with downside risk and/or shared savings). Only five percent of Medicare payments were made under Category 4 APMs (population-based payment).[1] Because most Medicare services (outside of Medicare Advantage plans) are still furnished under the traditional FFS payment, Medicare APMs have at most a minimal impact on the RBCS taxonomy.

Although Medicare APM restructured payments currently do not appear to have a significant impact on the RBCS process, it is important to continue to monitor how Medicare APM payment methodologies affect Part B FFS claims. In particular, if performance-based bonuses and recoupments made outside of the Medicare FFS system become more substantial, this could impact family creation and retention as less Medicare spending is captured by Part B FFS claims.

[1] See: APM Measurement Methodology and Results Report (hcp-lan.org).

Addressing Potential APM Impacts on the RBCS

APMs with alternative payment methodologies that could affect Part B claims are not yet widespread enough to disrupt RBCS processing. Medicare APM payments or recoupments made outside of the FFS claim systems may be the most difficult to manage because they are not tied directly to any service, or often not tied to sets of services, particular patients, providers, or care settings. To the extent that these external amounts do not distort relative spending on Medicare Part B services, they do not impact grouping of healthcare service codes into clinically meaningful categories and subcategories.

RBCS 2022 UPDATE PROCESS

This section of the report provides details of the 2022 update process.

RBCS Update Steps

The steps below were performed for the 2022 RBCS update.

1. Extract HCPCS codes from carrier, DME, and outpatient claims submitted in the VRDC between January 1, 2016, and December 31, 2020.
2. Identify and unbundle FQHC, RHC, and APC bundled claim payments.
3. Retain HCPCS codes with positive allowed spending[3] over the five-year timeframe or HCPCS codes billed as part of a bundled payment.
4. Apply the RBCS codes from the previous year to the new file.
5. Identify HCPCS codes that were not classified in the previous year.
6. Add category and subcategory classifications to any new HCPCS codes.
7. Identify newly added HCPCS codes for families, review HCPCS codes to determine if new families need to be created, review retired and replacement HCPCS codes, and identify existing families that do not meet the spending threshold and begin the five-year retention period.
8. Identify major and non-major procedures and begin the three-year retention period for HCPCS codes that do not meet the major procedure requirements.
9. Apply quality assurance checks.
    a. Spot checks
    b. HCPCS Add-on code checks
10. Finalize taxonomy for TEP review.
11. Conduct TEP review of revised taxonomy.
12. Finalize RBCS taxonomy for the current year.
13. Submit the *RBCS Final Report* to CMS.

[3] 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 the other claims tables do not have a field for specifically captured allowed amounts.

HCPCS Codes and Captured Spending

Statistics for the current and prior years are shown in **Table 7**. In 2022, a total of 13,759 distinct HCPCS codes were classified by the RBCS taxonomy. Of these HCPCS codes, 347 were new to the 2022 revision, and 236 from the 2021 RBCS taxonomy were not reviewed in the 2022 RBCS taxonomy update either because they were retired or because they didn't capture any spending in the data. The 2022 revision also saw a decrease of $5 billion in total spending captured.

Table 7: High-Level RBCS Statistics Across the Most Recent Three Years

	2020	2021	2022
Years Captured	2014-2018	2015-2019	2016-2020
HCPCS Codes Classified	13,414	13,648	13,759
Total Allowed Spending Captured	$1,109 billion	$1,154 billion	$1,149 billion
New HCPCS Codes	N/A	599	347
HCPCS Codes Not Carried Over	N/A	365	236
Spending Attributed to New HCPCS Codes	N/A	$4,991 million	$3,737 million

The top ten new HCPCS codes in terms of spending and HCPCS code frequency are listed in ***Table 8*** and ***Table 9***. The majority of the highest spending and most frequent HCPCS codes are for injections and COVID-19 related services.

Table 8: Top Ten New HCPCS Codes in Terms of Spending

HCPCS Code	Description
U0003	Infectious agent detection by nucleic acid (DNA or RNA); severe acute respiratory syndrome coronavirus 2 (sars-cov-2) (coronavirus disease [covid-19]), amplified probe technique
U0004	2019-ncov coronavirus, sars-cov-2/2019-ncov (covid-19), any technique, multiple types or subtypes (includes all targets), non-CDC
90694	Influenza virus vaccine, quadrivalent (aIIV4), inactivated, adjuvanted, preservative free, for injection into muscle, 0.5 ml dosage
G2025	Payment for a telehealth distant site service furnished by a rural health clinic (RHC) or federally qualified health center (FQHC) only
G2067	Medication assisted treatment, methadone; weekly bundle including dispensing and/or administration, substance use counseling, individual and group therapy, and toxicology testing
G2066	Interrogation device evaluation(s), (remote) up to 30 days; implantable cardiovascular physiologic monitor system, implantable loop recorder system, or subcutaneous cardiac rhythm monitor system, remote data acquisition(s), receipt of transmissions and technician review, technical support and distribution of results

HCPCS Code	Description
J0896	Injection, luspatercept-aamt, 0.25 mg
J0179	Injection, brolucizumab-dbll, 1 mg
C9062	Injection, daratumumab 10 mg and hyaluronidase-fihj
87635	Amplified DNA or RNA probe detection of severe acute respiratory syndrome coronavirus 2 (covid-19) antigen

Table 9: Top Ten New HCPCS Codes in Terms of Code Frequency

HCPCS Code	Description
U0003	Infectious agent detection by nucleic acid (DNA or RNA); severe acute respiratory syndrome coronavirus 2 (sars-cov-2) (coronavirus disease [covid-19]), amplified probe technique
90694	Influenza virus vaccine, quadrivalent (aIIV4), inactivated, adjuvanted, preservative free, for injection into muscle, 0.5 ml dosage
U0004	2019-ncov coronavirus, sars-cov-2/2019-ncov (covid-19), any technique, multiple types or subtypes (includes all targets), non-CDC
G2025	Payment for a telehealth distant site service furnished by a rural health clinic (RHC) or federally qualified health center (FQHC) only
C9803	Hospital outpatient clinic visit specimen collection for severe acute respiratory syndrome coronavirus 2 (sars-cov-2) (coronavirus disease [covid-19]), any specimen source
87635	Amplified DNA or RNA probe detection of severe acute respiratory syndrome coronavirus 2 (Covid-19) antigen
U0002	2019-ncov coronavirus, sars-cov-2/2019-ncov (covid-19), any technique, multiple types or subtypes (includes all targets), non-CDC
86769	Measure of severe acute respiratory syndrome coronavirus 2 (Covid-19) antibody
87426	ELISA detection of severe acute respiratory syndrome coronavirus 2 (Covid-19) antigen
G2066	Interrogation device evaluation(s), (remote) up to 30 days; implantable cardiovascular physiologic monitor system, implantable loop recorder system, or subcutaneous cardiac rhythm monitor system, remote data acquisition(s), receipt of transmissions and technician review, technical support and distribution of results

Categories and subcategories for new HCPCS codes are listed in ***Table 10***. As shown, the subcategory with the highest spending was for molecular testing, which captured $1.6 billion in spending for new HCPCS codes.

Table 10: Highest Spending Categories and Subcategories for New HCPCS Codes

Category	Subcategory	Total New HCPCS Codes	Total Allowed Amount for New HCPCS Codes ($M)
Test	Molecular Testing	54	$1,609
Treatment	Injections and Infusions (nononcologic)	37	$826
E & M	Behavioral Health Services	21	$248
E & M	Office/Outpatient Services	10	$234
Treatment	Chemotherapy	12	$213
Test	General Laboratory	22	$149
Test	Cardiography	4	$119
Imaging	Nuclear	10	$85
Test	Neurologic	27	$77
Procedure	Musculoskeletal	18	$29

Category, Subcategory, and Family Modifications

As noted earlier, part of the RBCS update process involves reviewing HCPCS code assignments to ensure they are categorized accurately. During this review process, the decision was made to re-name the “Pulmonary Function” subcategory to “Pulmonary” and create a “Pulmonary Function” family within the new “Pulmonary” subcategory. Additionally, the decision was made to expand the “Blood Glucose Test or Reagent Strips” to include diabetic monitoring systems. This expanded family has been named “Diabetic Supplies and Monitoring.”

The count of HCPCS codes that switched positions from the 2021 RBCS Taxonomy in the 2022 RBCS taxonomy are presented in ***Table 11***. As indicated, 815 HCPCS codes were reclassified. Of the 63 HCPCS codes that switched subcategory, 43 switched from the “Pulmonary Function” subcategory to the “Pulmonary” subcategory. Of the seven codes that switched families, four switched from the previous “Blood Glucose Test or Reagent Strips” family to the “Diabetic supplies and monitoring” family.

Table 11: Count of 2022 HCPCS Codes that Switched Places in the RBCS Taxonomy

RBCS Taxonomy Modifications	# of Codes
HCPCS Codes moved from “No RBCS Family” to a Family	682
HCPCS Codes Switched from One Family to Another Family	7
HCPCS Codes that Only Switched Subcategory and Family*	63
HCPCS Codes that Switched Category, Subcategory, and Family*	63
Total	815

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

Count of Categories, Subcategories, and Families

The category, subcategory, and family counts for the 2021 RBCS taxonomy are presented in ***Table 12***. No new categories were introduced in 2022. The “Pulmonary Function” subcategory

was retired and replaced by the "Pulmonary" subcategory so that a "Pulmonary Function" family could be created.

Table 12: RBCS Category, Subcategory, and Family* Counts

RBCS Taxonomy	2020	2021	2022
Total Categories	8	8	8
Total Subcategories	52	52	52
Total Families	158	158	172**
New Categories	0	0	0
New Subcategories	0	0	1
New Families	0	0	15
Families Retained†	0	5	14
Categories Not Carried Over	0	0	0
Subcategories Not Carried Over	0	0	1
Families Not Carried Over	0	0	1

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

The 2022 taxonomy contains 15 new families. The "Blood Glucose Test or Reagent Strips" family was the only family retired and replaced by the "Diabetic Supplies and Monitoring" family. Statistics for the new families are provided in ***Table 13***.

Table 13: Families Introduced in the 2022 RBCS Taxonomy

Category	Subcategory	Family	Total Codes	Total Spending ($M)
Durable Medical Equipment (DME)	Medical/Surgical Supplies	Skin Allograft	98	$1,670
DME	Orthotic Devices	Implantable Joint Device	1	$1,580
DME	Other DME	Cardiac Catheter	19	$4,128
DME	Other DME	Cardiac Stent	5	$1,555
DME	Other DME	Cardioverter – Defibrillator	9	$4,972
DME	Other DME	Diabetic Supplies and Monitoring	14	$2,136
DME	Other DME	Implantable Neurostimulator	13	$2,922
DME	Other DME	Orthopedic Screw	1	$1,179
DME	Other DME	Pacemaker	11	$2,174
DME	Wheelchairs	Wheelchair Accessories	137	$1,393
Imaging	Standard X-ray	Contrast Agent	17	$1,202

Category	Subcategory	Family	Total Codes	Total Spending ($M)
Procedure	Breast	Breast Biopsy	20	$1,143
Procedure	Skin	Removal or Shaving of Skin Growth	17	$1,490
Test	Molecular Testing	Category: Genetic Analysis	343	$5,867
Test	Pulmonary	Pulmonary Function Testing	18	$1,171

Families in the Retention Period

Eleven families failed to meet the family identification requirements and were flagged to begin the five-year retention period as identified in ***Table 14***. These families will be retained for five years or until all HCPCS codes within a family are retired from the data. Three families are now in retention year two. The retention period was first implemented in 2021 so no families are in the three-year, four-year, or five-year retention periods.

Table 14: Family Retention Period Monitoring

Family Retention Period	2021	2022
1-Year Retention	5	11
2-Year Retention	0	3
3-Year Retention	0	0
4-Year Retention	0	0
5-Year Retention	0	0
Families Dropped – Expired	0	0
Families Dropped – Other*	0	1

** Families will be dropped if all HCPCS codes within the family are no longer found in the data or if all codes are assigned to a more suitable family.*

HCPCS Codes and Spending Captured by Named Families

Given the nature of the family identification process, most HCPCS codes are not assigned to a code family. Only groups of related HCPCS 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 are assigned to an RBCS code family. Most HCPCS codes are not able to meet this criterion. However, because spending is used as part of the family creation process, RBCS code families did capture most of the spending in 2022. The breakdown by spending can be found in ***Table 15***.

Table 15: HCPCS Codes and Spending Captured by Code Families

Code Families	2020	2021	2022
Number of Families	158	158	172
Codes Assigned to a Family	4,069	4,299	5,149
Percent of Codes Accounted for by Code Families	30.3%	31.5%	37.4%
Total Spending Captured	$981B	$1,022B	1,033B
Percent of Total Spending Captured	88.5%	88.5%	89.9%

Major Procedures

A comparison of major procedure HCPCS code count is presented in ***Table 16***. A total of 3,480 HCPCS codes were identified as major procedure HCPCS codes in 2022, a slight increase from the 3,470 HCPCS codes identified as major procedures in 2021. In both years, a similar number of HCPCS codes were identified using RVUs (2,681 in 2021 vs. 2,678 in 2022) and service setting (468 in 2021 vs. 463 in 2022) and by checking addon codes against primary codes (111 in 2021 vs. 115 in 2022).

Table 16: HCPCS Codes Identified as Major Procedures

Major Procedures	2020	2021	2022
Total Major Procedures	3,485	3,470	3,480
% of HCPCS Codes in Procedures Category	55.9%	55.7%	55.8%
Major Procedures Identified Using RVUs Alone	2,692	2,681	2,678
Major Procedures Identified Using Service Setting*	672	468	463
Major Procedures Identified as Add-On Codes	121	111	115
Major Procedures Retained	0	210	224

** Includes "unlisted" HCPCS codes.*

Major Procedures in the Retention Period

In 2022, 25 major procedures entered year one and 199 major procedures entered year two of the three-year major procedure retention period as seen in ***Table 17***. These HCPCS codes will be retained for three years or until they are no longer found in the data.

Table 17: Major Procedure Retention Period Monitoring

Major Procedure Retention Status	2021	2022
1-Year Retention	210	25
2-Year Retention	0	199
3-Year Retention	0	0
Major Procedures Changed to Other	0	0
Other Procedures Changed to Major	1	10
Major Procedures Changed to "N"*	0	0

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

CONCLUSION

The RBCS update process saw the addition of new HCPCS codes and the introduction of 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 code assignments improved the accuracy of the overall taxonomy.

Spending and Code Count by Subcategory

The full breakdown of spending by subcategory can be found in Tables 18 through 25.

Table 18: Spending and Utilization by Subcategory in 2021 RBCS Update – Anesthesia

Subcategory	Allowed Spending (Millions)	% of Allowed Spending	Total Codes	% of Codes
Anesthesia	$14,001	1.22%	293	2.13%

Table 19: Spending and Utilization by Subcategory in 2021 RBCS Update – Durable Medical Equipment (DME)

Subcategory	Allowed Spending (Millions)	% of Allowed Spending	Total Codes	% of Codes
Drugs Administered through DME	$5,558	0.48%	62	0.45%
Hospital Beds	$437	0.04%	37	0.27%
Medical/Surgical Supplies	$4,489	0.39%	369	2.68%
Orthotic Devices	$17,069	1.49%	1016	7.38%
Other DME	$34,254	2.98%	450	3.27%
Oxygen and Supplies	$4,220	0.37%	20	0.15%
Wheelchairs	$3,276	0.29%	287	2.09%

Table 20: Spending and Utilization by Subcategory in 2021 RBCS Update – Evaluation and Management (E&M)

Subcategory	Allowed Spending (Millions)	% of Allowed Spending	Total Codes	% of Codes
Behavioral Health Services	$11,975	1.04%	109	0.79%
Care Management/Coordination	$3,347	0.29%	51	0.37%
Critical Care Services	$7,494	0.65%	18	0.13%
E&M – Miscellaneous	$459	0.04%	81	0.59%
Emergency Department Services	$33,793	2.94%	14	0.10%
Home Services	$2,330	0.20%	21	0.15%
Hospice	$16	0.00%	2	0.01%
Hospital Inpatient Services	$50,367	4.38%	18	0.13%
Nursing Facility Services	$14,703	1.28%	28	0.20%
Observation Care Services	$8,510	0.74%	12	0.09%
Office/Outpatient Services	$143,629	12.50%	77	0.56%
Ophthalmological Services	$12,703	1.11%	32	0.23%

Table 21: Spending and Utilization by Subcategory in 2021 RBCS Update – Imaging

Subcategory	Allowed Spending (Millions)	% of Allowed Spending	Total Codes	% of Codes
CT Scan	$27,507	2.39%	77	0.56%
Imaging – Miscellaneous	$2,286	0.20%	20	0.15%
Magnetic Resonance	$11,900	1.04%	98	0.71%
Nuclear	$16,228	1.41%	226	1.64%
Standard X-ray	$26,566	2.31%	351	2.55%
Ultrasound	$24,215	2.11%	127	0.92%

Table 22: Spending and Utilization by Subcategory in 2021 RBCS Update – Other

Subcategory	Allowed Spending (Millions)	% of Allowed Spending	Total Codes	% of Codes
Ambulance	$33,109	2.88%	20	0.15%
Enteral and Parenteral	$2,306	0.20%	41	0.30%
Vision, Hearing, and Speech Services	$2,239	0.19%	155	1.13%

Table 23: Spending and Utilization by Subcategory in 2021 RBCS Update – Procedures

Subcategory	Allowed Spending (Millions)	% of Allowed Spending	Total Codes	% of Codes
Breast	$2,570	0.22%	60	0.44%
Cardiovascular	$25,298	2.20%	477	3.47%
Digestive/Gastrointestinal	$24,325	2.12%	729	5.30%
Eye	$24,227	2.11%	303	2.20%
Hematology	$2,068	0.18%	68	0.49%
Musculoskeletal	$47,386	4.13%	2006	14.58%
Other Organ Systems	$22,494	1.96%	1718	12.49%
Skin	$28,432	2.48%	429	3.12%
Vascular	$19,145	1.67%	448	3.26%

Table 24: Spending and Utilization by Subcategory in 2021 RBCS Update – Tests

Subcategory	Allowed Spending (Millions)	% of Allowed Spending	Total Codes	% of Codes
Anatomic Pathology	$13,775	1.20%	102	0.74%
Cardiography	$9,792	0.85%	92	0.67%
General Laboratory	$49,228	4.29%	1093	7.94%
Molecular Testing	$9,974	0.87%	479	3.48%
Neurologic	$5,958	0.52%	137	1.00%
Pulmonary	$1,869	0.16%	43	0.31%
Test – Miscellaneous	$1,229	0.11%	105	0.76%

Table 25: Spending and Utilization by Subcategory in 2021 RBCS Update – Treatments

Subcategory	Allowed Spending (Millions)	% of Allowed Spending	Total Codes	% of Codes
Chemotherapy	$75,193	6.55%	235	1.71%
Dialysis	$67,117	5.84%	88	0.64%
Injections and Infusions (nononcologic)	$118,184	10.29%	720	5.23%
Physical, Occupational, and Speech Therapy	$46,744	4.07%	66	0.48%
Radiation Oncology	$22,739	1.98%	131	0.95%
Spinal Manipulation	$3,780	0.33%	8	0.06%
Treatment – Miscellaneous	$8,124	0.71%	110	0.80%

APPENDIX A: RBCS FAMILIES

- Category

- Drugs Administered through DME
  - Bronchodilator
  - Vasodilator
- Medical/Surgical Supplies
  - Skin Allograft
- Orthotic Devices
  - Below Knee Orthotic
  - Implantable Joint Device
  - Intermittent Urinary Catheter
  - Knee Orthosis
  - Lumbar Sacral Orthosis (LSO 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

- Behavioral Health Services
  - Psychotherapy – Group
  - Psychotherapy – Nongroup
- Care Management/Coordination
  - Chronic & Transitional Care Management
- Critical Care Services
  - Critical Care E&M
- Emergency Department services
  - ED 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
  - HOPD E&M – Facility Fee
  - Office E&M – Established
  - Office E&M – New
- Ophthalmological Services
  - Ophthalmological E&M

- 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

Ambulance
- Medical Transport – Air
- Medical Transport – Ground
- Medical Transport – Ground Emergency
- Medical Transport – Mileage

Enteral & Parenteral
- Enteral Feeding and Formula
- Parenteral Feeding and Formula

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 v Laparoscopic
- Colonoscopy – Lesion Removal
- Hernia Repair – Laparoscopic (any site)
- Hernia Repair – Open (Inguinal)
- Lower GI Endoscopy – Other
- Upper GI Endoscopy

Eye
- Cataract Surgery
- 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

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

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
- Genetic Analysis
- Infectious Agent Detection by DNA/RNA

Neurologic
- Electrical Nerve Conductivity
- Sleep Study

Pulmonary
- Pulmonary Function Testing

Chemotherapy
- Chemotherapeutic Agent
- Chemotherapy Administration

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

Injections and Infusions (nononcologic)
- 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 – TNF blocker
- Injection – Vasodilator
- Injection Administration
- Intravenous Infusion, Hydration
- 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 (IMRT)
- Radiation Treatment Planning

Spinal Manipulation
- Chiropractic

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

APPENDIX B: OVERVIEW OF MEDICARE APMS

Medicare APMS – Medical Home/Primary Care

Model	(Anticipated) Start Date	Payment Arrangement	Payment Type	FFS Claims Impact
CPC+, Maryland PCP	01/2017, 01/2019	PBPM non-visit-based payment (CMF, PBIP)	Prospective	No FFS Impact
CPC+, Maryland PCP	01/2017, 01/2019	Hybrid non-visit-based payment (CPCP)	Prospective/ Concurrent	No FFS Impact/ Discounted FFS
Primary Care First (PCF)	01/2021	PBPM non-visit-based payment	Prospective	No FFS Impact
Primary Care First (PCF)	01/2021	Primary care visit flat fee	Concurrent	E&M FFS HCPCS codes
Primary Care First (PCF)	01/2021	Shared savings/losses	Retrospective	No FFS impact

Medicare APMS – Accountable Care Organization (ACO)

Model	(Anticipated) Start Date	Payment Arrangement	Payment Type	FFS Claims Impact
Medicare Shared Savings Program (MSSP), Next Generation ACO, Vermont Medicare ACO Initiative	2012, 01/2016, 01/2017	Shared savings/losses	Retrospective	No FFS impact
Comprehensive ESRD Care (CEC)	10/2015	Shared savings/losses	Retrospective	No FFS impact

**Except for Next Generation ACO's voluntary all-inclusive population-based payments*

Medicare APMS – Episodic/Bundled

Model	(Anticipated) Start Date	Payment Arrangement	Payment Type	FFS Claims Impact
Bundled Payments for Care Improvement (BPCI) Classic–Models 1, 2, 3	10/2013	Episode bundled payment	Retrospective	No FFS impact
BPCI-Classic–Model 4	10/2013	Episode bundled payment	Prospective	No-pay FFS claims (but still have allowed charges on PFS)
BPCI-Advanced	10/2018	Episode bundled payment	Retrospective	No FFS impact
Comprehensive Care for Joint Replacement (CJR)	04/2016	Episode bundled payment	Retrospective	No FFS impact

Model	(Anticipated) Start Date	Payment Arrangement	Payment Type	FFS Claims Impact
Oncology Care Model (OCM)	07/2016	Episode bundled payment	Retrospective	No FFS impact
Oncology Care Model (OCM)	07/2016	PBPM non-visit-based payment	Prospective	No FFS Impact
Oncology Care Model (OCM)	07/2016	Performance-based shared savings	Retrospective	No FFS Impact
Radiation Oncology (RO) Model	Not implemented	Episode bundled payment	Prospective	RO Model-Specific HCPCS codes on PFS or OPPS for start/end of episode
Radiation Oncology (RO) Model	Not implemented	Episode bundled payment	Prospective	No-pay FFS claims for services within start/end of episode (but still have allowed charges on PFS/uncertain for OPPS)

Medicare APMS – Capitated

Model	(Anticipated) Start Date	Payment Arrangement	Payment Type	FFS Claims Impact
Direct Contracting (DC) Model for Global and Professional Options; ACO REACH	04/2021, 01/2023	Primary Care Capitation (PCC)	Prospective	No FFS Impact (but there will be some no-pay, some discounted, and some 100% primary care FFS claims)
Direct Contracting (DC) Model for Global and Professional Options; ACO REACH	04/2021, 01/2023	Total Care Capitation (TCC)	Prospective	No FFS Impact (but there will be some no-pay, some discounted, and some 100% FFS claims)
Direct Contracting (DC) Model for Global and Professional Options; ACO REACH	04/2021, 01/2023	Optional advanced payment of estimated FFS non-primary care claims (for PCC)	Prospective	No FFS Impact (reconciled against claims at end of year)
Direct Contracting (DC) Model for Global and Professional Options; ACO REACH	04/2021, 01/2023	Shared savings/losses	Retrospective	No FFS Impact
Kidney Care Choices (KCC) Model – Kidney Care First (KCF) Option	01/2022	Performance-adjusted monthly and quarterly capitated payments	Prospective with retrospective performance adjustment	No FFS impact (but there could be some no-pay claims)
Kidney Care Choices (KCC) Model – Kidney Care First (KCF) Option	01/2022	Bonus payment for successful kidney transplant	Retrospective	No FFS impact

Model	(Anticipated) Start Date	Payment Arrangement	Payment Type	FFS Claims Impact
KCC – Comprehensive Kidney Care Contracting (CKCC) Graduated Option	01/2022	TCC monthly and quarterly capitated payments (Global Option)	Prospective	No FFS impact (but there could be some no-pay claims)
CKCC Professional Option	01/2022	Bonus payment for successful kidney transplant	Retrospective	No FFS impact
CKCC Global Option	01/2022	Shared savings/losses	Retrospective	No FFS impact
ESRD Treatment Choices (ETC) Model	01/2022	Payment adjustments to the adjusted ESRD PPS per treatment base rate to ESRD facilities required to participate	Concurrent	May see higher or lower current ESRD claim amounts
ESRD Treatment Choices (ETC) Model	01/2022	Payment adjustments to the monthly capitation payment (MCP) to managing clinicians required to participate	Concurrent	May see higher or lower current ESRD claim amounts
Home Health Value-Based Purchasing Model (Part B spending)	01/2016	Performance-based payment adjustments to the Home Health PPS base rate in participating states	Concurrent	May see higher Home Health Part B claim amounts