June 26, 2023

Anne Hubbard
Director of Health Policy
American Society for Radiation Oncology

RE: ROCR PROGRAM ANALYSIS

Dear Anne:

Wakely Consulting Group, LLC (Wakely) was retained by the American Society for Radiation Oncology (ASTRO) to assist in modeling potential program savings for a proposed Radiation Oncology Case Rate (ROCR) program. ASTRO is the largest radiation oncology society in the world, with nearly 10,000 members who specialize in treating cancer patients with radiation therapies.

The attached report presents our estimate that the proposed ROCR program is anticipated to produce savings of approximately $212 million over 2024 through 2028 as compared with costs under Medicare Fee-for-Service (FFS) for the same services. In the report, we describe the process we used to replicate the original CMS Radiation Oncology model as first proposed in September 2020, modify it according to ASTRO's specifications, and compare expected costs with projected Medicare FFS expenditures over 2024 through 2028.

Wakely does not intend to create a reliance to third parties and these materials may not be released to third parties without Wakely's prior written consent. If consent is granted, the materials should be provided in their entirety. We relied on information provided by ASTRO and LDS data to develop this analysis.

Please do not hesitate to call us if you have any questions or if we may be of additional assistance. Thank you for the opportunity to work on this important project.

Sincerely,

Tim Courtney, FSA, MAAA
7650 W. Courtney Campbell Causeway
Suite 1250
Tampa, FL 33607
727.259.7480 | timc@wakely.com

Oliver Smidt, ASA, MAAA
8000 S. Chester Street
Suite 650
Centennial, CO 80112
720.226.9816 | oliver.smidt@wakely.com

wakely.com

American Society for Radiation Oncology

Proposed ROCR Program Analysis

June 26, 2023

Prepared by:
Wakely Consulting Group, an HMA Company

Tim Courtney, FSA, MAAA
Principal & Senior Consulting Actuary

Oliver Smidt, ASA, MAAA
Associate Actuary

Table of Contents

Executive Summary

This report presents a financial projection of a proposed episode-based payment program for radiation oncology for Medicare beneficiaries called Radiation Oncology Case Rate (ROCR) proposed by the American Society for Radiation Oncology (ASTRO). ASTRO has published a companion document that provides a deeper description of the ROCR program and its goals. This report focuses on the details behind the financial characteristics of the program and related financial projections.

We estimate that the proposed ROCR program will save CMS approximately $212 million over the years 2024 – 2028 compared to reimbursement for the same services under the traditional Medicare Fee-for-Service (FFS) system. Exhibit 1 contains the national payment rates by cancer type and year for the proposed ROCR program. The next section of this report provides detail regarding the exact definition of the proposed ROCR program.

The savings and modeling in this report are based on our replication of CMS base rates initially published in a September 2020 Radiation Oncology Model Rule and later modified in the 2022 Medicare Physician Fee Schedule. In the proposed ROCR program, refinements to the September 2020 RO Model are made. These refinements include the removal of proton therapy services from the episode definition, application of specified trend that defines future payment levels, a proposed Health Equity Achievement in Radiation Therapy (HEART) adjustment that would increase payment rates based on social determinants of health, and a quality payment incentive based on accreditation status. The remainder of this reports details the methods, assumptions, and results underlying the projected expenses and savings associated with the proposed ROCR program.

Proposed ROCR Program Definition

The proposed ROCR program uses the September 2020 RO Model as its foundation, which is based on data from 2017 – 2019. Designed to be implemented in 2024, ROCR establishes a sustainable payment methodology that recognizes annual inflationary updates while also generating incremental savings through 2028 before transitioning to a flat savings rate of 3% each year into perpetuity. The following refinements are made to the RO Model to create the proposed ROCR program:

- Proton therapy services are excluded from the list of HCPS codes used to identify the qualifying radiation-oncology claims from which the cancer episodes are constructed. Appendix A contains the HCPCS codes used in the September 2020 RO Model and indicates which ones are proton codes.

- We apply trend based on Market Basket historical and forecasted data to the resulting cancer episodes to bring them forward to the 2024 – 2028 projection period. The section “Estimated ROCR Program and Comparable FFS Expenses” provides additional detail on our trend assumptions.

- We apply a HEART upward adjustment of $500 per episode to the technical component of the 2024 payment rates based on beneficiary transportation needs. The $500 increases by $10 each year to adjust for inflation. The section "Estimate of ROCR Program Savings" provides additional detail on the HEART adjustment.
- The resulting payment rates are then subject to a geographic adjustment based on the provider's location.
- The technical component of the geographically adjusted payment rates is subject to an accreditation adjustment of either +0.5% for accredited providers or -1.0% for non-accredited providers. The section "Estimate of ROCR Program Savings" provides additional detail on the accreditation adjustment.

Since the proposed ROCR program uses the September 2020 RO Model as its foundation, we attempted to replicate the published base rates as a means of validating our episode construction process. The next section discusses our replication process.

RO Model Base Rate Replication

Overview

To model the financial impact of the ROCR program, we began by approximating the September 2020 RO model base rates published by CMS using 2017 through 2020 Limited Data Set (LDS) Medicare FFS data. The LDS reflects a 5% sample of the Medicare FFS population, and as such will not precisely reproduce the original CMS RO base rates. The goal of this exercise was to ensure the model using LDS came close to replicating the published rates so that we could ensure our model was defined similarly to the calculations underlying CMS published base rates. We also ran our model on the 100% Medicare data to verify that the results were similar to those using the LDS data. Once we could reasonably replicate the CMS published rates, we could then proceed with refinements to that model based on ROCR components proposed by ASTRO.

The next two subsections compare our replication of the 2020 RO model base rates to the published base rates and how we built our replication of the base rates.

Results

Table 1 below provides a comparison of Wakely's replication model based on LDS with the RO model base rates published by CMS.

Table 1: Results of Wakely Replication of CMS Base Rates

	Wakely Replication			CMS Base Rates			Wakely/CMS Ratio		
Cancer Type	Professional	Technical	Case Count	Professional	Technical	Case Count	Professional	Technical	Case Count
Anal	$3,007	$16,306	171	$3,104	$16,801	3,455	0.97	0.97	4.9%
Bladder	$3,035	$15,008	247	$2,787	$13,556	4,944	1.09	1.11	5.0%
Bone Metastases	$1,416	$5,989	2,285	$1,446	$6,194	30,052	0.98	0.97	7.6%
Brain Metastases	$1,647	$8,886	1,253	$1,652	$9,879	22,991	1.00	0.90	5.4%
Breast	$2,032	$9,452	3,724	$2,060	$10,002	75,036	0.99	0.95	5.0%
Cervical	$2,729	$13,162	75	$3,037	$13,560	1,858	0.90	0.97	4.0%
CNS Tumors	$2,668	$15,480	308	$2,558	$14,762	7,313	1.04	1.05	4.2%
Colorectal	$2,509	$11,924	495	$2,508	$12,201	10,429	1.00	0.98	4.7%
Head and Neck	$2,959	$16,961	991	$3,108	$17,497	19,926	0.95	0.97	5.0%
Lung	$2,300	$12,435	2,877	$2,231	$12,142	71,282	1.03	1.02	4.0%
Lymphoma	$1,639	$7,507	525	$1,724	$7,951	11,751	0.95	0.94	4.5%
Pancreatic	$2,361	$13,561	240	$2,481	$13,637	5,241	0.95	0.99	4.6%
Prostate	$3,408	$20,721	2,619	$3,378	$20,416	52,305	1.01	1.01	5.0%
Upper GI	$2,679	$14,495	402	$2,667	$14,623	9,758	1.00	0.99	4.1%
Uterine	$1,894	$9,553	531	$2,737	$14,156	6,585	0.69	0.67	8.1%
Total	**$2,293**	**$12,132**	**16,743**	**$2,361**	**$12,712**	**332,926**	**0.97**	**0.95**	**5.0%**
Total using CMS Mix	**$2,344**	**$12,489**	**16,743**	**$2,361**	**$12,712**	**332,926**	**0.99**	**0.98**	**5.0%**

When viewed in aggregate, we consider our replication attempt to be a reasonable approximation of the CMS ROCR program. More specifically, we make the following observations based on the comparisons in Table 1.

- In aggregate, the Wakely case count is about 5% of the published case count in the base rates. This was expected since we would expect the LDS data to contain about 5% of the episodes contained in the base rates.
- In aggregate, Wakely professional and technical case rates are about 97% and 95% of the published case rates. The rates are even closer when we adjust for the mix of cancer types, 99% and 98% for professional and technical, respectively.
- By cancer type, the Wakely case count is between 4.0% and 8.1% of the published case counts.
- Wakely case rates by cancer type are between 90% and 109% (excluding Uterine cancer) of the published case rates for professional and between 90% and 111% (excluding Uterine cancer) of the published case rates.

Process and Assumptions

The replication of the September 2020 CMS RO model base rates consists of four key components: episode definition, cancer type assignment, calculation of professional and technical costs, and calculation of payment rates.

Episode Definition

The process of defining a RO episode began by first creating the universe of claims eligible for inclusion. These claims came from the 2017 – 2020 "Carrier" and "Outpatient" LDS data sets. The following additional restrictions were then applied to these claims:

- The HCPCS code had to be one of three "trigger codes" (77261, 77262, 77263) or had to be in the list of radiation oncology HCPCS codes published by CMS for the September 2020 RO Model. This list is included in Appendix A.
- Outpatient claims had to take place in a hospital and be classified as outpatient or other part B. This was accomplished by restricting the four-digit bill type code to be of the form 013X or 014X. We also included bill type code 085X for Level I intermediate care in a special facility or hospital ambulatory surgical center (ASC).
- Carrier claims had to take place in an office or outpatient hospital as indicated by place of service (POS) codes 11, 19, or 22.
- Carrier claims had to be rendered by a radiation oncology specialist as indicated by CMS specialty codes 30, 74, or 92.
- Carrier claims could not have been denied and had to be paid to either a physician, supplier, beneficiary, or physician assistant (PA) service. This was accomplished by restricting the claim payment denial code to 1, 2, 3, or 9.
- Claims rendered by providers located in Maryland, Vermont, foreign countries, and US territories were excluded due to known anomalies in the LDS data. Claims where the state was unknown were also excluded.
- Claims rendered by critical access hospitals or prospective payment system (PPS)-exempt cancer hospitals were excluded.
- Outpatient claims with partial hospitalization were excluded.
- Claims with an allowed amount of 0 were excluded.

Using our filtered set of claims, we then created a set of potential trigger claims. To qualify as a potential trigger claim, we applied the following criteria:

- A trigger claim must have one of the following three HCPCS codes: 77261, 77262, or 77263.
- At least one diagnosis code field on the claim had to be in the list of qualifying diagnoses published by CMS from the September 2020 RO model. This list is provided in Appendix B and can be found in the included August 2021 cancers code list published on the CMMI website.
- The claim had to have an incurred start date before 2020.

We further pared down our set of potential trigger claims to include only claims where the beneficiary had a radiation oncology "follow-up" technical service in our universe of claims within 28 days of the trigger claim. The technical HCPCS codes used to identify these qualifying "follow-up" services have a Technical Indicator value of 1 in Appendix A.

For each remaining potential trigger claim, we counted the number of claims with a technical service rendered within 90 days of the trigger claim that took place in a freestanding facility and in an outpatient hospital. We also counted the number of days between each potential trigger for each beneficiary.

For each beneficiary's first potential trigger, we constructed the full episode by pulling all claims from our universe of claims that took place within 90 days of the trigger. Each potential first episode was retained if the number of claims rendered in an outpatient hospital was at least as great as the number of claims rendered in a freestanding facility. If this criterion was not met, the episode was excluded.

We identified each beneficiary's second potential trigger by selecting the first trigger from our set of potential trigger claims that took place at least 118 days after the beneficiary's first potential trigger. The determination of the second potential trigger was based solely on the date of the first potential trigger, regardless of whether the first potential trigger was retained or excluded. The construction of the full episode for each potential second trigger was done in the same manner as the first trigger, as was the determination of whether to retain or exclude the episode. We repeated this process until there were no more potential triggers remaining within the period of claims used.

The retained episodes from this iterative process formed the set of episodes to which we applied an algorithm to determine cancer type. The next subsection describes the algorithm to determine cancer type for each episode.

Cancer Type Assignment

We started by creating a universe of claims from the 2016 – 2020 Carrier and Outpatient LDS data. A claim had to have a cancer diagnosis code and meet one of the following three conditions to be included in this universe of claims.

1) A carrier claim with an evaluation and management (EM) HCPCS code.

2) A carrier claim with a radiation treatment planning or treatment delivery HCPCS code not related to imaging guidance.

3) An outpatient claim with a radiation delivery (not planning) HCPCS code not related to imaging guidance. Note that just for outpatient, the cancer diagnosis had to be a principal diagnosis.

The list of cancer diagnosis codes used for cancer type determination is provided in Appendix C. It contains the same diagnosis codes used in the identification of potential trigger claims in Appendix B, plus additional codes for Kidney and Liver cancers. The list of EM HCPCS codes we used is provided in Appendix D. The list of radiation treatment planning and delivery HCPCS codes is provided in Appendix E.

For each trigger claim from the retained episodes described in the prior subsection, we pulled claims from the universe of cancer type assignment claims that took place up to 31 days before the trigger date or up to 30 days after the trigger date. The 31 day "lookback" applied just for EM claims; no lookback was applied for non-EM claims.

Using the cancer type assignment claims pulled for each episode, we determined which type(s) of cancer(s) were present on each claim line and computed the number of claim lines with each cancer type. From there, we established the following hierarchy to determine a single cancer type for each episode:

- If there were at least two claim lines with Brain Metastases or at least two claim lines with Bone Metastases, then the episode would be assigned to one of these two cancer types.
    - If the number of claims lines with Brain Metastases was the same or greater than the number of claim lines with Bone Metastases, the assignment for the episode was Brain Metastases.
    - Otherwise, the assignment for the episode was Bone Metastases.
- If neither Brain Metastases nor Bone Metastases had at least two claim lines, then the type of cancer with the greatest number of claim lines became the assigned cancer type for the episode.
- In the unusual event that two types of cancers had the same maximum number of claim lines, alphabetical order was used to break the tie.

After making the cancer type determination for each episode, we performed the final episode filtering. Episodes assigned to a cancer not among the 15 covered in the RO model were excluded, and episodes with any non-zero amount of Medicare as a Secondary Payer coverage were excluded.

We summarized the costs in the remaining episodes and compared them to the CMS RO model base rates. The next section describes how we computed the professional and technical components of the claims within these episodes.

Computation of Payment Rates

We split the allowed amount from each claim line into professional and technical components to compare to the published CMS base rates. We used the following logic to determine the components.

Professional:

- For carrier claims with a global HCPCS code, a POS code of 11 or 19, and no '26' to 'TC' modifier, we computed the professional component of the allowed amount using the HCPCS code's relative value units (RVUs) from the applicable Medicare Physician Fee Schedule (MPFS) at the time of the claim.
- For carrier claims with a global HCPCS code, a POS code of 11 or 19, and a '26' modifier, we set the professional component equal to the full allowed amount.
- For carrier claims with a global HCPCS code, a POS code of 11 or 19, and a 'TC' modifier, we set the professional component to 0.
- For any other carrier claim with a professional HCPCS code, we set the professional component equal to the full allowed amount.
- Note that for all the above criteria, we also required that the line processing indicator code have a value of 'A', 'I', or 'C'. If a claim line did not have any of these three line processing indicator codes, we set the professional component to 0.

Technical:

- For carrier claims with a global HCPCS code, a POS code of 11 or 19, and no '26' to 'TC' modifier, we computed the technical component of the allowed amount using the HCPCS code's relative value units (RVUs) from the applicable Medicare Physician Fee Schedule (MPFS) at the time of the claim.
- For carrier claims with a global HCPCS code, a POS code of 11 or 19, and a 'TC' modifier, we set the technical component equal to the full allowed amount.
- For carrier claims with a global HCPCS code, a POS code of 11 or 19, and a '26' modifier, we set the technical component to 0.
- For outpatient claims with a technical HCPCS code, we set the technical component equal to the full allowed amount.
- For any other carrier claim with a technical HCPCS code and a POS code of 11 or 19, we set the technical component equal to the full allowed amount.

The list of global HCPCS codes with RVUs by component for each year is provided in Appendix F. The professional HCPCS codes have a Professional Indicator value of 1 in Appendix A. The technical HCPCS codes have a Technical Indicator value of 1 in Appendix A.

After applying the above logic to determine the professional and technical components of each claim, we summarized our final episodes and compared them to the CMS base rates. The next section describes how we computed the case rates that we compared to CMS base rates.

Computation of Case Rates

At this step we have established our final set of episodes, cancer type assigned to each episode, and the professional and technical components of each claim. From this information we computed the episode count, average professional amount per episode, and average technical amount per episode for each cancer type in each year.

Using these figures, we applied an internal trending mechanism and a weighting mechanism to trend 2017 and 2018 to 2019 and to weight the results of the three years together. These brought the results onto a 2019 basis. Below is a description of each.

Internal Trending

For each year, we computed the composite professional and technical case rates across all 15 cancer types. We then computed the ratio of the 2019 composite case rates to the 2017 composite case rates and the ratio of the 2019 composite case rates to the 2018 composite case rates for the professional and technical components separately. We then multiplied the professional and technical case rates by cancer type for 2017 and 2018 by these factors to trend them to 2019. We did not apply trend to episode counts.

Table 2 below contains the trend factors we computed for each year.

Table 2: Internal Trending of Base Data to 2019

Trend Factors	Professional	Technical
2017	1.057	1.071
2018	1.026	1.004
2019	1.000	1.000

Weighting

The application of the above trend factors gives us trended case rates for professional and technical for each cancer type and year on a 2019 basis. We then calculated a weighted average professional and technical payment amount across the three years together for each cancer type by applying weights of 20%, 30%, and 50% for 2017, 2018, and 2019, respectively. We did not apply weighting to episode counts.

The result of these steps is a set of episode counts, professional case rates, and technical case rates by cancer type and in aggregate that are on a 2019 basis. These are the contents

summarized in Table 1 and the foundation for the projected ROCR program and comparable FFS expenses.

Estimated ROCR Program and Comparable FFS Expenses

Overview

We used the episodes described in the previous section and a variety of trend sources to estimate the proposed ROCR program episode costs in 2024 – 2028. We also estimated costs under the Medicare FFS system for those same episodes. The comparison of these two forms the foundation of how we estimated program savings.

Given the low volume and lack of national payment rate for proton services, the proposed ROCR program does not include proton services, as indicated in the definition of the proposed ROCR program provided earlier. To account for this in our modeling, we adjusted the episode definition presented in the previous section to remove these services. The removed proton HCPCS codes have a Proton Therapy Indicator of 1 in Appendix A.

The next two subsections describe our projected costs by RO episode for 2024 – 2028 under the proposed ROCR program and FFS systems and the assumptions and methods we used to derive those estimates.

Results

Table 3 shows our estimates of 2024 – 2028 episode costs under the preliminary proposed ROCR program and under FFS using the 2019 ROCR cancer case mix. Note that the ROCR program projected costs in Table 3 are preliminary in that they do not reflect an adjustment (described later) to be applied in order to achieve savings relative to FFS.

Table 3: Estimated Average ROCR Case Rates and Equivalent FFS Case Rates

Year	Preliminary Proposed ROCR Program	FFS	ROCR Program less FFS
2024	$16,288	$15,841	$447
2025	$16,755	$16,211	$545
2026	$17,217	$16,591	$626
2027	$17,688	$16,982	$706
2028	$18,172	$17,385	$787

- FFS rates are less than ROCR program rates due to the use of more aggressive trend assumptions used in the FFS estimates than in the ROCR program estimates.
- The preliminary ROCR program costs are based purely on historical episode costs in the 2017 – 2019 LDS data and assumed trends. Final ROCR program payment rates will be

adjusted such that over 2024 – 2028, the ROCR program will generate savings relative to FFS.

Process and Assumptions

We applied trend, re-pricing, and population projection assumptions to our 2017 – 2019 LDS episodes to bring them forward to 2024 – 2028. We also modified the episode definition to remove proton services. The sections below provide detail on these items.

Episode Definition

Appendix A contains the list of HCPCS codes from the September 2020 RO model that we used in our base rate replication. We removed the proton codes from the universe of claims used for constructing the episodes that inform the cost projections under both the proposed ROCR program and FFS scenarios. All other aspects of episode creation were identical to our replication of the CMS published base rates described in the prior section.

In producing our payment rate estimates under FFS, we used only the episodes with a trigger date in 2019. For the proposed ROCR program cost estimates, we continued to use 2017 – 2019.

Trend Sources and Application

To bring the 2017 – 2019 episodes forward to 2024 – 2028, we used a variety of trend sources. Our sources of trend varied between the proposed ROCR program and FFS. We will describe each one below.

Proposed ROCR Program

Tables 4a and 4b provide summaries of the trends used for the ***proposed ROCR program***. There is commentary below that describes how these trends were used and their sources.

Table 4a – Annual Trend Assumptions for Proposed ROCR Program – 2018 to 2023

Year	Outpatient Data	Carrier Data – Professional Component	Carrier Data – Technical Component
2018	2.1%	1.4%	2.1%
2019	2.1%	1.5%	2.1%
2020	2.6%	1.9%	2.6%
2021	2.4%	1.4%	2.4%
2022	2.0%	2.1%	2.0%
2023	3.8%	3.8%	3.8%
2017 LDS Data – Trend to 2021	**9.5%**	**6.3%**	**9.5%**
2018 LDS Data – Trend to 2022	**9.4%**	**7.1%**	**9.4%**
2019 LDS Data – Trend to 2023	**11.2%**	**9.5%**	**11.2%**

- The **Outpatient Data** and **Carrier Data – Technical Component** trends in Table 4a come from the Outpatient Hospital PPS section of the Market Basket History Web Table[1].
- The **Carrier Data – Professional Component** trends in Table 4a come from the Medicare Economic Index section of the Market Basket History Web Table.
- The trends in Table 4a were used to bring each year LDS data forward by four years. The overall four-year trends are summarized at the bottom of the table.

At this step, the 2017 – 2019 LDS data are on a 2021 – 2023 basis. The same internal trending and weighting mechanisms described in the RO Model Base Rate Replication section can be applied if the goal was to compute estimated proposed ROCR program payment amounts for 2023.

Table 4b – Annual Trend Assumptions for Proposed ROCR Program – 2022 to 2028

Year	Professional Component	Technical Component
2022	2.1%	2.0%
2023	3.8%	3.8%
2024	2.9%	3.0%
2025	2.7%	2.9%
2026	2.5%	2.8%
2027	2.4%	2.8%
2028	2.4%	2.8%
2017 LDS Data on 2021 Basis – Trend to 2026	**14.8%**	**15.4%**
2018 LDS Data on 2022 Basis – Trend to 2027	**15.1%**	**16.3%**
2019 LDS Data on 2023 Basis – Trend to 2028	**13.6%**	**15.1%**

- The **Professional Component** trends for 2022 and 2023 in Table 4b come from the Medicare Economic Index section of the Market Basket History Web Table.
- The **Technical Component** trends for 2022 and 2023 in Table 4b come from the Outpatient Hospital PPS section of the Market Basket History Web Table.
- The **Professional Component** trends for 2024 – 2028 in Table 4b come from the Medicare Economic Index section of the Market Basket Forecast Table.
- The **Technical Component** trends for 2024 – 2028 in Table 4b come from the Inpatient Hospital section of the Market Basket Forecast table.

[1] Market Basket history and forecast tables can be found here: https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/medicareprogramratesstats/marketbasketdata

- The trends in Table 4b were used to bring each year of LDS data forward by another 1 to 5 years. The overall five-year trends are summarized at the bottom of Table 4b. Combined with Table 4a, this would put the 2017 – 2019 LDS data on a 2026 – 2028 basis.

At this step, we applied 1 to 5 years of trend to the LDS data on a 2021 – 2023 basis to estimate proposed ROCR program episode costs for each year 2024 – 2028. For each projection year, we used the same internal trending and weighting mechanisms described earlier to bring each LDS year to a projection year basis. This produces the episode costs in the ROCR section of Table 3.

Comparable FFS Payments

Tables 5a and 5b provide a summary of the trends used for the estimated ***FFS payment rates***. There is commentary below that describes how these trends were used and their sources.

Table 5a – Annual Trend Assumptions for FFS Projection – 2020 to 2023

Year	Outpatient Data	Carrier Data
2020	2.6%	
2021	2.6%	
2022	2.0%	
2023	3.8%	re-priced to 2023Q1 MPFS
Four-Trend Trend to 2023	**11.5%**	**re-priced to 2023Q1 MPFS**

- The **Outpatient Data** trends are published CMS Outpatient FFS Unit Cost Trends.
- We used the 2023Q1 Medicare Physician Fee Schedule (MPFS) to re-price 2019 LDS **Carrier Data** to 2023.

At this step, the episodes with a 2019 trigger date have been rolled forward to 2023.

Table 5b – Annual Trend Assumptions for FFS Projection – 2024 to 2028

Year	Outpatient Data	Carrier Data
2024	2.8%	-0.5%
2025	2.8%	-0.5%
2026	2.8%	-0.5%
2027	2.8%	-0.5%
2028	2.8%	-0.5%

- The **Outpatient Data** trends for 2024 through 2028 are the published CMS Outpatient FFS Unit Cost Trend for 2024.
- For **Carrier Data** over 2024 to 2028, given that recent physician fee schedules changes have been flat or slightly negative, we assumed a slight negative trend for all five years.

At this step, the 2019 episodes on a 2023 basis have been rolled forward to 2024 – 2028. These are the equivalent FFS payments rates that are presented in Table 3.

Population Projection

We estimated the episode case counts for 2024 – 2028 by starting with our episode case counts from the 2019 LDS data, multiplying by 20, and applying trend factors. Table 6 shows the trend factor assumptions used to bring the 2019 LDS episode counts to 2024 – 2028.

Table 6 – Episode Case Count Trend Factors

Year	Trend from 2019 to Year
2024	1.013
2025	1.032
2026	1.060
2027	1.088
2028	1.117

These trend factors were based on a radiation oncology workforce forecast study[2] conducted by Health Management Associates (HMA). We applied these trends to each type of cancer as well as in aggregate, so we did not assume any change in cancer case mix in 2024 – 2028.

The projected episode case counts, payment rates under the proposed ROCR program, and the comparable FFS payment rates formed the starting point for our estimate of ROCR program savings during the five-year period 2024 – 2028.

Estimate of ROCR Program Savings

Overview

We used the projected episode case counts, ROCR program payment rates, and comparable FFS payment rates to estimate program savings during 2024 to 2028. Due to the use of higher trend assumptions under the proposed ROCR program compared to FFS, the preliminary ROCR program payment rates are higher than FFS payment rates.

To produce savings, the ROCR program includes annual savings adjustments. The final ROCR payments by year reflect an increasing adjustment rate phased in by year. These adjustments produce ROCR program payment rates estimated to be materially below FFS rates.

In our construction of the final ROCR program payment rates, we have assumed that a small portion of the nominal adjustment will be used to fund a HEART adjustment. For the HEART

[2] Comes from an appendix in the study "*Projected Supply and Demand for Radiation Oncologists in the U.S. in 2025 and 2030*", located here: https://www.redjournal.org/article/S0360-3016(23)00207-9/fulltext#seccesectitle0001

adjustment, episodes for eligible beneficiaries will be reimbursed at a higher payment rate than episodes for non-dual beneficiaries. The HEART funding will be added to the technical case rates.

In addition to a HEART adjustment, the proposed ROCR program adjusts the technical payments rates based on whether the provider is accredited. We estimate that accreditation will impact program savings by less than $5 million. Since this impact is relatively small and uncertain, it is not reflected in the savings estimates presented at the beginning of the report.

Results

Table 7 shows the calculation of estimated program savings for the proposed ROCR program relative to FFS. Savings estimates are highlighted in light blue; they are shown with and without HEART funding, and net and gross of sequestration. Accreditation is not reflected in Table 7.

Table 7 – Estimated Program Savings for Proposed ROCR Program

Year	2024	2025	2026	2027	2028	Total
Estimated Case Count	113,990	116,076	119,272	122,468	125,664	
Preliminary ROCR Program Episode Cost	$16,288.25	$16,755.42	$17,216.59	$17,687.73	$18,171.81	
Adjustment	-3.0%	-5.0%	-7.0%	-7.5%	-8.0%	
Adjusted ROCR Program Payment Rate	$15,799.60	$15,917.65	$16,011.43	$16,361.15	$16,718.07	
FFS Payment Rate	$15,841.48	$16,210.91	$16,591.05	$16,982.20	$17,384.67	
Savings per Case	$41.88	$293.26	$579.62	$621.04	$666.60	
Savings per Case Net of Sequestration	$41.04	$287.39	$568.03	$608.62	$653.27	
Percent Savings over FFS	0.3%	1.8%	3.5%	3.7%	3.8%	
Inflation Relative to 2024	1.00	1.02	1.04	1.06	1.08	
Total Savings Prior to HEART Funding - 2024 Basis	**$4,774,030**	**$33,372,630**	**$66,473,867**	**$71,753,164**	**$77,563,228**	**$253,936,919**
Total Savings Net of Sequestration Prior to HEART Funding - 2024 Basis	**$4,678,549**	**$32,705,177**	**$65,144,390**	**$70,318,101**	**$76,011,963**	**$248,858,181**
Heart Funding	$7,979,292	$8,287,860	$8,683,034	$9,087,157	$9,500,229	
Total Savings After HEART Funding - 2024 Basis	**($3,205,262)**	**$25,247,277**	**$58,124,796**	**$63,180,374**	**$68,766,720**	**$212,113,906**
Total Savings After HEART Funding Net of Sequestration - 2024 Basis	**($3,141,156)**	**$24,742,332**	**$56,962,300**	**$61,916,767**	**$67,391,386**	**$207,871,628**
Estimated ROCR Rates After HEART Funding - Non-Dual	$15,799.60	$15,917.65	$16,011.43	$16,361.15	$16,718.07	
Estimated ROCR Rates After HEART Funding - Dual	$16,299.60	$16,427.65	$16,531.43	$16,891.15	$17,258.07	

- The adjustments are designed to ease providers into taking larger savings to proposed ROCR program rates. From 2029 – 2033, the savings adjustment will be set at -3%, the adjustment used in 2024.
- The adjustments, applied over the course of 2024 – 2028, results in estimated program savings of approximately $250 million before removal of funds for HEART funding.
- The estimated savings after incorporating HEART funding is approximately $212 million.
- Estimated program savings increase from 0.3% of estimated equivalent FFS rates in 2024, to 3.8% in 2028.
- The amount of HEART funding is designed to keep case rates for non-dual beneficiaries the same and to increase the case rate for dual beneficiaries by $500 in 2024. The HEART payment increases by $10 per year for inflation.

Modeling Assumptions

As noted, the preliminary ROCR payments rates are adjusted annually in order to achieve savings in comparison with estimated FFS payments. Table 8 shows the increasing savings adjustment assumptions by year that we have modeled to produce the savings prior to HEART shown in Table 7.

Table 8 – Savings Adjustments by Year

Year	Adjustment to Estimated ROCR Rates
2024	-3.0%
2025	-5.0%
2026	-7.0%
2027	-7.5%
2028	-8.0%

HEART Adjustment

The HEART adjustment is designed to provide higher payments rates when the beneficiary is identified to need transportation support. We estimated the number of beneficiaries that would trigger a HEART payment adjustment based on the percentage of dual eligible beneficiaries in the Medicare population. Here, we have used the percent of dual eligible beneficiaries as a proxy for the percent of beneficiaries in need of transportation support. The proposed HEART adjustment for 2024 is $500 per case for any cancer type, applied to the Technical payment, and adjusted each year for inflation. To fund this extra per-case amount for identified beneficiaries, we used a portion of the savings shown in Table 7 such that the case rates for non-identified beneficiaries remain the same as the adjusted case rates in Table 7 prior to the HEART

adjustment. Table 9 shows the composite Technical case rates across cancer types with the HEART adjustment for dual beneficiaries, non-dual beneficiaries, and in total.

Table 9 – Estimated Average Technical Payment Rates after HEART Adjustment

Year	2024	2025	2026	2027	2028
Projected ROCR Program Case Count	113,990	116,076	119,272	122,468	125,664
Assumed National Dual Percentage	14%	14%	14%	14%	14%
HEART-Adjusted Case Rate - Non-Dual	$15,799.60	$15,917.65	$16,011.43	$16,361.15	$16,718.07
HEART-Adjusted Case Rate - Dual	$16,299.60	$16,427.65	$16,531.43	$16,891.15	$17,258.07
HEART-Adjusted Case Rate - Total	**$15,869.60**	**$15,989.05**	**$16,084.23**	**$16,435.35**	**$16,793.67**

Accreditation Adjustment

The accreditation adjustment is designed to provide incentives for technical providers to earn accreditation. The proposed accreditation adjustment is a 0.5% increase to final technical payment rates (after HEART) for accredited providers from 2024 – 2026 and a 1.0% decrease to final technical payment rates for non-accredited providers for 2027 – 2028. We estimate that accreditation will impact program savings by less than $5 million. This estimate assumes that 50% of technical providers have accreditation in 2024 and that another 5% become accredited in each subsequent year.

Impact by Provider

To assist ASTRO membership to understand radiation oncologist specific impact, Wakely has created an Excel tool that incorporates the ROCR program presented in this report. The tool is designed for individual providers to estimate the professional and technical case rates by cancer type they will receive under the proposed ROCR program. Instructions on how to use the tools are provided within the tools.

Table 10a provides an illustrative calculation of how to compute the estimated professional component of a bladder cancer case in 2024 for a professional-only provider located in Austin, TX serving a non-dual beneficiary.

Table 10a – Illustrative Calculation of Professional Component Case Rate

Year	2024
National Estimated ROCR Base Rate	$3,417.56
Base Rate Adjustment	-3.0%
Adjusted National Base Rate	$3,315.03
Dual Rate Add-On for HEART	$0.00
HEART-Adjusted National Base Rate	$3,315.03
Geographic Adjustment	1.005
Geographically Adjusted Rate	$3,331.54

Sequestration	-2%
Final ROCR Payment	**$3,264.91**
National FFS Equivalent Base Rate	$2,952.80
Geographic Adjustment	1.005
Sequestration	-2%
Final Equivalent FFS Payment	**$2,908.16**

Table 10b provides an illustrative calculation of how the compute the estimated technical component of a bladder cancer case in 2026 for an accredited facility-based provider located in Austin, TX that does not know its CMS Certification Number (CCN) and is serving a dual-eligible beneficiary.

Table 10b – Illustrative Calculation of Technical Component Case Rate

Year	2026
National Estimated ROCR Base Rate	$18,145.74
Base Rate Adjustment	-7.0%
Adjusted National Base Rate	$16,875.54
Dual Rate Add-On for HEART	$520
HEART-Adjusted National Base Rate	$17,395.54
Geographic Adjustment	0.960
Geographically Adjusted Rate	$16,705.63
Accreditation	0.5%
Sequestration	-2.0%
Final ROCR Payment	**$16,453.38**
National FFS Equivalent Base Rate	$17,287.28
Geographic Adjustment	0.960
Sequestration	-2%
Final Equivalent FFS Payment	**$16,269.63**

CMS makes a geographic adjustment to national payment rates to reflect cost differences from region to region. To illustrate the range of potential ROCR program case rates, we have provided a professional example and a technical example below for bladder cancer in 2024.

- For the professional component of a bladder cancer episode in 2024, the national adjusted base rate net of sequestration is estimated to be $3,417.56 * (1 – 3%) * (1 – 2%) = **$3,248.73**.
    - On the high end, San Benito County, CA, which has the largest work GPCI in the lower 48 states, would have a geographic adjustment of approximately 1.17, resulting in a professional component of $3,417.56 * 1.17 * (1 – 3%) * (1 – 2%) = **$3,802.77**.

  - On the low end, Mississippi, which has the smallest work and practice GPCIs in the country, would have a geographic adjustment of approximately 0.95, resulting in a professional component of $3,417.56 * 0.95 * (1 – 3%) * (1 – 2%) = **$3,088.37**.

- For the technical component of a bladder cancer episode in 2024, the national adjusted base rate net of sequestration for a non-dual beneficiary is estimated to be $17,154.03 * (1 – 3%) * (1 – 2%) = **$16,306.62**.
  - On the high end, Northbay Medical Center (CCN = 050367), which has one of the largest wage indexes in the 2023 Final Rule Outpatient Impact File, would have a geographic adjustment of approximately 1.54, resulting in a technical component of $17,154.03 * 1.54 * (1 – 3%) * (1 – 2%) = **$25,052.52**.
  - On the low end, Bella Vista Hospital (CCN = 400014), which has one of the smallest wage indexes in the 2023 Final Result Outpatient Impact File, would have a geographic adjustment of approximately 0.76, resulting in a technical component of $17,154.03 * 0.76 * (1 – 3%) * (1 – 2%) = **$12,405.75**.

Conclusion, Caveats, and Disclosures

Wakely developed this report on behalf of ASTRO to estimate program savings for the proposed ROCR program. Other uses may not be appropriate. We relied on information from ASTRO to develop the ROCR payment estimates in the report. While we reviewed the data provided for reasonableness, we did not audit or verify the data. If the data provided is inaccurate, our estimates and conclusion may be impacted.

Responsible Actuary. We, Tim Courtney and Oliver Smidt, are the actuaries responsible for this communication. We are Members of the American Academy of Actuaries. Tim is a Fellow of the Society of Actuaries, and Oliver is an Associate of the Society of Actuaries. We meet the Qualification Standards of the American Academy of Actuaries to issue this report. We completed this analysis using sound actuarial practice. To the best of our knowledge, the report and methods used in the analysis are in compliance with the appropriate Actuarial Standards of Practice with no known deviations. Outside parties receiving this work should retain their own experts and form their own opinions. Wakely does not intend to create a reliance to these outside parties and these materials may not be released to third parties without Wakely's prior written consent, and when consent is granted, the materials should be provided in their entirety.

Users of the results and the Excel tool should be qualified to use them and understand the results and the inherent uncertainty. There are no known relevant events subsequent to the date of information received that would impact the results of this report. Wakely provides actuarial services to a variety of clients throughout the health industry.

Our clients include commercial, Medicare, and Medicaid health plans, the federal and state governments, medical providers, and other entities that operate in the domestic and international health insurance markets. Wakely has implemented various internal practices to reduce or

eliminate conflict of interest risk in serving our various clients. The responsible actuaries are financially independent and free from conflict concerning all matters related to performing the actuarial services underlying this analysis. In addition, Wakely is organizationally and financially independent from ASTRO.

Scope of Services. Unless otherwise explicitly indicated, Wakely's work is limited to actuarial estimates and related consulting services. Wakely is not providing accounting or legal advice. ASTRO should retain its own experts in these areas. In addition, ASTRO is responsible for successful administrative operations of all of its programs, including those which are the subject of Wakely's actuarial work. If ASTRO is not able to successfully operate these programs at levels assumed in Wakely's estimates, and which may meet or exceed those of its competitors, actual results may vary adversely, potentially significantly. Further, Wakely strongly recommends that ASTRO carefully monitor emerging experience in order to identify and address issues as quickly and completely as possible.

Intended Users. This information has been prepared for the sole use of the management of ASTRO and cannot be distributed to or relied on by any third party without the prior written permission of Wakely. This information is confidential and proprietary.

Risks and Uncertainties. The assumptions and resulting estimates included in this report and produced by the model are inherently uncertain. Users of the results should be qualified to use it and understand the results and the inherent uncertainty. Actual results will likely vary, potentially materially, from our estimates. Wakely does not warrant or guarantee that ASTRO will attain the projected values included in the report. It is the responsibility of the organization receiving this output to review the assumptions carefully and notify Wakely of any potential concerns. The results presented in this report are DRAFT and may change.

Conflict of Interest. The responsible actuaries are financially independent and free from conflict concerning all matters related to performing the actuarial services underlying this analysis. In addition, Wakely is organizationally and financially independent to ASTRO.

Data and Reliance. We have relied on others for data and assumptions used in the assignment. We have reviewed the data for reasonableness but have not performed any independent audit or otherwise verified the accuracy of the data/information. If the underlying information is incomplete or inaccurate, our estimates may be impacted, potentially significantly.

Contents of Actuarial Report. This document and the supporting exhibits/files constitute the entirety of actuarial report and supersede any previous communications on the project.

Deviations from ASOPS. Wakely completed the analysis using sound actuarial practice. To the best of my knowledge, the report and methods used in the analysis are in compliance with the appropriate Actuarial Standards of Practice (ASOP) with no known deviations.

Appendices

Exhibit 1 - Proposed ROCR Model National Payment Rates by Cancer Type and Year

Year: 2024

Cancer Type	Professional Case Rate	Technical Case Rate
Anal	$3,386.79	$18,644.37
Bladder	$3,417.56	$17,154.03
Bone Metastases	$1,594.85	$6,838.15
Brain Metastases	$1,854.98	$10,142.12
Breast	$2,289.14	$10,770.55
Cervical	$3,072.51	$15,040.83
CNS Tumors	$3,002.51	$16,916.07
Colorectal	$2,822.21	$13,515.87
Head and Neck	$3,329.19	$19,006.74
Lung	$2,587.18	$14,075.30
Lymphoma	$1,836.47	$8,407.35
Pancreatic	$2,661.11	$15,361.40
Prostate	$3,833.68	$22,756.87
Upper GI	$3,022.19	$15,774.33
Uterine	$2,133.19	$10,869.04

Year: 2025

Cancer Type	Professional Case Rate	Technical Case Rate
Anal	$3,478.23	$19,185.05
Bladder	$3,509.83	$17,651.50
Bone Metastases	$1,637.91	$7,036.46
Brain Metastases	$1,905.06	$10,436.24
Breast	$2,350.94	$11,082.90
Cervical	$3,155.47	$15,477.01
CNS Tumors	$3,083.57	$17,406.64
Colorectal	$2,898.41	$13,907.83
Head and Neck	$3,419.08	$19,557.94
Lung	$2,657.03	$14,483.48
Lymphoma	$1,886.05	$8,651.16
Pancreatic	$2,732.96	$15,806.88
Prostate	$3,937.18	$23,416.82
Upper GI	$3,103.79	$16,231.79
Uterine	$2,190.79	$11,184.24

Year: 2026

Cancer Type	Professional Case Rate	Technical Case Rate
Anal	$3,565.19	$19,722.23
Bladder	$3,597.58	$18,145.74
Bone Metastases	$1,678.86	$7,233.48
Brain Metastases	$1,952.69	$10,728.46
Breast	$2,409.72	$11,393.22
Cervical	$3,234.35	$15,910.37
CNS Tumors	$3,160.66	$17,894.02
Colorectal	$2,970.87	$14,297.25
Head and Neck	$3,504.56	$20,105.56
Lung	$2,723.46	$14,889.02
Lymphoma	$1,933.20	$8,893.39
Pancreatic	$2,801.28	$16,249.47
Prostate	$4,035.61	$24,072.49
Upper GI	$3,181.38	$16,686.28
Uterine	$2,245.56	$11,497.40

Year: 2027

Cancer Type	Professional Case Rate	Technical Case Rate
Anal	$3,650.75	$20,274.46
Bladder	$3,683.92	$18,653.82
Bone Metastases	$1,719.15	$7,436.02
Brain Metastases	$1,999.55	$11,028.85
Breast	$2,467.55	$11,712.23
Cervical	$3,311.98	$16,355.86
CNS Tumors	$3,236.52	$18,395.06
Colorectal	$3,042.18	$14,697.58
Head and Neck	$3,588.67	$20,668.52
Lung	$2,788.82	$15,305.91
Lymphoma	$1,979.60	$9,142.41
Pancreatic	$2,868.51	$16,704.45
Prostate	$4,132.47	$24,746.52
Upper GI	$3,257.74	$17,153.50
Uterine	$2,299.45	$11,819.32

Year: 2028

Cancer Type	Professional Case Rate	Technical Case Rate
Anal	$3,738.37	$20,842.14
Bladder	$3,772.33	$19,176.13
Bone Metastases	$1,760.41	$7,644.23
Brain Metastases	$2,047.54	$11,337.66
Breast	$2,526.77	$12,040.17
Cervical	$3,391.47	$16,813.82
CNS Tumors	$3,314.19	$18,910.12
Colorectal	$3,115.19	$15,109.11
Head and Neck	$3,674.79	$21,247.24
Lung	$2,855.75	$15,734.47
Lymphoma	$2,027.11	$9,398.39
Pancreatic	$2,937.36	$17,172.18
Prostate	$4,231.65	$25,439.42
Upper GI	$3,335.92	$17,633.79
Uterine	$2,354.64	$12,150.26

These rates are for non-dual beneficiaries, have not been geographically adjusted, and have not received an accreditation adjustment.

Appendix A: CMS September 2020 RO Model HCPCS Codes

HCPCS Code	Professional Indicator	Technical Indicator	Proton Therapy Indicator
77014	1	1	0
77021	1	1	0
77261	1	0	0
77262	1	0	0
77263	1	0	0
77280	1	1	0
77285	1	1	0
77290	1	1	0
77293	1	1	0
77295	1	1	0
77299	0	1	0
77300	1	1	0
77301	1	1	0
77306	1	1	0
77307	1	1	0
77321	1	1	0
77331	1	1	0
77332	1	1	0
77333	1	1	0
77334	1	1	0
77336	0	1	0
77338	1	1	0
77370	0	1	0
77371	0	1	0
77372	0	1	0
77373	0	1	0
77385	0	1	0
77386	0	1	0
77387	1	1	0
77399	0	1	0
77402	0	1	0
77407	0	1	0
77412	0	1	0
77417	0	1	0
77427	1	0	0
77431	1	0	0
77432	1	0	0
77435	1	0	0
77470	1	1	0
77499	1	1	0
77520	0	1	1
77522	0	1	1
77523	0	1	1
77525	0	1	1
G0339	0	1	0
G0340	0	1	0
G6001	1	1	0
G6002	1	1	0
G6003	0	1	0
G6004	0	1	0
G6005	0	1	0
G6006	0	1	0
G6007	0	1	0
G6008	0	1	0
G6009	0	1	0
G6010	0	1	0
G6011	0	1	0
G6012	0	1	0
G6013	0	1	0
G6014	0	1	0
G6015	0	1	0
G6016	0	1	0
G6017	0	1	0

Appendix B: CMS September 2020 RO Model Trigger Diagnosis Code Prefixes

Dx Code Prefix	Cancer Type
C21	Anal
C67	Bladder
C7951	Bone Metastases
C793	Brain Metastases
C50	Breast
D05	Breast
C53	Cervical
C70	CNS Tumors
C71	CNS Tumors
C72	CNS Tumors
C18	Colorectal
C19	Colorectal
C20	Colorectal
C00	Head and Neck
C01	Head and Neck
C02	Head and Neck
C03	Head and Neck
C04	Head and Neck
C05	Head and Neck
C06	Head and Neck
C07	Head and Neck
C08	Head and Neck
C09	Head and Neck
C10	Head and Neck
C11	Head and Neck
C12	Head and Neck
C13	Head and Neck
C14	Head and Neck
C30	Head and Neck
C31	Head and Neck
C32	Head and Neck
C760	Head and Neck
C33	Lung
C34	Lung
C39	Lung
C81	Lymphoma
C82	Lymphoma
C83	Lymphoma
C84	Lymphoma
C85	Lymphoma
C86	Lymphoma
C88	Lymphoma
C914	Lymphoma
C25	Pancreatic
C61	Prostate
C15	Upper GI
C16	Upper GI
C17	Upper GI
C54	Uterine
C55	Uterine
C45	Lung

From the September 2020 Federal Register, excluding liver cancer. Located here: https://www.govinfo.gov/content/pkg/FR-2020-09-29/pdf/2020-20907.pdf

Appendix C: CMS September 2020 RO Model Cancer Type Assignment Diagnosis Code Prefixes

Dx Code Prefix	Cancer Type
C21	Anal
C67	Bladder
C7951	Bone Metastases
C793	Brain Metastases
C50	Breast
D05	Breast
C53	Cervical
C70	CNS Tumors
C71	CNS Tumors
C72	CNS Tumors
C18	Colorectal
C19	Colorectal
C20	Colorectal
C00	Head and Neck
C01	Head and Neck
C02	Head and Neck
C03	Head and Neck
C04	Head and Neck
C05	Head and Neck
C06	Head and Neck
C07	Head and Neck
C08	Head and Neck
C09	Head and Neck
C10	Head and Neck
C11	Head and Neck
C12	Head and Neck
C13	Head and Neck
C14	Head and Neck
C30	Head and Neck
C31	Head and Neck
C32	Head and Neck
C760	Head and Neck
C33	Lung
C34	Lung
C39	Lung
C45	Lung
C81	Lymphoma
C82	Lymphoma
C83	Lymphoma
C84	Lymphoma
C85	Lymphoma
C86	Lymphoma
C88	Lymphoma
C914	Lymphoma
C25	Pancreatic
C61	Prostate
C15	Upper GI
C16	Upper GI
C17	Upper GI
C54	Uterine
C55	Uterine
C64	Kidney
C22	Liver
C23	Liver
C24	Liver

Same list as Appendix B, with the addition of kidney and liver cancer codes located in the July 2019 Proposed Rule. Located here: https://www.govinfo.gov/content/pkg/FR-2019-07-18/pdf/2019-14902.pdf

Appendix D: Evaluation and Management HCPCS Codes

HCPCS
99202
99203
99204
99205
99206
99207
99208
99209
99210
99211
99212
99213
99214
99215
99217
99218
99219
99220
99221
99222
99223
99224
99225
99226
99231
99232
99233
99234
99235
99236
99237
99238
99239
99241
99242
99243
99244
99245
99246
99247
99248
99249
99250
99251
99252
99253
99254
99255
99281
99282
99283
99284
99285
99286
99287
99288
99291
99292

EM code list used for identifying claims used in cancer type assignment.

Appendix E: Radiation Treament Planning and Delivery HCPCS Codes

HCPCS	HCPCS Description	Category	Imaging_Guidance_Ind
77014	Computed tomography guidance for placement of	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77021	Magnetic resonance guidance for needle placem	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77261	Radiation therapy planning	Treatment Planning	0
77262	Radiation therapy planning	Treatment Planning	0
77263	Radiation therapy planning	Treatment Planning	0
77280	Set radiation therapy field	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77285	Set radiation therapy field	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77290	Set radiation therapy field	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77293	Respirator motion mgmt simul	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77295	3-d radiotherapy plan	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77299	Radiation therapy planning	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77300	Radiation therapy dose plan	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77301	Radiotherapy dose plan imrt	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77306	Telethx isodose plan simple	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77307	Telethx isodose plan cplx	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77321	Special teletx port plan	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77331	Special radiation dosimetry	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77332	Radiation treatment aid(s)	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77333	Radiation treatment aid(s)	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77334	Radiation treatment aid(s)	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77336	Radiation physics consult	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77338	Design mlc device for imrt	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77370	Radiation physics consult	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77371	Srs multisource	Radiation Treatment Delivery	0
77372	Srs linear based	Radiation Treatment Delivery	0
77373	Sbrt delivery	Radiation Treatment Delivery	0
77385	Ntsty modul rad tx dlvr smpl	Radiation Treatment Delivery	0
77386	Ntsty modul rad tx dlvr cplx	Radiation Treatment Delivery	0
77399	External radiation dosimetry	Medical Radiation Physics, Dosimetry, Treatment Devices, Special Services	0
77402	Radiation treatment delivery	Radiation Treatment Delivery	0
77407	Radiation treatment delivery	Radiation Treatment Delivery	0
77412	Radiation treatment delivery	Radiation Treatment Delivery	0
77417	Radiology port images(s)	Radiation Treatment Delivery (Guidance)	1
77427	Radiation tx management x5	Treatment Management	0
77431	Radiation therapy management	Treatment Management	0
77432	Stereotactic radiation trmt	Treatment Management	0
77435	Sbrt management	Treatment Management	0
77470	Special radiation treatment	Treatment Management	0
77499	Radiation therapy management	Treatment Management	0
77520	Proton trmt simple w/o comp	Radiation Treatment Delivery	0
77522	Proton trmt simple w/comp	Radiation Treatment Delivery	0
77523	Proton trmt intermediate	Radiation Treatment Delivery	0
77525	Proton treatment complex	Radiation Treatment Delivery	0
G0339	Robot lin-radsurg com, first	Radiation Treatment Delivery	0
G0340	Robt lin-radsurg fractx 2-5	Radiation Treatment Delivery	0
G6001	Echo guidance radiotherapy	Radiation Treatment Delivery (Guidance)	1
G6002	Stereoscopic x-ray guidance	Radiation Treatment Delivery (Guidance)	1
G6003	Radiation treatment delivery	Radiation Treatment Delivery	0
G6004	Radiation treatment delivery	Radiation Treatment Delivery	0
G6005	Radiation treatment delivery	Radiation Treatment Delivery	0
G6006	Radiation treatment delivery	Radiation Treatment Delivery	0
G6007	Radiation treatment delivery	Radiation Treatment Delivery	0
G6008	Radiation treatment delivery	Radiation Treatment Delivery	0
G6009	Radiation treatment delivery	Radiation Treatment Delivery	0
G6010	Radiation treatment delivery	Radiation Treatment Delivery	0
G6011	Radiation treatment delivery	Radiation Treatment Delivery	0
G6012	Radiation treatment delivery	Radiation Treatment Delivery	0
G6013	Radiation treatment delivery	Radiation Treatment Delivery	0
G6014	Radiation treatment delivery	Radiation Treatment Delivery	0
G6015	Radiation tx delivery imrt	Radiation Treatment Delivery	0
G6016	Delivery comp imrt	Radiation Treatment Delivery	0
G6017	Intrafraction track motion	Radiation Treatment Delivery (Guidance)	1

Appendix F: September 2020 RO Model Global HCPCS codes and RVUs by Year

HCPCS	Year	Professional Component	Technical Component
77014	2017	0.371	0.629
77014	2018	0.371	0.629
77014	2019	0.372	0.628
77021	2017	0.189	0.811
77021	2018	0.189	0.811
77021	2019	0.155	0.845
77280	2017	0.130	0.870
77280	2018	0.130	0.870
77280	2019	0.135	0.865
77285	2017	0.122	0.878
77285	2018	0.122	0.878
77285	2019	0.124	0.876
77290	2017	0.155	0.845
77290	2018	0.155	0.845
77290	2019	0.161	0.839
77293	2017	0.220	0.780
77293	2018	0.220	0.780
77293	2019	0.229	0.771
77295	2017	0.449	0.551
77295	2018	0.449	0.551
77295	2019	0.459	0.541
77300	2017	0.482	0.518
77300	2018	0.482	0.518
77300	2019	0.492	0.508
77301	2017	0.209	0.791
77301	2018	0.209	0.791
77301	2019	0.217	0.783
77306	2017	0.483	0.517
77306	2018	0.483	0.517
77306	2019	0.492	0.508
77307	2017	0.515	0.485
77307	2018	0.515	0.485
77307	2019	0.526	0.474
77321	2017	0.526	0.474
77321	2018	0.526	0.474
77321	2019	0.534	0.466
77331	2017	0.701	0.299
77331	2018	0.701	0.299
77331	2019	0.707	0.293
77332	2017	0.405	0.595
77332	2018	0.405	0.595
77332	2019	0.456	0.544
77333	2017	0.398	0.602
77333	2018	0.398	0.602
77333	2019	0.361	0.639
77334	2017	0.463	0.537
77334	2018	0.463	0.537
77334	2019	0.473	0.527
77338	2017	0.433	0.567
77338	2018	0.433	0.567
77338	2019	0.452	0.548
77387	2017	0.300	0.700
77387	2018	0.300	0.700
77387	2019	0.300	0.700
77470	2017	0.771	0.229
77470	2018	0.771	0.229
77470	2019	0.808	0.192
77499	2017	0.300	0.700
77499	2018	0.300	0.700
77499	2019	0.300	0.700
G6001	2017	0.566	0.434
G6001	2018	0.566	0.434
G6001	2019	0.382	0.618
G6002	2017	0.266	0.734
G6002	2018	0.266	0.734
G6002	2019	0.274	0.726