

# ASTCT CAR-T THERAPY CODING AND BILLING GUIDE





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# INTRODUCTION

Chimeric Antigen Receptor T-cell therapy (CAR-T) is a type of immune effector cell therapy which represents an advancement in the treatment of certain hematologic malignancies. The currently approved CAR-T therapy products are personalized, autologous therapies, which involve steps of cell collection, processing and administration to a patient. Many potential future iterations of CAR-T are under clinical trial, including allogeneic products and those used to treat solid tumors or immune system disorders. The novel nature of CAR-T therapies means that providers have many questions about appropriate coding and billing for hospital inpatients and outpatients.

## Topics Addressed in the Guide

The American Society for Transplantation and Cellular Therapy (ASTCT) Government Relations Committee has made this guide available to provide a comprehensive review of accurate and complete coding and billing for CAR-T cell therapy and its related ancillary services for hospitals, regardless of the product used. The guide addresses US Food and Drug Administration (FDA)-approved commercial products, as well as products administered as part of a clinical trial or expanded access program. It also aims to clarify the major billing differences and considerations between government and private payers.

## Topics Not Addressed in the Guide

This guide does not address billing for administration of a CAR-T product by free-standing physician practices for CAR-T therapy, nor is it intended to capture payer-specific requirements. Providers remain responsible for confirming eligibility and coverage with each prospective patient's payer, and for checking payer-specific policies for information on prior authorization, coding and billing. This guide also does not address non-CAR T-cell immune effector cell immunotherapies, such as Tumor Infiltrating Lymphocytes (TILs), T-cell Receptor (TCR) therapies, or other types of cell and gene therapies, such as autologous stem-cell based gene therapies. Providers should refer to a product's own coding and billing guide for information on coding and billing for non CAR-T cell therapies.

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*This guide is based on transaction sets defined by the Administrative Simplification Act, a part of the original Health Insurance Portability and Accountability Act (HIPAA) of 1996. All HIPAA covered entities, including hospitals and all health plans, are required to adhere to the code sets.*

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# HOSPITAL CONSIDERATIONS REGARDING CAR-T PATIENT STATUS

Confirming the status of the patient (inpatient or outpatient) at each step in the CAR-T episode of care is key to understanding coverage, coding and billing of CAR-T services.

The inpatient or outpatient status of a hospital patient is critically important, since it determines the code sets used to report CAR-T services, hospital claim requirements, and, ultimately, reimbursement.

## Medicare's Definition of Patient Status

*A hospital "inpatient" is defined by Medicare as a patient who is expected to require at least two midnights of medically necessary hospital care or a one-night hospital stay necessitating extraordinary resources due to significant patient clinical risk.*

Determining that a patient requires an inpatient level of hospital care involves complex medical decision-making. An inpatient admission to the hospital requires a clinician's order for admission. While Medicare generally considers an inpatient admission to be appropriate when a patient is expected to need two or more nights of medically necessary hospital care<sup>1</sup>, commercial payers may certify or pre-authorize an inpatient stay or outpatient services. Commercial payers

often rely upon proprietary tools, such as Milliman or Interqual, to determine if the severity of illness and intensity of services supports an inpatient admission.

*A hospital "outpatient" is defined by Medicare as a patient who needs hospital-level care but who is not expected to require either overnight or two nights of hospital-level care or extraordinary services.*

These patients can receive diagnostic and therapeutic services, including observation services, and can remain in the hospital overnight and be treated in the same nursing unit as other inpatients. No different than a hospital's operating suites, which are used to treat both outpatients and inpatients, hospital outpatient care is not location-dependent. Specifically, outpatients may be treated in what would be considered typically inpatient locations, such as the Intensive Care Unit (ICU), while retaining their outpatient status.

## Orders and Patient Status

**Written orders are required for all hospital services, including all CAR-T services, and may be considered to be the start of the charge capture process.** At cell collection and product administration, clinician orders must specify the status of the patient as an outpatient or inpatient, since the status can change with updated orders as the patient's care progresses. While health care providers often refer to patients being treated in a certain location or setting as determining outpatient or inpatient status—i.e. "in the outpatient setting"—the status of the patient as a hospital outpatient or inpatient is technically determined by the clinician's written order.

Cell collection is primarily rendered to hospital outpatients, but administration can be furnished to either an outpatient or inpatient. When cell collection or administration occurs on outpatient status, the clinician may subsequently order an inpatient admission if complications arise that necessitate an inpatient admission. Alternatively, the clinician may order outpatient observation services to further evaluate the patient as an outpatient. A patient may remain outpatient until discharge or may require an inpatient admission order.







“ Observation care is a **service**, not a patient status. ”

## HOSPITAL CONSIDERATIONS REGARDING CAR-T PATIENT STATUS *(CONTINUED)*

### Observation Services and Patient Status

**Observation care is a service, not a patient status.**<sup>2</sup>

Observation care is required to be ordered by a physician or another individual who is authorized by state licensure and hospital staff bylaws to admit patients to the hospital or order outpatient tests.<sup>3</sup> Workflow in hospitals often requires ordering clinicians to label outpatients that they order to be treated on a specific nursing unit as “observation” or “observation patients.” This workflow issue has added to the mistaken impression that observation is a status rather than an outpatient service.

Observation care is a service because it must be ordered by a clinician for a particular patient to allow time for the clinician to obtain diagnostic tests, order treatments and re-assess the patient to decide whether the patient requires inpatient-level hospital care or can be discharged either home or to another post-acute care location. When observation care is ordered, it is expected that the outpatient will receive nurse monitoring as well as the ordered diagnostic and therapeutic services.

Observation care is time-based and ends when all clinical or medical interventions have been completed, and the clinician either orders that the patient be discharged or admitted as an inpatient. Generally, observation services are not expected to exceed 48 hours in duration except in rare and exceptional cases. Medicare will cover up to 72 hours of observation services, if necessary.<sup>4</sup>

A patient may also be discharged after receiving an outpatient administration of CAR-T and then subsequently, due to complications of CAR-T, be admitted as an inpatient to the same hospital within Medicare’s three-day payment window and therefore subject to payment under the Inpatient Prospective Payment System (IPPS). In this case, all outpatient services within the 3 days prior to admission, including but not limited to the administration procedure and the product itself, would be included on the inpatient claim. Any outpatient procedures will need to be coded with ICD-10-PCS codes and reported on the inpatient claim as well.



“Coverage for CAR-T therapy and related services varies by payer and the patient’s specific insurance benefits.”

## COVERAGE FOR CAR-T THERAPY

Coverage for CAR-T therapy and related services varies by payer and the patient’s specific insurance benefits. There are, however, some overarching coverage considerations by type of payer that are important for hospitals to know and understand.

### Coverage for Medicare Fee-For-Services (FFS) Beneficiaries

On August 7, 2019, the federal Centers for Medicare and Medicaid Services (CMS) issued a National Coverage Decision (NCD) memorandum for autologous CAR T-cell therapy, which applies to Medicare beneficiaries.<sup>5</sup> The NCD ensures consistent national coverage of CAR-T for Medicare beneficiaries because all A/B Medicare Administrative Contractors (MAC) are required to follow the decision.<sup>6,7</sup>

In the NCD, CMS stated that autologous CAR-T products expressing at least one chimeric antigen receptor (CAR) are covered only when they are administered at a health care facility that is enrolled in the FDA’s Risk Evaluation and Mitigation Strategies (REMS) program, and when they are used for a medically accepted indication.<sup>8</sup> In the NCD, CMS defined a “medically accepted indication” as either an FDA-approved indication (according to the product’s FDA label), or when an FDA-approved CAR-T product’s use was indicated in one or more CMS-approved compendia.<sup>9</sup>

Routine costs for patients who are enrolled in clinical trials for non-FDA approved autologous CAR-T therapies are specifically covered by CMS, per the NCD.<sup>10</sup> NCD 310.1 outlines instances where routine costs associated with qualifying clinical trials for cellular therapies that are not specifically addressed in the CAR-T NCD.<sup>11</sup> Medicare does not provide reimbursement when non-FDA-approved autologous CAR-T is used outside of the clinical trial parameters.<sup>12</sup>

### Coverage for Medicare Advantage (Part C) Beneficiaries

CMS requires Medicare Advantage (MA) plans to provide the same coverage to their enrollees as exists for Medicare FFS beneficiaries.<sup>13</sup> While the terms of the CAR-T NCD should apply to beneficiaries enrolled in MA plans, those plans may administer the NCD with additional requirements—such as prior authorization.

Therefore, it is important for providers to check with their MA plans about any specific prior authorization and billing requirements. Patient benefits may also vary across different MA plans; variations may exist for out-of-network restrictions, referral requirements, and patient cost-sharing, based on site and by patient status.



## COVERAGE FOR CAR-T THERAPY (CONTINUED)

### Coverage for Commercial Plan Beneficiaries

Non-governmental payers are often referred to as “commercial” payers. CAR-T is covered by many, if not most, commercial payers. The plan’s benefit design would ultimately govern if CAR-T was a covered benefit. The medical policies that determine patient eligibility are based on the FDA’s label, but often have additional requirements for treatment qualification.

Therefore, it is important to review each patient’s individually applicable medical plan and policy to identify additional specifications and/or eligibility requirements.

Commercial coverage policies may temporarily lag behind both new CAR-T product approvals and label expansions for existing FDA-approved CAR-T

products. For this reason, hospitals need to be ready to substantiate coverage requests with the appropriate patient-specific information and supportive clinical publications and references.

### Coverage for Medicaid Patients

Coverage of CAR-T therapy for Medicaid beneficiaries varies significantly by product and by state due to limited Federal coverage requirements. Therefore, it is important for providers who serve Medicaid beneficiaries to research the Medicaid state benefit documents and Medicaid Managed Care medical policies (if applicable) to determine eligibility and coverage.<sup>14</sup>

# ICD-10-CM DIAGNOSIS CODING

Diagnosis coding for CAR-T therapy patients is important to explain the medical necessity of the services. This affects both inpatient and outpatient claims. It is important to code the diagnosis being treated by the CAR-T product, any complications related to the CAR-T therapy administration and any relevant co-morbid conditions impacting medical decision-making and/or the patient's care.

Some payers may have policies that specify the diagnoses for which they will cover CAR-T therapy. The diagnosis codes provided in the table to the right should be verified with each patient's payer to ensure coverage. Additionally, clinician documentation to support a particular diagnosis must be present in the patient's medical record, because coding professionals can only code to the level of specificity provided in the medical record.

## Diagnosis Coding for CAR-T Product Indication

CAR-T therapy has been approved for a range of indications; for certain payers, FDA-approved CAR-T therapy may also be prescribed for a patient with a compendia-supported indication, such as in the National Comprehensive Cancer Network (NCCN) Drugs & Biologics Compendium.<sup>15</sup>

The table on the right provides the common ranges of diagnosis codes and indications for the current FDA-approved products.

*Given the broad range of diagnosis codes for the many indications that might be treated with a CAR-T product (either as part of FDA-approved use or in a clinical trial), this guide does not provide a comprehensive list of codes.*

Providers are encouraged to review product-specific manufacturer guides for additional specificity on diagnosis coding for particular products. These guides typically show precise codes to the 5th digit of the ICD-10-CM code for the ranges in the table to the right.

ICD-10-CM CODE RANGE	RANGE DESCRIPTION
C82.0X	Follicular lymphoma grade I
C82.1X	Follicular lymphoma grade II
C82.3X	Follicular lymphoma grade IIIa
C82.4X	Follicular lymphoma grade IIIb
C82.5X	Diffuse follicle center lymphoma
C82.6X	Cutaneous follicle center lymphoma
C82.8X	Other types of follicular lymphoma
C82.9X	Follicular lymphoma, unspecified
C83.1X	Mantle cell lymphoma
C83.3X	Diffuse large B-cell lymphoma <sup>16</sup>
C83.9X	Non-follicular (diffuse) lymphoma, unspecified
C85.1X	B-cell lymphoma, unspecified
C85.2X	Mediastinal (thymic) large b-cell lymphoma
C85.8X	Other specified types of non-Hodgkin lymphoma
C90.0X	Multiple myeloma
C91.0X	Acute lymphoblastic leukemia
Z51.12	Encounter for antineoplastic immunotherapy <sup>17</sup>

## Diagnosis Coding for Complications of CAR-T Therapy

CAR-T therapy is associated with specific complications, such as Cytokine Release Syndrome (CRS) and Immune Effector Cell Associated Neurotoxicity Syndrome (ICANS). As CAR-T use grew and more instances of complications were observed, the ASTCT noted the need for consistent grading and terminology. The ASTCT organized a consensus conference consisting of clinicians, federal agency representatives, and researchers in the field to reach agreed-upon definitions of the grades of CRS and ICANS.<sup>18</sup> As a result of this effort, five grades were generated for each type of complication. View more information about the **grading of CRS and ICANS**.



## ICD-10-CM DIAGNOSIS CODING (CONTINUED)

The National Center for Health Statistics (NCHS) implemented new ICD-10-CM diagnosis codes for the five grades of CRS on October 1, 2020; at the same time, NCHS approved new codes to recognize the five grades of ICANS, which are available for use beginning on October 1, 2021.

It is important for the provider to document a causal relationship between the CAR-T infusion and the complications that arise, such as CRS or ICANS.

To properly report CRS and ICANS conditions due to CAR-T infusions, coders will have to use at least two codes:

- **First**, code for the underlying condition represented by a complication “T” code. For immune effector cell (IEC) therapies, such as CAR-T, the NCHS created three new “complications” T-codes.<sup>19</sup> The coder would select the appropriate T-code based on the encounter type.
- **In addition**, a code from the CRS or ICANS code range would be selected based on the grade if documented or the selection of unspecified (if the grade is not documented).

COMPLICATIONS CODES	
CODE	DESCRIPTION
T80.82XA	Complication of immune effector cellular therapy, initial encounter
T80.82XD	Complication of immune effector cellular therapy, subsequent encounter
T80.82XS	Complication of immune effector cellular therapy, sequela
CRS CODES	
CODE	DESCRIPTION
D89.831	Cytokine release syndrome, grade 1
D89.832	Cytokine release syndrome, grade 2
D89.833	Cytokine release syndrome, grade 3
D89.834	Cytokine release syndrome, grade 4
D89.835	Cytokine release syndrome, grade 5
D89.839	Cytokine release syndrome, grade unspecified
ICANS CODES	
CODE	DESCRIPTION
G92.00	Immune effector cell-associated neurotoxicity syndrome, grade unspecified
G92.01	Immune effector cell-associated neurotoxicity syndrome, grade 1
G92.02	Immune effector cell-associated neurotoxicity syndrome, grade 2
G92.03	Immune effector cell-associated neurotoxicity syndrome, grade 3
G92.04	Immune effector cell-associated neurotoxicity syndrome, grade 4
G92.05	Immune effector cell-associated neurotoxicity syndrome, grade 5

# PROCEDURE CODING

Delivering a CAR-T episode of care requires many services across several departments. These services need to be ordered, documented, and coded correctly in order for the facility to receive reimbursement. This section focuses on the coding of different procedural services that are associated with the administration of CAR-T products—such as cell collection, cell processing, and the infusion/administration of the cells.

Hospital departments use Common Procedural Terminology (CPT), Healthcare Common Procedure Coding System (HCPCS), and National Uniform Billing Committee (NUBC) revenue codes to establish charges in the charge description master (CDM) for various services. After a service is completed, coders will read the medical record documentation and assign the most appropriate diagnosis and procedure codes.

## CPT Codes

The American Medical Association (AMA) has released CPT codes to describe CAR-T services and, pursuant to AMA CPT coding guidance, these are the most specific CPT codes to report CAR-T services. The AMA CPT book states, *“the most specific code should be reported when available, rather than using codes that approximate the service and if a specific code is not available then an unlisted code should be reported.”*<sup>20</sup>

The AMA originally released Category III CPT codes 0537T-0540T, effective 2019-2024, to describe the services for CAR-T. Effective January 2025, these codes have been deleted and replaced by Category I CPT codes 38225-38228, as described here.

These codes are the most specific codes available for autologous CAR-T therapy services. Given the use of the word “autologous” in the description, these codes should not be reported for allogeneic CAR-T therapy services. In this case, given that there is not a specific CPT code available for reporting allogeneic CAR-T services, providers should consider reporting of an unlisted CPT code 38999. Unlisted CPT codes, at times, are not accepted by payers.

In these cases, providers should work with their payer contracting representative or the managed care contracting group to discuss HIPAA transaction sets and how to approach the payer to discuss the situation.

Sharing the language from the CPT manual published by the AMA may be helpful, since the AMA is one of the HIPAA transaction code set authorities.<sup>21,22</sup>

## Cell Collection and Cell Processing Services

CAR-T cell therapy involves the collection of a patient’s T-cells from the blood. Cell collection may be performed directly by the hospital staff, or the hospital may contract or arrange with a service provider to collect the cells. Clinician orders are required for the cell collection procedure to occur. Patients may receive separate hydration or other drug administration services on the day of cell collection if their physiological condition necessitates these services and the clinician orders the services.

### CELL COLLECTION IS REPORTED WITH CPT CODE 38225

The NUBC established a series of new revenue codes for cell and gene therapy products and services to report charges for procedures performed by staff for the acquisition and injection/infusion of genetically modified cells.<sup>23</sup> The revenue code for cell collection is 0871.

### CELL PROCESSING (OUTBOUND AND INBOUND) IS REPORTED WITH CPT CODES 38226 & 38227

Due to the significant chain of custody and lab processing services that are associated with CAR-T manufacturing, the AMA has divided the lab processing services into an outbound processing code (38226) and an inbound processing code (38227). The NUBC has also established unique revenue codes for these lab processing services: 0872 and 0873, respectively. These are per-day codes, so if the lab has orders to conduct cell processing that spans more than one day, the lab would report the appropriate code for each date of service. Similar to cell collection, cell processing services are ordered by the clinician and cell lab documentation should be present in the patient’s medical record to support reporting these services.

## PROCEDURE CODING *(CONTINUED)*

It is also important to note that, while Medicare tracks the CAR-T codes for utilization, Medicare does not provide payment for CPT codes 38225-38227 because it considers these services to be part of the product HCPCS code (see section below). It is, however, still possible to report these codes on Medicare outpatient claims as the services occur; the codes will receive a rejection, but CMS will receive the information for its tracking purposes. Medicare provides several different reporting options in order for providers to avoid rejections, such as reporting these services on the patient's inpatient administration claim or by reporting a product charge inclusive of these service charges.<sup>24</sup>

The cell processing CPT codes 38226 and 38227 describe several different processing services, including, when required by the product's protocol, cryopreservation prior to shipment (38226) and thawing after receipt of the product (38227), as well the steps involved in proper storage, quality checks, maintaining appropriate chain of custody, placement in container for shipping (38226)

and appropriate handling and storage after receipt (38227).<sup>25</sup> Clinical examples of the use of these codes, and detailed descriptions of the services described by them, can be found in the June 1, 2019 publication of the CPT Assistant on Cellular and Gene Therapy.<sup>26</sup>

Note that this CPT assistant and Medicare's billing instructions were released when the previous Category III CPT codes 0537T-0539T were in effect, but both are still applicable to the current CPT codes 38225-38227. CMS affirmed its billing instructions described here in the CY 2025 Outpatient Prospective Payment System (OPPS) final rule.<sup>27</sup>

The table below shows the recommended revenue codes and CPT codes for reporting cell collection and cell processing services.

View a [cell collection and cell processing services coding grid](#).

CPT CODES		
REVENUE CODE	CODE	DESCRIPTION
0871: Cell/gene therapy - cell collection	<b>38225</b>	Chimeric antigen receptor T-cell (CAR-T) therapy; harvest of blood-derived T lymphocytes for development of genetically modified autologous CAR-T cells, per day
0872: Cell/gene therapy - specialized biologic processing and storage - prior to transport	<b>38226</b>	Chimeric antigen receptor T-cell (CAR-T) therapy; preparation of blood-derived T lymphocytes for transportation (eg, cryopreservation, storage)
0873: Cell/gene therapy - storage and processing after receipt of cells from manufacturer	<b>38227</b>	Chimeric antigen receptor T-cell (CAR-T) therapy; receipt and preparation of CAR-T cells for administration

# PROCEDURE CODING (CONTINUED)

## Administration of CAR-T

For inpatient facility claims, procedure codes from ICD-10-PCS are reported for the administration of CAR-T therapy. For outpatient hospital and professional claims, CPT codes are reported for the administration procedure, associated services, and the individual products. For hospital claims, NUBC established revenue code 0874 for the administration of modified cells via infusion and 0875 for administration of modified cells via injection.

## ICD-10-PCS Coding Section

All of the CAR-T administration ICD-10-PCS procedure codes are located within Section X, New Technology.

## Current ICD-10-PCS Coding

Beginning October 1, 2021, providers can select codes for all CAR-T products and procedures from the **XW0 table**.

All CAR-T product-specific procedure codes are in table XW0 along with product-agnostic codes to report autologous and allogeneic products that are under study.

Products that have been FDA-approved, or that expect imminent approval, and those that are expected to be approved, will likely request new product-specific ICD-10-PCS codes. New CAR-T codes may be added to the XW0 table at the request of stakeholders, upon approval by CMS of the request. The complete and most recent XW0 table can be found on the CMS ICD-10 webpage under “ICD-10-PCS Code Tables and Index.”<sup>28</sup> The table below shows the list of current ICD-10-PCS CAR-T codes.

## CPT Coding for CAR-T Administration

For outpatient hospital and professional claims, a CPT code must be used to report the administration of CAR-T. The CPT book states: *“the most specific code should be reported when available, rather than using codes that approximate the service and if a specific code is not available then an unlisted code should be reported.”*<sup>29</sup>

The CPT code to report autologous CAR-T therapy administration is 38228.

ICD-10-PCS CAR-T ADMINISTRATION CODES	
CODE	DESCRIPTION
<b>XW033C7</b> <b>XW043C7</b>	Introduction of autologous engineered chimeric antigen receptor t-cell immunotherapy (peripheral vein or central vein approach)
<b>XW033G7</b> <b>XW043G7</b>	Introduction of allogeneic engineered chimeric antigen receptor t-cell immunotherapy (peripheral vein or central vein approach)
<b>XW033H7</b> <b>XW043H7</b>	Introduction of axicabtagene ciloleucel immunotherapy (peripheral vein or central vein approach)
<b>XW033J7</b> <b>XW043J7</b>	Introduction of tisagenlecleucel immunotherapy (peripheral vein or central vein approach)
<b>XW033K7</b> <b>XW043K7</b>	Introduction of idecabtagene vicleucel immunotherapy (peripheral vein or central vein approach)
<b>XW033M7</b> <b>XW043M7</b>	Introduction of brexucabtagene autoleucel immunotherapy (peripheral vein or central vein approach)
<b>XW033N7</b> <b>XW043N7</b>	Introduction of lisocabtagene maraleucel immunotherapy (peripheral vein or central vein approach)
<b>XW033A7</b> <b>XW043A7</b>	Introduction of ciltacabtagene autoleucel (peripheral vein or central vein approach)
<b>XW0338A</b> <b>XW0438A</b>	Introduction of obecabtagene autoleucel (peripheral vein or central vein approach)



## PROCEDURE CODING *(CONTINUED)*

It is not appropriate to report CPT code 38228 for other types of cell therapy products, since the description of this code is specific to autologous CAR-T.

This means that the administration of an allogeneic CAR-T therapy or an autologous natural killer (NK) or tumor-infiltrating lymphocyte (TIL) therapy cannot be reported with 38228. Typically, an unlisted code (such as 38999, accompanied by an explanation), could be reported, but this should be discussed with individual payers.

For the 38228 CAR-T administration CPT code, there are additional Medicare billing considerations. CMS released transmittal 11179 on January 12, 2022, which instructs Medicare Administrative Contractors (MACs) that Medicare covers CAR-T therapy when it is administered in a REMS-certified healthcare facility, and therefore, for the facility submitting the claim to signal to the MAC that they are REMS-certified, the professional and outpatient facility claims should have modifier -KX appended to the CAR-T administration code 38228.<sup>30</sup>

The transmittal states that once healthcare facilities have been identified utilizing this method as an FDA REMS-certified facility, they are added to a special Medicare edit that allows their outpatient facility claims for CAR-T to automatically process, regardless of the presence of the KX modifier.

It is unknown at this time, given that there are different manufacturer REMS programs for the different products, if the KX modifier needs to be billed with 38228 each time a new CAR-T product is billed on outpatient institutional claims, or if billing the modifier just once will suffice. Therefore, it is recommended that, for Medicare facility claims, the KX modifier is hard coded in the facility system, so it is billed with 38228 each time.

This special Medicare edit is not applicable for professional claims billing 38228. For all Medicare professional claims billing this code, the KX modifier must be present.

View a [CAR-T administration coding grid](#).

### CPT CODE FOR CAR-T ADMINISTRATION

REVENUE CODE	CODE	DESCRIPTION
0874: Cell/gene therapy - infusion of modified cells	38228	Chimeric antigen receptor T-cell (CAR-T) therapy; CAR-T cell administration, autologous



## PRODUCT CODING

HCPCS Level II product codes have been created to describe FDA-approved CAR-T products. Outpatient claims for CAR-T administration must have a HCPCS Level II code identifying the product in order to receive a payment based on the Average Sales Price (ASP) of that product. Current CAR-T products have been assigned a Q-code, although some may first have a temporary HCPCS C-code assigned upon pass-through payment status approval prior to a new HCPCS assignment.

### Billing Unclassified HCPCS Codes

After the FDA approves a product, it may take time before a product-specific HCPCS code is released (application deadlines are quarterly approvals/code releases by CMS). Therefore, the use of an unspecified code may be necessary in the interim. In these cases, Medicare requires C9399 and the National Drug Code (NDC) be reported.<sup>31</sup>

In Transmittals 10891 and 11774, CMS clarified its instructions on an additional circumstance in which to bill C9399 and other unclassified HCPCS codes such as J3590: when the dose administered exceeded the description included in the HCPCS code for that product. Because the CAR-T product's FDA labels include the maximum number of cells that are to be infused, and the HCPCS code descriptors align with the FDA label description, CMS considers it off-label use to administer a dose greater than that included in the description. CMS indicated in Transmittal 11774 that this situation should be extremely rare. Providers billing for a CAR-T therapy case in this circumstance should carefully review transmittals 10891 and 11774 for instructions.<sup>32,33</sup>

## CAR-T Services in HCPCS Code Descriptions

The current CAR-T product code descriptions include references to cell collection, dosing, and preparation; for this reason, Medicare does not separately reimburse for the CAR-T services described by CPT codes 38225-38227 on outpatient claims. In Special Edition Article SE19009, CMS outlined options for reporting charges for these services on outpatient or inpatient claims.<sup>34</sup>

### Reporting of CAR-T Product HCPCS Codes on Inpatient Claims

Product-specific HCPCS codes may be reported on Medicare inpatient claims per the NUBC manual, but this is less common, since hospitals report the ICD-10-PCS codes which capture both the administration of the product and the product name. Non-Medicare payers may require product-specific HCPCS codes to be reported. These payers may also accept or require the separate reporting of cell collection and cell processing services that are described by the CAR-T CPT codes for tracking purposes or for separate payment, depending on arrangements between the provider and payer. For this reason, a provider may choose to report the NDC code(s) for the product rather than the HCPCS code on inpatient claims.

### Revenue Codes and CAR-T Product HCPCS Coding

The NUBC established revenue codes to report charges for cell and gene therapy products, as it had for services, like cell collection (see page 10). To report CAR-T product charges on inpatient or outpatient claims, use revenue code 0891. This is an extension of pharmacy for FDA-approved cell therapy products (0892 should be used only to report gene therapies). The NUBC is a HIPAA standard-setting and maintenance organization, therefore providers should use, and payers accept, the NUBC-established appropriate revenue codes.

## PRODUCT CODING (CONTINUED)

### HCPCS Modifiers and the CAR-T Codes

For Medicare beneficiaries, CMS requires a modifier to be billed with the CAR-T therapy HCPCS product code in certain circumstances. In transmittal 11774, CMS issued billing instructions when submitting professional claims for the CAR-T therapy product and administration for Places of Service 11 (office) or 49 (independent clinic). Due to the inability of the current system to process these claims due to the field length topping out at 7 digits, CMS created a new modifier, -LU, to allow for fractionated billing of the HCPCS code. **However, this modifier is not applicable to hospital outpatient departments. CMS states that hospital providers do not need to change their billing and will continue to bill 1 unit for the CAR-T therapy product HCPCS code.**<sup>35</sup>

In the CY 2023 Medicare Physician Fee Schedule (MPFS) final rule, CMS finalized either the JW modifier or the JZ modifier for separately payable drugs/biologicals, effective July 1, 2023. The JW modifier indicates there were discarded drug amounts from single use containers payable under Part B. The JZ modifier

indicates there was no discarded amount. CMS stated in the rule that it considered “separately payable drugs/biologicals” to be those with HCPCS codes that are assigned status indicator “K” (Nonpass-Through Drugs and Nonimplantable Biologicals) or “G” (Pass-Through Drugs and Biologicals), under the Outpatient Prospective Payment System, which includes CAR-T products.<sup>36</sup> For more information, review the CY 2023 MPFS final rule or CMS’ FAQ on the JW and JZ modifiers [here](#).

### Current CAR-T Product HCPCS Codes

The table below has product-specific codes for FDA-approved CAR-T products and includes codes to report newly approved products that are pending release of a specific HCPCS code. CMS releases new HCPCS product codes on a quarterly basis. It is important for providers to check for code updates in quarterly Transmittals and the quarterly updates of Addendum B found on the CMS website, [here](#).

View a [product coding grid](#).

REVENUE CODE	CODE	DESCRIPTION
0891: Special Processed Drugs – FDA Approved Cell Therapy	<b>C9399</b>	Unclassified drugs or biologicals
	<b>J3490</b>	Unclassified drugs
	<b>J3590</b>	Unclassified biologics
	<b>Q2042</b>	Tisagenlecleucel, up to 600 million car-positive viable T cells, including leukapheresis and dose preparation procedures, per therapeutic dose
	<b>Q2041</b>	Axicabtagene ciloleucel, up to 200 million autologous anti-CD19 car-positive viable T cells, including leukapheresis and dose preparation procedures, per therapeutic dose
	<b>Q2053</b>	Brexucabtagene autoleucel, up to 200 million autologous anti-cd19 car positive viable t cells, including leukapheresis and dose preparation procedures, per therapeutic dose
	<b>Q2054</b>	Lisocabtagene maraleucel, up to 110 million autologous anti-cd19 car-positive viable t cells, including leukapheresis and dose preparation procedures, per therapeutic dose
	<b>Q2055</b>	Idecabtagene vicleucel, up to 460 million autologous anti-bcma car-positive viable t cells, including leukapheresis and dose preparation procedures, per therapeutic dose
<b>Q2056</b>	Ciltacabtagene autoleucel, up to 100 million autologous b-cell maturation antigen (bcma) directed car-positive t cells, including leukapheresis and dose preparation procedures, per therapeutic dose	



*Understand grouping, negotiated contracts and clinical trial reimbursement methodologies that impact how you are required to submit billing for each patient.*

## REIMBURSEMENT METHODOLOGIES

Many payers—including CMS, other government payers, and many commercial payers—use a Diagnosis-Related Group (DRG) -based grouping reimbursement methodology. A DRG-based methodology assigns patients who have similar conditions (or who underwent similar procedures) into specific groupings for the purposes of providing reimbursement for hospital inpatients. The exact groupings and payments vary by payer.

Payers may use Medicare’s MS-DRG and Ambulatory Payment Classification (APC) groupings, or use different payment methodologies, including an altogether different grouping system; they may or may not provide separate payment for FDA approved CAR-T products.

For hospital outpatients, Medicare provides payment using outpatient groupings called APC groups. Similar to how it structures DRGs, CMS groups individual CPT/ HCPCS codes of similar type or resource use into a

single APC. The agency assigns a single payment rate to the APC, which then applies to all CPT codes within the APC. For Medicare outpatient product payment, the appropriate CAR-T product C- or Q-code (as described in the coding section), along with the NDC, would be reported on the claim.

Commercial payers typically reimburse under a negotiated contract methodology, such as a single case rate for the episode of care, which specifies how payment for the product is handled. The CAR-T product may be paid based on the Wholesale Acquisition Cost (WAC) amount while the patient care costs are paid according to the negotiated case rate.



# CLINICAL TRIAL AND EXPANDED ACCESS BILLING

The development of CAR-T products is on-going, with multiple clinical trials underway at any given time. *Clinical trial billing is likely to be constant in this field, and may present billing challenges for providers.*

## Medicare Clinical Trial Billing

For non-Medicare payers, providers must check with the payer regarding any special requirements around clinical trial or expanded access billing.

Medicare requires all clinical trial claims cases to contain condition code 30 and value code D4, with the National Clinical Trial (NCT) number, and diagnosis code Z00.6. Reporting CAR-T clinical trial cases in this way will trigger CMS to pay the appropriate reduced MS-DRG 018 amount, since no product cost was incurred.<sup>37</sup>

For a clinical trial case where the CAR-T product is not the item under investigation (i.e. the patient is enrolled in a clinical trial but the hospital still incurred the cost of the CAR-T product), the provider should enter “Diff Prod Clin Trial” into Billing Note NTE02 on the electronic claim 837I or in the remarks field on a paper claim (form locator 80) in order to receive the full MS-DRG 018 payment amount, since the hospital incurred the product cost.<sup>38</sup>

## Medicare Expanded Access Billing

In some instances, an FDA-approved CAR-T product may not meet manufacturing release specifications, yet the physician may proceed with administration to a patient under an expanded access program or protocol.

For CAR-T expanded access cases, as of October 1, 2022, CMS instructs providers to submit condition code 90. Prior to October 1, 2022, CMS had identified expanded access claims by instructing providers to enter “Expand Acc Use” into the claims field Billing Note NTE02 on the electronic claim 837I, or in the remarks field on a paper claim (form locator 80).<sup>39</sup> Using condition code 90 will result in the appropriate reduced MS-DRG 018 payment amount.

## Value Code 90

The NUBC is one of the HIPAA standards setting and maintenance organizations. The NUBC maintains instructions and code sets that are applicable to institutional claims and incorporates code sets from other HIPAA authorities (like the AMA’s CPT codes), which are relevant to CAR-T billing scenarios. The NUBC has established a value code to allow the reporting of actual product acquisition cost. This may facilitate claims processing and avoid the need to attach the product invoice or may enable reporting a value of zero (0) when a product cost is not incurred because the patient is in a clinical trial or received the product under an expanded access protocol. Value code 90 is used to report the cell therapy invoice cost.<sup>40</sup>

# REVENUE INTEGRITY PROCESS

Below is a summary of the revenue integrity process to help various staff better ensure patient eligibility, coverage, charge capture, documentation, and accurate claims reporting and validation.

## Prior to Service Delivery

### ELIGIBILITY

- Determine eligibility and insurance plan priority for all plans; check whether the patient has a supplemental catastrophic plan.
- Perform coordination of benefits as determined by plan eligibility.

### COVERAGE

- For each plan for which eligibility was verified, confirm benefits for the entire CAR-T episode of care.
- Attempt to obtain the published Affordable Care Act (ACA)-required benefit summary for each plan.
- Research any published coverage policies from each plan and confirm the requirement for prior authorization, including whether a peer-to-peer clinician discussion is necessary.
- Obtain current out-of-pocket maximums for the patient under each plan.
- Review published coverage policies against the following patient-specific information to confirm coverage:
  - Primary diagnosis and ICD-10-CM code;
  - Relevant disease-related characteristics (e.g., histology, prognostic factors);
  - Prior regimens/lines of therapy and treatment response; and
  - Clinical fitness (e.g., ECOG performance status, organ function indicators).
- If the patient is to be enrolled in a clinical trial, determine the payer's policies regarding coverage and payment of routine costs in a clinical trial.

### PRIOR AUTHORIZATION

- Submit the prior authorization request following the payer's instructions.
- Carefully review the documentation requirements and furnish a clear and concise summary to the payer and/or to the patient's clinician who may be involved in a peer-to-peer review process.
- Determine whether an expedited prior authorization process is available and whether this process should be followed due to the patient's clinical condition.
- Confirm prior authorization for each step of the treatment:
  - Cell collection;
  - Cell lab processing – outbound to the manufacturer, inbound to the provider from the manufacturer, and preparation for administration; and
  - Administration, whether outpatient or part of an inpatient stay.

# REVENUE INTEGRITY PROCESS *(CONTINUED)*

## Concurrent With Service Delivery

### CHARGE CAPTURE AND DOCUMENTATION

- **Confirm the following:**
  - Presence of a written, authenticated clinician order for cell collection.
  - Nursing/cell lab documentation of cell collection procedure (also, providers should consider tying charge capture of the procedure 38225 charge to completed clinical documentation in the electronic medical record [EMR]).
  - The presence of cell laboratory documentation of outbound cell processing according to the applicable manufacturer instructions/requirements (providers should consider tying charge capture of the procedure 33226 charge to completed clinical documentation in the EMR).
  - Cell laboratory documentation of inbound/receipt of cells and any processing (e.g., thawing) according to applicable manufacturer instructions/requirements and clinician orders (providers should consider tying charge capture of the procedure 38227 charge to completed clinical documentation in the EMR).
  - Nursing/cellular lab documentation of the administration procedure (providers should consider tying charge capture of the procedure 38228 charge to completed clinical documentation in the EMR).
- Review for orders, medication administration record (MAR) and other applicable clinical documentation for any ancillary services.
- For inpatients, confirm presence of the inpatient admission order from the clinician.
- For any hourly observation services provided after administration, confirm presence of clinician order of observation services, and clinician progress notes reflecting periodic re-assessment of the patient until a decision to discharge or admit the patient as an inpatient.
- The product charge may come from pharmacy or the cell laboratory and this typically affects documentation of the product and administration procedure. Confirm documentation of the administration procedure in the medication administration record (MAR) or other record developed by the cell laboratory and/or nursing to document the administration procedure of the specific product.

## After Service Provision

### CLAIM SUBMISSION

- Confirm payer-specific billing requirements based on whether outpatient or inpatient hospital claims will be submitted.
- Confirm the correct principal and admitting ICD-10-CM diagnosis codes.
- Review HCPCS Level II and National Drug Code (NDC) reporting requirements for the product used on inpatient and outpatient claims.
- Review the inpatient ICD-10-PCS procedure codes assigned, to ensure that the correct procedure code for the CAR-T product was selected.
- Review for correct revenue codes for the CAR-T product charge (0891), product administration charge (0874), cell collection (0871), and cell lab (0872-0873).

## REVENUE INTEGRITY PROCESS *(CONTINUED)*

- Review for correct CPT codes on outpatient claims for CAR-T services.
- Review to ensure the accuracy of units billed, that the prior authorization number is on the claim (if applicable), and that correct dates of services are reported.
- If under clinical trial, review for:
  - Appropriate condition codes, value codes, NCT number, and diagnosis code Z00.6; and
  - Other payer-specific reporting requirements needed to bill for routine costs.
- If under expanded access:
  - Review for the presence of the NUBC condition code 90 and presence of the note “Expand Acc Use” in the Billing Note NTE02 or remarks field (if a Medicare account).<sup>41</sup>
  - If a commercial payer, consider reporting value code 90 with a zero to communicate that no cell therapy product cost was incurred.

### TRACKING AFTER SUBMISSION & RESOLVING DENIALS

Given the high dollar charges for CAR-T cases, providers may want to track these claims post-submission and review the remittances carefully.

- Consider using a cumulative tracking sheet for all CAR-T cases since inception of the program and divided by fiscal year to track total charges for the episode of care; whether administered inpatient or outpatient; product type; payer; reimbursement and whether there were denials, appeals, and, if appealed, whether the denial was overturned.
  - It may be useful to regularly circulate this tracking sheet, or a high-level summary, to the clinical department, treating clinicians, and any relevant leadership and/or executives.
- Resolve any claim rejections quickly and be prepared to submit additional documentation to the payer, including medical records.
- If records are requested to process the claim or provided as part of an appeal, include the prior authorization number on any documents submitted and organize the records submitted so that key coverage and medical necessity information is easily referenced in the medical record (including the covered diagnosis for CAR-T therapy, previously tried and failed treatments with details of any results, inadequate response, or adverse events). If appropriate, also include additional supporting documents such as: peer-reviewed journal articles, medical literature, treatment studies or clinical trials, consensus statements, or treatment guidelines (e.g., American Society of Transplantation and Cellular Therapy, National Comprehensive Cancer Network [NCCN] or American Society of Hematology [ASH]).

# REVENUE INTEGRITY PROCESS *(CONTINUED)*

## EXPECTED REIMBURSEMENT

Upon initiation of CAR-T services at the hospital, it is best practice for the payer contracting department staff to initiate discussions with each of the hospital's major commercial payers to better understand the applicability of any existing contracts to CAR-T and how the reimbursement methodology would work. This will inform if a contract amendment is needed and/or if single case agreements should be pursued in the interim. This will help with any resolution needed on an individual case.

The following is suggested to help verify accurate reimbursement:

- Carefully review the applicable payer contract and whether CAR-T is included under the contract or whether a separate single patient or case agreement needs to be developed.
- Partner with the payer contracting team to proactively reach out to the patient's payer and understand reimbursement terms for the case.
- Check that all of the requirements outlined are met for eligibility, coverage, coding, and claim submission.
- For commercial payers, identify the payment methodology for the payer and whether the patient received the CAR-T product as an outpatient or inpatient. Determine the applicable payment formula for each claim and each type of CAR-T service (such as cell collection; lab processing; cell therapy administration; and post-administration management of the patient, including addressing any complications which may or may not require further hospital services).
- For payers that utilize DRG-based methodologies for inpatient administration of CAR-T, determine the base rate, wage adjustment, other hospital-specific adjustments, outlier threshold, hospital overall cost-to-charge ratio, and the total covered billed charges on the inpatient claim to estimate payment.



# CODING GRIDS

Click each button below to see the most current grids.

CODING OPTIONS FOR  
ADMINISTRATION OF CAR-T

CODING OPTIONS FOR  
THE REPORTING OF CELL  
COLLECTION AND PROCESSING

CODES FOR REPORTING  
COMPLICATIONS

CODING OPTIONS FOR  
REPORTING CAR-T PRODUCTS

## REFERENCES

- <sup>1</sup> U.S. Department of Health and Human Services, *Are You a Hospital Inpatient or an Outpatient?* Baltimore (MD): Centers for Medicare and Medicaid Services, 2018. Online: <https://www.medicare.gov/Pubs/pdf/11435-are-you-an-inpatient-or-outpatient.pdf>.
- <sup>2</sup> Centers for Medicaid and Medicare Services (CMS), *Medicare Claims Processing Manual, Chapter 4 – Part B Hospital, Section 290.1*, Baltimore (MD): CMS, 2020, page 234.
- <sup>3</sup> Novitas Solutions, *Medicare News and Publications: Billing Outpatient Observation Services*, 2020. Online: <https://www.novitas-solutions.com/webcenter/portal/MedicareJL/pagebyid?contentid=00091093>
- <sup>4</sup> CMS, *Medicare Claims Processing Manual*, op cit
- <sup>5</sup> Centers for Medicare and Medicaid Services, “National Coverage Determination (NCD) for Chimeric Antigen Receptor (CAR) T-cell Therapy (NCD 110.24),” In *Medicare National Coverage Determinations*, Publication 100-03, Transmittal 10796, Washington (DC): US Department of Health and Human Services, 2021. Online: <https://www.cms.gov/medicare-coverage-database/view/ncd.aspx?ncid=374&bc=CAAAAAAAAAAAAA>
- <sup>6</sup> Centers for Medicare and Medicaid Services, Medicare Learning Network: National Coverage Determination (NCD 110.24): Chimeric Antigen Receptor (CAR) T-cell Therapy, (MM11783), Baltimore (MD): Centers for Medicare and Medicaid Services, 2020. Online: <https://www.cms.gov/files/document/mm11783.pdf>
- <sup>7</sup> Centers for Medicare and Medicaid Services, *Medicare Learning Network: National Coverage Determination (NCD 110.24): Chimeric Antigen Receptor (CAR) T-cell Therapy, (MM12177 Revised)*, Baltimore (MD): Centers for Medicare and Medicaid Services, 2021. Online: <https://www.cms.gov/files/document/mm12177.pdf>
- <sup>8</sup> Ibid.
- <sup>9</sup> Ibid.
- <sup>10</sup> Ibid.
- <sup>11</sup> Centers for Medicare and Medicaid Services, “National Coverage Determination (NCD) for Routine Costs in Clinical Trials (NCD 310.1),” In *Medicare National Coverage Determinations*, Publication 100-03, Transmittal 74, Washington (DC): US Department of Health and Human Services, 2007. Online: <https://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=1&ncdver=2&fromdb=true>
- <sup>12</sup> Ibid.
- <sup>13</sup> CMS, *National Coverage Determination (NCD) for Chimeric Antigen Receptor (CAR) T-cell Therapy (NCD 110.24)*, op. cit.
- <sup>14</sup> KFF, *Medicaid Benefits*, San Francisco (CA): KFF, no date. Online: <https://www.kff.org/statedata/collection/medicaid-benefits/>
- <sup>15</sup> National Comprehensive Cancer Network (NCCN), *NCCN Drugs & Biologics Compendium*, Plymouth Meeting (PA): NCCN, 2021. Online at: <https://www.nccn.org/compendia-templates/compendia/drugs-and-biologics-compendia>.
- <sup>16</sup> A new diagnosis code, C83.390 for primary central nervous system lymphoma, falls under this range, effective FY 2025. The code range here is depicted for the sake of brevity, and is not representing the appropriateness of the C83.390 code for the currently approved products and indications.
- <sup>17</sup> When the purpose of a visit is for the administration of CAR-T, this Z51.12 code should be reported as the principal diagnosis, and the malignancy for which CAR-T therapy is being administered should be assigned as the secondary diagnosis. Source: US Department of Health and Human Services, *ICD-10-CM Official Guidelines for Coding and Reporting, FY 2018*, Hyattsville (MD): National Center for Health Statistics, no date, page 30 of 117.

## REFERENCES

- <sup>18</sup> Lee DW, Santomaso BD, Locke FL, Komanduri KV, Grupp SA, et al., “ASTCT Consensus Grading for Cytokine Release Syndrome and Neurologic Toxicity Associated with Immune Effector Cells,” *Transplantation and Cellular Therapy*, 2019; 25(4): P625-638. DOI: <https://doi.org/10.1016/j.bbmt.2018.12.758>
- <sup>19</sup> US Department of Health and Human Services, *ICD-10-CM Browser Tool*, Hyattsville (MD): National Center for Health Statistics, no date, Online: <https://icd10cmtool.cdc.gov/>
- <sup>20</sup> American Medical Association (AMA), *CPT Professional Edition 2021 code book*, Chicago (IL): AMA, 2020.
- <sup>21</sup> US Department of Health and Human Services, *Key Initiatives, Burden Reduction, Administrative Simplification, Code Sets*, Baltimore (MD): Centers for Medicaid and Medicare Services, 2024. Online: <https://www.cms.gov/priorities/key-initiatives/burden-reduction/administrative-simplification/code-sets>
- <sup>22</sup> AMA, *Professional Edition 2021 CPT code book*, op. cit.
- <sup>23</sup> National Uniform Billing Committee (NUBC), *Summary of Cell and Gene Therapy Code Changes*, Chicago (IL): NUBC, no date. Online: <https://www.nubc.org/system/files/media/file/2020/02/Cell-Gene%20Therapy%20Code%20Changes.pdf>
- <sup>24</sup> Centers for Medicare and Medicaid Services (CMS), *Chimeric Antigen Receptor (CAR) T-Cell Therapy Revenue Code and HCPCS Setup Revisions, 2022, (SE19009)*, Baltimore (MD): CMS, 2024. Online: <https://www.cms.gov/outreach-and-education/medicare-learning-network-mln/mlnmattersarticles/downloads/se19009.pdf>
- <sup>25</sup> American Medical Association (AMA), “CPT Assistant: Cellular and Gene Therapy,” *AMA CPT Assistant*; 6(June), 2019.
- <sup>26</sup> Ibid.
- <sup>27</sup> Centers for Medicare and Medicaid Services (CMS), “CY 2025 Outpatient Prospective Payment System (OPPS) Final Rule,” *Federal Register*, 2024; 89(229): 94082. Online: <https://www.federal-register.gov/documents/2024/11/27/2024-25521/medicare-and-medicare-programs-hospital-outpatient-prospective-payment-and-ambulatory-surgical>
- <sup>28</sup> Centers for Medicare and Medicaid Services (CMS), *ICD-10*, Baltimore (MD): CMS, 2021. Online: <https://www.cms.gov/Medicare/Coding/ICD10>
- <sup>29</sup> AMA, *CPT Professional Edition 2021 code book*, op cit.
- <sup>30</sup> Centers for Medicare and Medicaid Services (CMS), “International Classification of Diseases, 10th Revision (ICD-10) and Other Coding Revisions to National Coverage Determinations (NCDs) – April 2022 (CR 1 of 2),” CMS Manual System Publication 100-20 (One-Time Notification), Transmittal 11179, Baltimore (MD): CMS, January 12, 2022. Online: <https://www.cms.gov/files/document/r11179otn.pdf>
- <sup>31</sup> Centers for Medicare and Medicaid Services (CMS), *Medicare Claims Processing Manual, Chapter 17 – Drugs and Biologicals, Section 90.2*, Baltimore (MD): CMS, 2020.
- <sup>32</sup> Centers for Medicare and Medicaid Services (CMS), “National Coverage Determination (NCD) 110.24): Chimeric Antigen Receptor (CAR) T-cell Therapy – This CR Rescinds and Fully Replaces CR 11783”, Pub 100-04 Medicare Claims Processing, Transmittal 10891, Baltimore (MD): CMS, July 20, 2021. Online: <https://www.cms.gov/files/document/r10891cp.pdf>
- <sup>33</sup> Centers for Medicare and Medicaid Services (CMS), “National Coverage Determination (NCD) 110.24): Chimeric Antigen Receptor (CAR) T-cell Therapy”, Pub 100-04 Medicare Claims Processing, Transmittal 11774, Baltimore (MD): CMS, December 30, 2022. Online: <https://www.cms.gov/files/document/r11774cp.pdf>

## REFERENCES

- <sup>34</sup> CMS, *Chimeric Antigen Receptor (CAR) T-Cell Therapy Revenue Code and HCPCS Setup Revisions*, op. cit.
- <sup>35</sup> CMS, National Coverage Determination (NCD 110.24): “*Chimeric Antigen Receptor (CAR) T-cell Therapy*”, *Pub 100-04 Medicare Claims Processing, Transmittal 11774*, op. cit.
- <sup>36</sup> Centers for Medicare and Medicaid Services (CMS), “CY 2023 Medicare Physician Fee Schedule (MPFS) Final Rule,” *Federal Register*, 2022; 87(222): 69718. Online: <https://www.federalregister.gov/documents/2022/11/18/2022-23873/medicare-and-medicaid-programs-cy-2023-paymentpolicies-under-the-physician-fee-schedule-and-other>
- <sup>37</sup> Centers for Medicare and Medicaid Services (CMS), *Medicare Learning Network: Fiscal Year (FY) 2021 Inpatient Prospective Payment System (IPPS) and Long-Term Care Hospital (LTCH) PPS Changes (MM11879 Revised)*, Baltimore (MD): CMS, 2021. Online: <https://www.cms.gov/files/document/mm11879.pdf>
- <sup>38</sup> Ibid.
- <sup>39</sup> Centers for Medicare and Medicaid Services (CMS), “FY 2023 Inpatient Prospective Payment System (IPPS) Final Rule,” *Federal Register*, 2022;87(153): 48896. Online: <https://www.federalregister.gov/documents/2022/08/10/2022-16472/medicare-program-hospital-inpatient-prospective-payment-systems-for-acute-care-hospitals-and-the>
- <sup>40</sup> NUBC, *Summary of Cell and Gene Therapy Code Changes*, op. cit.
- <sup>41</sup> CMS, *FY 2023 Inpatient Prospective Payment System (IPPS) Final Rule*, op. cit.