HEALTH ECONOMICS & REIMBURSEMENT

ACUTE MECHANICAL CIRCULATORY SUPPORT (MCS) CODING GUIDE

CENTRIMAG™ ACUTE CIRCULATORY SUPPORT SYSTEM INCLUDING THE CENTRIMAG™ BLOOD PUMP AND PEDIMAG™ BLOOD PUMP

Hospital Inpatient

Effective October 1, 2026 to September 30, 2027

Hospital Outpatient, Ambulatory Surgical Center, Physician

Effective January 1, 2026 to December 31, 2026

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OVERVIEW

This content is intended to provide reference material related to general guidelines for reimbursement when used consistently with the product's labeling. This content includes information regarding coverage, coding and reimbursement.

DISCLAIMER

This material and the information contained herein is for general information purposes only and is not intended, and does not constitute, legal, reimbursement, business, clinical, or other advice. Furthermore, it is not intended to and does not constitute a representation or guarantee of reimbursement, payment, or charge, or that reimbursement or other payment will be received. It is not intended to increase or maximize payment by any payer. Abbott makes no express or implied warranty or guarantee that the list of codes and narratives in this document is complete or error-free. Similarly, nothing in this document should be viewed as instructions for selecting any particular code, and Abbott does not advocate or warrant the appropriateness of the use of any particular code. The ultimate responsibility for coding and obtaining payment/reimbursement remains with the customer. This includes the responsibility for accuracy and veracity of all coding and claims submitted to third-party payers. In addition, the customer should note that laws, regulations, and coverage policies are complex and are updated frequently, and, therefore, the customer should check with its local carriers or intermediaries often and should consult with legal counsel or a financial, coding, or reimbursement specialist for any questions related to coding, billing, reimbursement, or any related issues. This material reproduces information for reference purposes only. It is not provided or authorized for marketing use.

IMPORTANT NOTE

Medicare participation varies by provider. The payment rates shown are the National Average Medicare payment rates. Reimbursement listed may not apply to all institutions despite Medicare participation.

REIMBURSEMENT SUPPORT

REIMBURSEMENT HOTLINE

Abbott offers a reimbursement hotline, which provides live coding and reimbursement information from dedicated reimbursement specialists. Coding and reimbursement assistance is provided subject to the disclaimers set forth in this guide.

8 a.m. to 5 p.m. CT, Monday – Friday
Call (855) 569-6430
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REIMBURSEMENT FIELD TEAM

To contact a reimbursement specialist for coverage, coding or payment questions, scan the QR code or send an email to abbotteconomics@abbott.com.

COVERAGE FOR ACUTE CIRCULATORY SUPPORT SYSTEM

Acute Mechanical Circulatory Support Systems, such as the CentriMag™ device, are generally covered as a medically necessary procedure under most commercial payer policies for Mechanical Circulatory Assist Devices (Ventricular Assist Devices, Percutaneous Ventricular Assist Devices and Artificial Hearts). These commercial policies have been long-established as a clinically efficacious treatment for temporary circulatory support for individuals who have limited options for short-term cardiac support to improve function of the native heart as part of life-sustaining therapy. The Centers for Medicare and Medicaid Services (CMS) does not have a national coverage determination (NCD) for external heart assist procedures involving technologies like CentriMag™ System and coverage is based on medical necessity. It is strongly encouraged that you verify with your local and commercial payer policies to ensure medical appropriateness.

Please refer to the last page for Important Safety Information for CentriMag™ Acute Circulatory Support System and PediMag™ Blood Pump.

TYPE OF SUPPORT	REGULATORY PATHWAY	INDICATION
Extracorporeal Membrane Oxygenation (ECMO)	510(k) Clearance	Periods greater than six hours to provide assisted extracorporeal circulation and physiologic gas exchange of the patients' blood for adult patients with acute respiratory failure and/or acute cardiopulmonary failure, where other available treatment options have failed, and continued clinical deterioration is expected or the risk of death is imminent*
Left ventricular support	PMA Approval	Up to 30 days to treat post-cardiotomy patients who fail to wean from cardiopulmonary bypass*
Right ventricular support	PMA Approval	Up to 30 days to treat post-cardiotomy patients who fail to wean from cardiopulmonary bypass*
	Humanitarian Device Exemption	Up to 30 days for patients in cardiogenic shock due to acute right ventricular failure*
Bi-ventricular support	PMA Approval	Up to 30 days to treat post-cardiotomy patients who fail to wean from cardiopulmonary bypass*
In use during Cardiopulmonary support	PMA Approval	Periods appropriate to cardiopulmonary bypass (up to six hours)

*Excludes PediMag™

See Important Safety Information referenced within on page 13-14

HOSPITAL INPATIENT[2]

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ACUTE VAD | ECMO

The CentriMag™ Blood Pump is listed as a short-term external heart assist system in the heart and great vessels in the ICD-10 PCS code set under Appendix C: Device Key. It is important to document and code the CentriMag™ Acute Circulatory Support System as an external heart assist device with the appropriate approach, even if other concomitant procedures are performed.

ICD-10-PCS CODES[4]

External assist device short-term heart assist system

ICD-10-PCS CODE[4]	DESCRIPTION	TYPICAL MS-DRG	MEDICARE RATE
CHOOSE THE APPROPRIATE ICD-10 PROCEDURE CODE BASED ON CLINICAL TYPE			
02HA0RZ	Insertion of Short-term External Heart Assist System into Heart, Open Approach	001 w/MCC 002 w/o MCC	$207,504 $81,308
CHOOSE THE APPROPRIATE ICD-10 PROCEDURE CODE BASED ON DURATION OR SUPPORT TYPE			
5A02116	Assistance with cardiac output using other pump, intermittent		
5A02216	Assistance with cardiac output using other pump, continuous		

According to the CMS manuals, the transferring hospital receives a per diem, prorated from the expected MS-DRG. The per diem is derived from the MS-DRG's average length of stay when the transferring facility submits a claim to Medicare with the discharge status code of 02, "discharged/transferred to another short term general hospital for inpatient care."

The second hospital can expect full MS-DRG payment, even if the MS-DRG assignment turns out to be different from the transferring hospital. Hospital-specific factors-such as an ownership relation between the transferring and receiving hospital-could affect payment.

Refer to the CMS Medicare Claims Processing Manual Chapter 3 - Inpatient Hospital Billing "Transfers".[5]

Biventricular short-term heart assist system

ICD-10-PCS CODE[4]	DESCRIPTION	TYPICAL MS-DRG	MEDICARE RATE
CHOOSE THE APPROPRIATE ICD-10 PROCEDURE CODE BASED ON CLINICAL TYPE			
02HA0RS	Insertion of Biventricular Short-term External Heart Assist System into Heart, Open Approach	215 Other heart assist system implant	$74,936
CHOOSE THE APPROPRIATE ICD-10 PROCEDURE CODE BASED ON DURATION OR SUPPORT TYPE			
5A02116	Assistance with cardiac output using other pump, intermittent		
5A02216	Assistance with cardiac output using other pump, continuous		

HOSPITAL INPATIENT[2]

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ICD-10-PCS CODES[4]

Intraoperative external short-term heart assist system

ICD-10-PCS CODE[4]	DESCRIPTION	USE OF CARDIAC CATHETERIZATION	TYPICAL MS-DRG	MEDICARE RATE
CHOOSE THE APPROPRIATE ICD-10 PROCEDURE CODE BASED ON APPROACH AND SUPPORT TYPE				
CHOOSE THE APPROPRIATE ICD-10 PROCEDURE CODE BASED ON APPROACH TYPE				
02HA0RJ	Insertion of Short-term External Heart Assist System in Heart and Great Vessels, Intraoperative, Open Approach	YES	216 w/MCC 217 w/CC 218 w/o CC/MCC	$73,020 $50,284 $50,284
CHOOSE THE APPROPRIATE ICD-10 PROCEDURE CODE BASED ON APPROACH TYPE				
5A02116	Assistance with cardiac output using other pump, intermittent	NO	219 w/MCC 220 w/CC 221 w/o MCC	$56,455 $40,685 $34,827
5A02216	Assistance with cardiac output using other pump, continuous			

Revision external short-term heart assist system

ICD-10-PCS CODE[4]	DESCRIPTION	TYPICAL MS-DRG	MEDICARE RATE
CHOOSE THE APPROPRIATE ICD-10 PROCEDURE CODE BASED ON CLINICAL APPROACH			
02WA0RS	Revision of Biventricular Short-term External Heart Assist System in Heart, Open Approach	215 Other heart assist system implant	$74,936
02WA0RZ	Revision of Short-term External Heart Assist System in Heart, Open Approach		

Replacement external short-term heart assist system

ICD-10-PCS CODE[4]	DESCRIPTION	TYPICAL MS-DRG	MEDICARE RATE
CHOOSE THE APPROPRIATE ICD-10 PROCEDURE CODE BASED ON CLINICAL APPROACH			
02WA0RZ	Revision of Short-term External Heart Assist System in Heart, Open Approach	001 w/MCC 002 w/o MCC	$207,504 $81,308

The presence of Major Complications and/or Comorbidities (MCCs) diagnosis(es) determine whether the hospital payment maps to MS-DRG 001 or MS-DRG 002.

HOSPITAL INPATIENT[2]

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ICD-10-PCS CODES[4]

DRG mapping for Extracorporeal Membrane Oxygenation (ECMO) Procedures

TYPE OF ECMO SUPPORT	TYPICAL MS-DRG	MEDICARE RATE
Non-Intraoperative ECMO	003	$157,193
Intraoperative ECMO	NA	ECMO was in support of a surgical (O.R.) procedure and the primary surgical procedure drives DRG assignment

SCENARIOS FOR ECMO PROCEDURES

SCENARIO 1: PATIENT IS PLACE ON ECMO AND TRANSFERRED TO ANOTHER HOSPITAL	
Tranferring hospital	003 (Prorated)*
Receiving hospital	003 (Full)

*According to the CMS manuals, the transferring hospital receives a per diem, prorated from the expected MS-DRG. The per diem is derived from the MS-DRG's average length of stay when the transferring facility submits a claim to Medicare with the discharge status code of 02, "discharged/transferred to another short-term general hospital for inpatient care."

The second hospital can expect full MS-DRG payment, even if the MS-DRG assignment turns out to be different from the transferring hospital. Hospital-specific factors-such as an ownership relation between the transferring and receiving hospital could affect payment.

Refer to the CMS Claims Processing Manual Chapter 3 - Inpatient Hospital Billing "Transfers".[5]

SCENARIO 2: PATIENT IS PLACED ON ECMO AND TRANSFERRED TO ANOTHER HOSPITAL		
ICD-10-PCS CODE	DESCRIPTION	TYPICAL MS-DRG ASSIGNMENT
CHOOSE THE APPROPRIATE ICD-10 PROCEDURE CODE BASED ON CLINICAL TYPE		
Primary Surgical Code	Major surgical procedure done in concert with intraoperative ECMO	ECMO was in support of a surgical (O.R.) procedure and the primary surgical procedure drives DRG assignment
INTRAOPERATIVE ECMO Intraoperative ECMO procedures are designated as non-OR procedures. As such the MS DRG Assignment is driven by the primary surgical procedure.		

Scenarios illustrated are for example only. This does not constitute coding guidance. It is important to verify clinical scenarios with your providers and coders. Coding scenarios were verified by American Academy of Professional Coders (AAPC) certified coder.

PHYSICIAN[1]

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CPT‡ CODE	DESCRIPTION	PHYSICIAN		
		WORK RVU	FACILITY RATE	OFFICE RATE
ACUTE IMPLANT				
33975	Insertion of ventricular assist device; extracorporeal, single ventricle	24.38	$1,178	NA
33976	Insertion of ventricular assist device; extracorporeal, biventricular	29.98	$1,447	NA
ACUTE MCS SYSTEM REMOVAL				
33977	Removal of ventricular assist device; extracorporeal, single ventricle	20.34	$1,035	NA
33978	Removal of ventricular assist device; extracorporeal, biventricular	24.38	$1,237	NA

The CPT‡ codes above describe possible surgeon services in the hospital inpatient setting where the Acute MCS system procedure (e.g., CentriMag™ System or PediMag™ Pumps) occurs. These services are restricted to the inpatient hospital site of service.

It is incumbent upon the physician to determine which, if any modifiers should be used first.

NA: There is no established Medicare payment in this setting

See Important Safety Information referenced within on page 13-14

PHYSICIAN[1]

Effective January 1, 2026 to December 31, 2026

ACUTE VAD | ECMO

CPT‡ CODE	DESCRIPTION	PHYSICIAN		
		WORK RVU	FACILITY RATE	OFFICE RATE
EXTRACORPOREAL MEMBRANE OXYGENATION (ECMO)/EXTRACORPOREAL LIFE SUPPORT (ECLS) PROVIDED BY PHYSICIAN				
33946	Initiation, veno-venous	5.85	$280	NA
33947	Initiation, veno-arterial	6.46	$308	NA
33948	Daily management, each day, veno-venous	4.61	$217	NA
33949	Daily management, each day, veno-arterial	4.49	$209	NA

Per CPT‡ code initiation codes on day of initial service, daily management codes are excluded on day of initial service.

The codes presented are not an exhaustive list of the codes which represent the work associated with ECMO support. Please see the CPT‡ code handbook for additional codes which may be applicable to other components of the ECMO circuit.

The CPT‡ codes above describe possible surgeon services in the hospital inpatient setting where the Acute MCS system procedure (e.g., CentriMag™ System or PediMag™ Pumps) occurs. These services are restricted to the inpatient hospital site of service.

It is incumbent upon the physician to determine which, if any modifiers should be used first.

NA: There is no established Medicare payment in this setting

See Important Safety Information referenced within on page 13-14

ADDITIONAL CODES

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ACUTE VAD | ECMO

ICD-10-CM CODES[3]

Diagnosis codes are used by both hospitals and physicians to document the medical necessity of the procedure. For Mechanical Circulatory Support patients, there are many possible diagnosis code scenarios and a wide variety of possible combinations. The limited diagnosis list is not meant to be an exhaustive representation of the diagnosis options for the procedure. It is always the responsibility of health care providers to choose the most appropriate diagnosis code(s) representative of the patient's clinical condition. The customer should check with their local carriers or intermediaries and should consult with legal counsel or a financial, coding or reimbursement specialist for coding, reimbursement or billing questions related to ICD-10-CM diagnosis codes.

ICD-10-CM CODE	DESCRIPTION
CODES THAT MAY APPLY	
I23.0 - I23.9	Certain current complications following ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction (within the 28 day period)
I50.1 - I50.9	Heart failure
I97.0	Postcardiotomy syndrome
I97.110	Postprocedural cardiac insufficiency following cardiac surgery
I97.120	Postprocedural cardiac arrest following cardiac surgery
I97.130	Postprocedural heart failure following cardiac surgery
I97.190	Other postprocedural cardiac functional disturbances following cardiac surgery
R57.0	Cardiogenic shock
T82.897	Other specified complication of cardiac prosthetic devices, implants and grafts
T86.298	Other complications of heart transplant
Z76.82	Awaiting organ transplant status (awaiting heart transplant)
Z95.811	Presence of heart assist device

ADDITIONAL CODES

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ACUTE VAD | ECMO

ICD-10-CM CODES[3]

Diagnosis codes are used by both hospitals and physicians to document the medical necessity of the procedure. For Mechanical Circulatory Support patients, there are many possible diagnosis code scenarios and a wide variety of possible combinations. The limited diagnosis list is not meant to be an exhaustive representation of the diagnosis options for the procedure. It is always the responsibility of health care providers to choose the most appropriate diagnosis code(s) representative of the patient's clinical condition. The customer should check with their local carriers or intermediaries and should consult with legal or financial counsel, coding or reimbursement specialist for coding, reimbursement or billing questions related to ICD-10-CM diagnosis codes.

ICD-10-CM CODE	DESCRIPTION
CODES THAT MAY APPLY	
I21.0 - I21.9	ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction
A41.8	Other sepsis
I25.10 – I25.119	Atherosclerotic heart disease of native coronary artery
I50.1 - I50.9	Heart failure
I35.0	Nonrheumatic mitral valve disorders
I35.0	Nonrheumatic aortic valve disorders
I47.0	Paroxysmal tachycardia
T82.857	Stenosis of other cardiac prosthetic devices, implants and grafts
I71.0	Aortic aneurysm and dissection
J84.10	Idiopathic interstitial pneumonia Other interstitial pulmonary diseases with fibrosis
J84.11	Idiopathic interstitial pneumonia
J96.0	Acute respiratory failure
J96.2	Acute and chronic respiratory failure

RESOURCES

ACRONYM DEFINITIONS

ACRONYM	DEFINITION
APC	Ambulatory Payment Classification
ASC	Ambulatory Surgical Center
CC	Complications or Comorbidities
CMS	Centers for Medicare & Medicaid Services
HCPCS	Healthcare Common Procedure Coding System
LCD	Local Coverage Determination
MCC	Major Complications or Comorbidities
MPPR	Multiple Procedure Payment Reduction
MS-DRG	Medicare Severity Diagnosis Related Group
NCD	National Coverage Determination
NTAP	New Technology Add-on Payment
PI	Payment Indicator
RVU	Relative Value Unit
SI	Status Indicator

IMPORTANT SAFETY INFORMATION

CentriMag™ Circulatory Support System

Rx Only
Brief Summary: Prior to using these devices, please review the Instructions for Use for a complete listing of indications, contraindications, warnings, precautions, potential adverse events and directions for use.

CentriMag™ Circulatory Support System Indications [PMA Approval; 30-day use]: Temporary circulatory support for up to 30 days for one or both sides of the heart to treat post-cardiotomy patients who fail to wean from cardiopulmonary bypass, providing a bridge to decision when it is unclear whether the patient's heart will recover or whether the patient will need alternative, longer-term therapy.

CentriMag™ Circulatory Support System Contraindications [PMA Approval; 30-day use]: The CentriMag™ Circulatory Support System is contraindicated for use as a cardiotomy suction device. The system is also contraindicated for patients who are unable or unwilling to be treated with an appropriate anticoagulant such as Heparin or a comparable alternative.

CentriMag™ Circulatory Support System Adverse Events [PMA Approval; 30-day use]: Adverse events that may be associated with mechanical circulatory support can include, but are not limited to, the following: bleeding on device support, hemolysis, infection, renal failure/dysfunction/complication, respiratory dysfunction, hepatic dysfunction, cardia arrhythmias (atrial or ventricular), thromboembolism (venous and arterial non-CNS), hypotension, hypertension, device malfunction or failure, psychiatric events, right heart failure, and death.

Humanitarian Device Statement: Caution: Humanitarian Device. The CentriMag Circulatory Support System is authorized by Federal Law for temporary circulatory support for up to 30 days for patients in cardiogenic shock due to right ventricular failure. The effectiveness of this device for this use has not been demonstrated.

CentriMag™ RVAS Indications [Humanitarian Exemption Device (HDE) Approval; 30-day use]: The CentriMag Circulatory Support System is intended to provide temporary circulatory support for up to 30 days for patients in cardiogenic shock due to acute right ventricular failure.

CentriMag™ RVAS Contraindications [Humanitarian Exemption Device (HDE) Approval; 30-day use]: The CentriMag Circulatory Support System is contraindicated for use as a cardiotomy suction device. The system is also contraindicated for patients who are unable or unwilling to be treated with an appropriate anticoagulant such as Heparin or a comparable alternative.

CentriMag™ Acute Circulatory Support System Temporary Expanded Indication: The FDA issued an enforcement policy guidance document in April 2020 allowing for FDA-cleared or approved cardiopulmonary bypass devices to be used in an ECMO circuit to treat patients who are experiencing acute respiratory failure and/or acute cardiopulmonary failure during the COVID-19 public health emergency. The CentriMag™ System including the CentriMag™ Blood Pump and PediMag™ Blood Pump are indicated for use as part of an ECMO circuit for longer than 6 hours to treat patients with acute respiratory failure and/or acute cardiopulmonary failure.

CentriMag™ Blood Pump Indications [510(k) Clearance; 6-hour use]: The CentriMag Circulatory Support System is indicated to pump blood through the extracorporeal bypass circuit for extracorporeal circulatory support for periods appropriate to cardiopulmonary bypass (up to six hours). It is also indicated for use in extracorporeal support systems (for periods up to six hours) not requiring complete cardiopulmonary bypass (e.g. valvuloplasty, circulatory support during mitral valve reoperation, surgery of the vena cava or aorta, liver transplants etc.).

CentriMag™ Blood Pump Contraindications [510(k) Clearance; 6-hour use]: The CentriMag Circulatory Support System is contraindicated for use as a cardiotomy suction device. The system is also contraindicated for patients who are unable or unwilling to be treated with an appropriate anticoagulant such as Heparin or a comparable alternative.

IMPORTANT SAFETY INFORMATION (CONTINUED)

CentriMag™ Circulatory Support System

PediMag™ Blood Pump Indications for Use [510(k) Clearance; 6-hour use]: The PediMag Blood Pump is indicated for use with the CentriMag Circulatory Support System console and motor to pump blood through the extracorporeal bypass circuit for extracorporeal circulatory support for periods appropriate to cardiopulmonary bypass (up to six hours) for surgical procedures such as mitral valve reoperation. It is also indicated for use in extracorporeal support systems (for periods up to six hours) not requiring complete cardiopulmonary bypass (e.g. valvuloplasty, circulatory support during mitral valve reoperation, surgery of the vena cava or aorta, liver transplants etc.).

PediMag™ Blood Pump Contraindications [510(k) Clearance; 6-hour use]: The PediMag Blood Pump is contraindicated for use as a cardiotomy suction device. The CentriMag Circulatory Support System is contraindicated for use as a cardiotomy suction device. The system is also contraindicated for patients who are unable or unwilling to be treated with an appropriate anticoagulant such as Heparin or a comparable alternative.

CentriMag™ Blood Pump Indication [ECMO, 510(k) Clearance; >6-hour use]: The CentriMag™ Blood Pump for use with the CentriMag™ Acute Circulatory Support System (Motor, Monitor, Console, and Flow Probes) is indicated for controlling blood flow as part of an extracorporeal membrane oxygenation (ECMO) circuit. ECMO is intended to provide assisted extracorporeal circulation and physiologic gas exchange of the patients' blood for adult patients with acute respiratory failure and/or acute cardiopulmonary failure, where other available treatment options have failed, and continued clinical deterioration is expected or the risk of death is imminent.

CentriMag™ Blood Pump Indication [ECMO, 510(k) Clearance; >6-hour use]: The CentriMag™Blood Pump for use with the CentriMag™ Acute Circulatory Support System (Motor, Monitor, Console, and Flow Probes) is indicated for controlling blood flow as part of an extracorporeal membrane oxygenation (ECMO) circuit. ECMO is intended to provide assisted extracorporeal circulation and physiologic gas exchange of the patients' blood for adult patients with acute respiratory failure and/or acute cardiopulmonary failure, where other available treatment options have failed, and continued clinical deterioration is expected or the risk of death is imminent.

CentriMag™ Blood Pump Contraindications [ECMO, 510(k) Clearance; >6-hour use]: The CentriMag™ System is contraindicated for use as a cardiotomy suction device. The System is also contraindicated for patients who are unable or unwilling to be treated with an appropriate anticoagulant such as Heparin or a comparable alternative.

REFERENCES

1. Physician Prospective Payment-Final rule with Comment Period and Final CY2026 Payment Rates. CMS-1832-F: https://www.cms.gov/medicare/payment/fee-schedules/physician/federal-regulation-notices/cms-1832-f
2. Hospital Inpatient Prospective Payment-Final Rule Home Page FY 2027 CMS-1849-F: https://www.cms.gov/medicare/payment/prospectivepayment-systems/acute-inpatient-pps/fy-2026-ipps-final-rule-home-page
3. CMS 2027 ICD-10-CM: https://www.cms.gov/medicare/coding-billing/icd-10-codes
4. CMS 2027 ICD-10-PCS: https://www.cms.gov/files/document/2027-official-icd-10-pcs-coding-guidelines.pdf
5. CMS Medicare Claims Processing Manual Chapter 3 - Inpatient Hospital Billing. https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/clm104c03.pdf#page=112

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