



# The remedē<sup>®</sup> System Hospital Billing Guide

This guide contains hospital coding and reimbursement information for procedures associated with the placement of the **remedē** System to treat moderate to severe central sleep apnea.

**Disclaimer:** The information provided in this guide is general reimbursement information only; it is not legal advice, nor is it advice about how to code, complete or submit any claim for payment, nor is it intended to increase or maximize reimbursement by any third-party payer. All coding and reimbursement information is subject to change without notice. The content provided by the Center for Medicare and Medicaid Services is updated frequently. It is the responsibility of the health services provider to confirm the appropriate coding required by their local Medicare carriers, fiscal intermediaries, and commercial payers.

ZOLL provides reimbursement case management and hotline services in order to support patient access to the **remedē** System therapy. We provide hands-on assistance to physicians and hospitals with prior authorizations and appeals through our **remedē** Patient Access Program. We also provide reimbursement support of billing, coding, and coverage related activities:

- Prior authorizations
- Prior authorization appeals/peer-to-peers
- Claim appeals
- Billing/coding/coverage questions

For questions or case management support, please call the **remedē** Reimbursement Hotline at **1-952-540-4470** or email questions to [reimbursement@remede.zoll.com](mailto:reimbursement@remede.zoll.com).

This guide and all supporting documents are available for download at [remede.zoll.com/reimbursement](https://remede.zoll.com/reimbursement).

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# TRANSVENOUS PHRENIC NERVE STIMULATION FOR CENTRAL SLEEP APNEA

## Therapy Overview

The **remedē**® System is an implantable system that safely and effectively treats moderate to severe Central Sleep Apnea (CSA) in adult patients.<sup>1</sup> CSA is a serious breathing disorder that disrupts the normal breathing pattern during sleep and has been shown to negatively impact quality of life and cardiovascular health.<sup>2</sup> The **remedē** System is an implantable system that stimulates a nerve in the chest (the phrenic nerve) to send signals to the large muscle that controls breathing (the diaphragm).

In a clinical study, the **remedē** System has been shown to significantly improve CSA patient outcomes:

- 96% reduction in Central Apnea Index<sup>3</sup>
- 95% of patients reported they would "elect to have the medical procedure again"<sup>4</sup>
- 78% of patients reported improved quality of life<sup>4</sup>
- Significant reduction in arousals and improvement in sleep architecture<sup>3</sup>

## Device and Implant Procedure

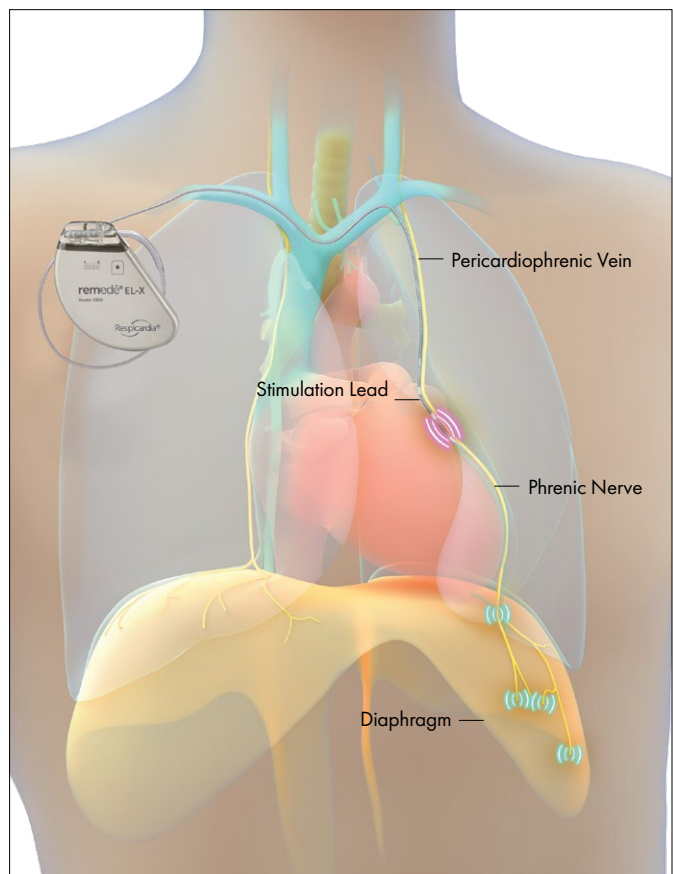
The **remedē** System is placed during a minimally invasive procedure. The system consists of a battery powered Implantable Pulse Generator (IPG) device placed under the skin in the upper chest area with one or two small thin wires (leads). One lead delivers the therapy to stimulate the phrenic nerve (stimulation lead). For select models, an optional sensing lead may be used for diagnostic purposes to sense breathing (sensing lead).

## Postoperative Care

Postoperative care is recommended to optimize therapy with the **remedē** System. Regular patient follow-up should be scheduled every 3-6 months to monitor the condition of the IPG battery and to confirm that therapy settings are appropriately programmed.

The IPG should be replaced when the IPG battery has been depleted and either the Elective Replacement Indicator (ERI) or end of life (EOL) indicator is displayed on the **remedē** System programmer.

The decision to remove the **remedē** System is the responsibility of the physician and patient, and should be determined on a case-by-case basis.



# COVERAGE

## FDA Approval

The **remedē**® System received Premarket Approval (PMA) from the FDA on October 6, 2017. The FDA-approved indications for use are as follows:

**Indications for use:** The **remedē** System is an implantable phrenic nerve stimulator indicated for the treatment of moderate to severe Central Sleep Apnea (CSA) in adult patients.

**Contraindications:** The **remedē** System is contraindicated for the following:

- Patients with an active infection
- Patients known to require Magnetic Resonance Imaging (MRI)

The Instructions for Use document provides further information regarding the procedure, indications for use, contraindications, warnings, precautions, and potential adverse events. The FDA has posted 1) the Summary of Safety and Effectiveness Data (SSED), 2) the FDA Approval Letter, 3) the Implant System Directions for Use (Physician Labeling), and 4) the Patient Guide (Patient Labeling) on its website located at:

<https://www.fda.gov/medical-devices/recently-approved-devices/remeder-system-p160039>

## Medicare Coverage

Currently, there is no National Coverage Determination (NCD) related to the **remedē** System. Check with your local Medicare Administrative Contractor (MAC) regarding any Local Coverage Determinations (LCDs) related to the **remedē** System. Medicare may cover the **remedē** System on a case-by-case basis, with evidence of medical necessity. While traditional Medicare does not require or allow prior authorization or prior approval for procedures, Medicare Advantage plans are managed by commercial payers who may require prior authorization for Medicare Advantage patients. Check with your plan administrator for any prior authorization requirements.

## Private Payer Coverage

Commercial insurance coverage policies vary and a prior authorization is recommended even if it is not required by the payer. Proceeding without a prior authorization may result in a claim denial and non-payment. We encourage health care professionals (HCPs) to contact payer(s) directly with questions regarding coverage policies or guidelines for the **remedē** System.

ZOLL offers the **remedē** Patient Access Program which can assist in determining the availability of coverage for your patients and facilitating prior authorization support services.

## Reimbursement Denials

The **remedē**® System is currently classified with CPT® Category III codes by the American Medical Association. CPT Category III codes are a set of temporary codes that allow data collection for emerging technologies, services, procedures, and service paradigms.<sup>6</sup> Many payers initially deny therapies with a CPT III code as investigational or experimental and an appeal may be required to obtain a successful prior authorization or claim approval for the **remedē** System. Most commercial health plans have a method by which denials can be appealed through a process documented in the plan Provider Manual. The **remedē** Patient Access Program can assist you with this process. Contact the **remedē** Reimbursement Hotline for additional information and resources to support your patient's appeal process.

## CODING

This coding information is provided for general reimbursement information purposes only. It is not intended to provide advice about how to code, complete or submit any claim for payment, nor is it intended to increase or maximize reimbursement by any third-party payer. It is the responsibility of the health services provider to confirm the appropriate coding required by their local Medicare carriers, fiscal intermediaries, and commercial payers.

## Diagnosis Codes

The **remedē** System is used to treat moderate to severe Central Sleep Apnea (CSA) in adult patients. Diagnosis coding for Central Sleep Apnea may include the following codes:

### ICD-10-CM Diagnosis Codes

ICD-10-CM CODE <sup>5</sup>	DESCRIPTION
<b>Insertion/Replacement/Removal</b>	
G47.31	Central Sleep Apnea
G47.32	Central Sleep Apnea due to high altitude periodic breathing
G47.37	Central sleep apnea in conditions classified elsewhere
<b>Procedure or Device Follow-up Care</b>	
Z45.42	Encounter for adjustment and management of neuropacemaker; brain, peripheral nerve, spinal cord

## Hospital Outpatient Codes

Hospitals report outpatient procedures using CPT® codes. The **remedē**® System is currently classified as a CPT Category III code, which is indicated by the alphanumeric indicator “T” at the end of each code.

For hospital outpatient payments, Medicare assigns each CPT code to a specific Ambulatory Payment Classification (APC). Each APC has a fixed payment amount which includes the cost of any devices. The Status Indicator (SI) “J1” indicates the primary code and all other procedures performed are considered adjunctive and included in the single C-APC payment rate. Codes with Status Indicator “S” means that the code is not subject to a reduction in payment when submitted with another higher-ranked code but does not receive separate payment when included on a claim with another J1 code. Regardless of whether a code receives separate payment, all appropriate HCPCS and CPT codes that correctly describe procedures performed and documented may be billed.

Medicare Payment Status Indicators, Ambulatory Payment Classifications (APC), and national average payments are provided below for procedures commonly associated with the **remedē** System. The Medicare fee schedules listed are a national average and have not been geographically or wage adjusted.

### Hospital Outpatient Codes

CPT® CODE <sup>6</sup>	DESCRIPTION	OPPS APC <sup>7</sup>	OPPS STATUS INDICATOR <sup>7</sup>	2023 MEDICARE NATIONAL AVERAGE PAYMENT <sup>7</sup>
<b>Insertion/Replacement</b>				
0424T	Insertion or replacement of neurostimulator system for treatment of central sleep apnea; complete system (transvenous placement of right or left stimulation lead, sensing lead, implantable pulse generator)	1581	S	\$55,000.50
0425T	sensing lead only	5463	J1	\$11,952.59
0426T	stimulation lead only	5463	J1	\$11,952.59
0427T	pulse generator only	5465	J1	\$29,358.48
<b>Removal</b>				
0428T	Removal of neurostimulator system for treatment of central sleep apnea; pulse generator only	5461	J1	\$3,247.68
0429T	sensing lead only	5461	J1	\$3,247.68
0430T	stimulation lead only	5461	J1	\$3,247.68
0431T	Removal and replacement of neurostimulator system for treatment of central sleep apnea, pulse generator only	5465	J1	\$29,358.48
<b>Repositioning</b>				
0432T	Repositioning of neurostimulator system for treatment of central sleep apnea; stimulation lead only	5461	J1	\$3,247.68
0433T	sensing lead only	5461	J1	\$3,247.68
<b>Programming</b>				
0434T	Interrogation device evaluation implanted neurostimulator pulse generator system for central sleep apnea	5742	S	\$99.81
0435T	Programming device evaluation of implanted neurostimulator pulse generator system for central sleep apnea; single session	5742	S	\$99.81
0436T	during sleep session	5724	S	\$934.38

Hospitals use HCPCS Level I (eg, CPT®) and HCPCS Level II codes to report hospital outpatient services. CPT codes are assigned for the implant procedure and HCPCS II codes are assigned to identify the device itself. Level II HCPCS codes are reported by facilities when they have purchased and supplied the device and are required to be reported to Medicare. The following HCPCS Level II C-codes may be appropriate for Medicare hospital outpatient reporting. Some non-Medicare payers recognize HCPCS Level II L-codes and the following HCPCS Level II L-codes may be appropriate for non-Medicare payers. In general, C-codes are used for billing Medicare and L-codes are used for billing private payers, although some private payers may also accept C-codes.

## HCPCS Level II Device Crosswalk - New Patient (de novo) Implant Procedure

DEVICE CATEGORY	DEVICE DESCRIPTION	MODEL NUMBER(S)	HCPCS C-CODE(S) <sup>8</sup>	HCPCS L-CODE(S) <sup>8</sup>
IPG	Implantable Pulse Generator (IPG)	1001, 1100, 1600	C1823	L8686
Stimulation Lead	LQS Stimulation Lead	4065, 4165, 4665	C1823	L8680
	R Stimulation Lead	3102, 3103, 3652, 3653		
Delivery System	Guide Catheter	7120-S	C1887	n/a
Lead Test Adapter	EP Lab Lead Test Adapter single use, non-implantable	1007	n/a	n/a
Programmer	System Programmer & Wand	1002A/1004A/1004A-F	C1787	L8681

**NOTE:** The HCPCS code C1823 describes the entire **remedē** System and CMS has established a medically unlikely edit (MUE) of one for this code. This code is most often used for a new patient and is only appropriate when the full system is implanted. A comprehensive charge should be inclusive of all implantable medical device components for the system, including a sensing lead from another manufacturer, if used.

## HCPCS Level II Device Descriptions

HCPCS CODE	HCPCS LONG DESCRIPTION <sup>8</sup>
C1767	Generator, neurostimulator (implantable), non-rechargeable
C1778	Lead, neurostimulator (implantable)
C1787	Patient programmer, neurostimulator
C1823	Generator, neurostimulator (implantable), non-rechargeable, with transvenous sensing and stimulation leads.
C1887	Catheter, guiding
L8686	Implantable neurostimulator pulse generator, single array, non-rechargeable, includes extension
L8680	Implantable neurostimulator electrode, each
L8681	Patient programmer (external) for use with implantable programmable neurostimulator pulse generator, replacement only



## Hospital Inpatient Codes

ICD-10-PCS procedure codes are used by hospitals to report inpatient procedures. Each major component of the procedure is coded separately. Procedures involving the **remedē**® System may involve the following codes:

### Hospital Inpatient ICD-10-PCS Codes

ICD-10-PCS CODE <sup>9</sup>	DESCRIPTION
0JH60DZ	Insertion of multiple array stimulator generator into chest subcutaneous tissue
05H33MZ	Insertion of neurostimulator lead into right innominate (brachiocephalic) vein
05H43MZ	Insertion of neurostimulator lead into left innominate (brachiocephalic) vein
05H03MZ	Insertion of neurostimulator lead into azygos vein

Medicare uses MS-DRG codes to reimburse hospitals for inpatient admissions. Each inpatient stay is assigned to a specific diagnosis-related group (DRG) based on the ICD-10-CM diagnosis codes and ICD-10-PCS procedure codes. Only one MS-DRG is assigned for each inpatient stay, regardless of the number of procedures performed. When more than one procedure is coded, DRG assignment is based on the highest-ranked code. Each MS-DRG has a fixed payment amount which includes the cost of any devices.

While an inpatient procedure may be unlikely, a hospital inpatient procedure involving the **remedē** System may involve the following DRG codes:

### DRG Classification

DRG <sup>10</sup>	DESCRIPTOR
040	Peripheral/Cranial Nerve & other nervous system procedures with a major complication or comorbidity (MCC)
041	Peripheral/Cranial Nerve & other nervous system procedures with a complication or comorbidity (CC) or Peripheral Neurostimulator
042	Peripheral/Cranial Nerve & other nervous system procedures without a CC or MCC
05H03MZ	Insertion of neurostimulator lead into azygos vein

## Ambulatory Surgical Center Codes

Procedures involving the **remedē** System may also be performed in Ambulatory Surgery Centers (ASC). ASCs report CPT® codes, but they are assigned to individual fee schedules. The following CPT codes may be used as a guide for Ambulatory Surgery Center (ASC) reporting. The actual code(s) billed should reflect the services provided to each individual patient. The Medicare fee schedules listed below are a national average and have not been geographically or wage adjusted.

Device interrogation and programming are nonsurgical procedures that are not payable by Medicare and most commercial payers in an ASC. The ASC should not report these codes to Medicare. If the physician performs device programming, they may report those codes on the physician claim. For more guidance, please see the 2023 **remedē** System Physician Billing Guide.

## ASC Codes

CPT® CODE <sup>5</sup>	DESCRIPTION	ASC PAYMENT INDICATOR <sup>11</sup>	2023 MEDICARE NATIONAL AVERAGE PAYMENT <sup>11</sup>
<b>Insertion/Replacement</b>			
0424T	Insertion or replacement of neurostimulator system for treatment of central sleep apnea; complete system (transvenous placement of right or left stimulation lead, sensing lead, implantable pulse generator)	J8	\$50,988.17
0425T	sensing lead only	J8	\$10,611.23
0426T	stimulation lead only	J8	\$8,643.41
0427T	pulse generator only	J8	\$25,022.43
<b>Removal</b>			
0428T	Removal of neurostimulator system for treatment of central sleep apnea; pulse generator only	G2	\$1,816.00
0429T	sensing lead only	G2	\$1,816.00
0430T	stimulation lead only	G2	\$1,816.00
0431T	Removal and replacement of neurostimulator system for treatment of central sleep apnea, pulse generator only	J8	\$23,709.05
<b>Repositioning</b>			
0432T	Repositioning of neurostimulator system for treatment of central sleep apnea; stimulation lead only	J8	\$2,334.23
0433T	sensing lead only	G2	\$1,816.00

## ASC Status Indicator

DRG CODE	ASC PAYMENT STATUS
J8	Device-intensive procedure; paid at adjusted rate
G2	Non office-based surgical procedure added in CY 2008 or later; payment based on OPPS relative payment weight.

# MEDICARE BILLING AND PAYMENT

## Billing Considerations

For hospital inpatient and outpatient procedures, device category HCPCS codes (i.e. C-codes) for implantable devices, along with the associated charge for the device may be reported. Complete and accurate reporting of implantable devices and the associated HCPCS codes assures accurate payment and provides necessary data for the reimbursement system.

## Medical Unlikely Edit (MUE) Billing Guidance

The **remedē** System consists of an Implantable Pulse Generator (IPG) and a stimulation lead. An optional sensing lead may also be used with some models. All device components are reported under the same HCPCS code, C1823. The HCPCS code C1823 describes the entire **remedē** System and CMS has established a medically unlikely edit (MUE) of one for this code.

Hospitals should combine all of the individual charges for **remedē** System components into a single charge line as shown below with a quantity of one (1). This comprehensive charge should be inclusive of all implantable medical device components for the system, including a sensing lead from another manufacturer, if used.

## Example:

*Recommended: Charges as they should be reported on the UB-04.*

MODEL NUMBER	DEVICE DESCRIPTION	HCPCS CODE	QUANTITY	HOSPITAL CHARGES
1001	remedē System, Complete System	C1823	1	\$X

## Example:

*Not Recommended: Unadjusted hospital charges generated from operating room/supply documentation system.*

MODEL NUMBER	DEVICE DESCRIPTION	HCPCS CODE	QUANTITY	HOSPITAL CHARGES
1001	Pulse Generator, Non-rechargeable remedē System	C1823	1	\$X
4165	Left Stimulation Lead, remedē System	C1823	1	\$X
XXXX	Right Sensing Lead	C1823	1	\$X

## Hospital Outpatient Billing Example

Medicare has specific instructions for submitting hospital outpatient claims related to implantable devices which must be followed to ensure appropriate payment. For Medicare claims, device charges on the CMS-1450 (also known as the UB-04) listed under Column 47 (Total Charges) should be on the same line as a C-Code.

The most appropriate revenue code for phrenic nerve stimulation with the remedē System is 0278, Medical/Surgical Supplies: Other Implants. This revenue code was developed to separate high-cost implants from low-cost supplies, which improves charge consistency when creating revenue-code-specific cost-to-charge ratios. Charges for the procedure to implant the device are shown in revenue code 0481, Cardiac Cath Lab.

Prior Authorization Number (box 63) should also be completed for claims to commercial insurance providers, when required. An example of an outpatient CMS-1450 hospital claim is illustrated below with procedure and device charges specific to the remedē System completed.

Several billing practices have been observed that did not reflect appropriate cost capture and led to undervalued payments including:

- Multiple line items resulting in a quantity greater than one for C1823 (see MUE Billing Guidance above)
- Incorrectly listing the device as a non-covered charge (Column 48)
- Failing to markup the device appropriately based on the hospital's applicable cost-to-charge ratio
- Using an undesignated revenue code

For questions or examples of inpatient billing, please contact the remedē Reimbursement Hotline.



# APPEALING A DENIED CLAIM OR PRIOR AUTHORIZATION REQUEST

Because the **remedē** System is a novel therapy with a CPT® III code, a payor's appeal process may need to be utilized in order to obtain payment or authorization for patient care. ZOLL offers a Patient Access Program that works on behalf of patients who qualify for the **remedē** System to exhaust all avenues in the prior-authorization appeal process. By working on behalf of the patient directly, additional avenues of appeal can be utilized that are not always available to providers.

For denied Medicare or post-service claims, the **remedē** Patient Access Program can also support the provider or the patient with the appeal process. Contact the **remedē** Reimbursement Hotline for more information on how to enroll your patient case in the **remedē** Patient Access Program.

We have found that successfully responding to a claim denial requires evaluating why the claim was denied, presenting the clinical need for the therapy, and citing the relevant evidence to convince the reviewer. We can provide letter templates and recommend you include the following details in your appeal:

## 1. Evaluate the Denial

- What was the stated rationale for denial? Take time to understand the specific points listed in the denial notice (i.e. reason codes, remark codes and denial codes)
- What is the appeal process? Most insurers have a defined process with deadlines and specific requests; be sure to adhere to this process
- What is the background and specialty of the peer reviewer? Assess the reviewer's relevant experience in order to best tailor an argument to that person's background

## 2. Present the Clinical Need

- Highlight the patient CSA symptoms and relevant comorbidities: Describe how long the patient has suffered from CSA, and how CSA has reduced the patient's quality of life (e.g. Severe fatigue, cognitive decline, inability to hold a job or participate regularly in activities, mood changes, frequent night-time arousals and abrupt awakenings accompanied by shortness of breath, describe any relevant comorbidities that may be worsened by the disease, including heart failure, atrial fibrillation, and stroke-risk)
- Provide clinical rationale for the decision to implant the **remedē** System: Explain why the **remedē** System was the best or only available treatment option, e.g.:
  - ASV was contraindicated because patient had reduced ejection fraction
  - Patient was unable to tolerate PAP therapies
  - Patient had attempted PAP therapy but symptoms did not improve
  - Physician perceived a mortality risk for positive airway pressure therapy
  - Patient cognitive decline made it necessary to utilize a therapy that did not require patient compliance

## 3. Cite Clinical Evidence

Contact the **remedē** Reimbursement Hotline for an extensive list of publications related to Central Sleep Apnea and the **remedē** System as well as sample appeal letter templates.

For questions or case management support, please  
call the **remedē** Reimbursement Hotline at

**1-952-540-4470** or email questions to [reimbursement@remede.zoll.com](mailto:reimbursement@remede.zoll.com).

## FREQUENTLY ASKED QUESTIONS

### **Q: Why does the remedē® System have a Category III code or “T” code? Will it change?**

As a novel therapy offering, the **remedē** System is currently classified a CPT® Category III code by the American Medical Association (AMA) and indicated by the alphanumeric indicator “T” at the end of each code. CPT Category III codes are a set of temporary codes that allow data collection for emerging technology, services, and procedures. The American Medical Association has approved Category I CPT codes for the **remedē** System, which will be effective in 2024. Please contact the **remedē** Reimbursement Hotline with any additional questions.

### **Q: What is the remedē Patient Access Program?**

ZOLL has partnered with an external firm called PRIA Healthcare to provide the **remedē** Patient Access Program. PRIA is a healthcare management firm determined to bring the latest medical devices, treatments, and procedures to physicians and patients nationwide. PRIA fights on behalf of the patient by executing on prior authorizations and patient-based appeals of denied care.

### **Q: Can I enroll my patient case in the remedē Patient Access Program after our practice submitted the case and received a prior authorization denial or a Medicare claim denial?**

Yes. The **remedē** System Patient Access program leverages the patient’s legally protected right to appeal an adverse benefit determination and can be used at any time, even after a claim or appeal submitted by a provider is denied. PRIA will work on behalf of patients until all avenues in the appeal process are exhausted. By working directly on behalf of the patient, additional avenues of appeal may be utilized that are not always available to providers. However, PRIA will also work on behalf of the provider to appeal a post-service denial.

- <sup>1</sup> Costanzo M, et al. Transvenous neurostimulation for central sleep apnoea: a randomised controlled trial. *The Lancet*. 2016; 388: 974–82.
- <sup>2</sup> Costanzo MR, Khayat R, Ponikowski P, et al. State-of-the-art review: Mechanisms and clinical consequences of untreated central sleep apnea in heart failure. *J Am Coll Cardiol* 2015;65:72-84.
- <sup>3</sup> Costanzo MR, Javaheri S, Ponikowski P, et al. Transvenous Phrenic Nerve Stimulation for Treatment of Central Sleep Apnea: Five-Year Safety and Efficacy Outcomes. *Nat Sci Sleep*. 2021;13:515-526.
- <sup>4</sup> Costanzo MR, Ponikowski P, Javaheri S, et al. Sustained Twelve Month Benefit of Phrenic Nerve Stimulation for Central Sleep Apnea. *Am J Cardiol*. 2018. pii: S0002-9149(18)30258-3. doi: 10.1016/j.amjcard.2018.02.022.
- <sup>5</sup> ICD-10-CM Expert for Physicians and Hospitals, 2022. AAPC.
- <sup>6</sup> Current Procedural Terminology (CPT®) Professional Edition 2022. Copyright 2018 American Medical Association. All rights reserved.
- <sup>7</sup> CMS-1772-FC; Hospital Outpatient Prospective Payment and Ambulatory Surgical Center Payment Systems and Quality Reporting Programs. CY2023 NFRM Addendum B.
- <sup>8</sup> 2022 Alpha-Numeric HCPCS File.
- <sup>9</sup> ICD-10-PCS Expert for Hospitals, 2021.
- <sup>10</sup> 2023 Medicare Inpatient Prospective Payment System (IPPS) Final Rule.
- <sup>11</sup> CMS-1772-FC; Hospital Outpatient Prospective Payment and Ambulatory Surgical Center Payment Systems and Quality Reporting Programs. CY2023 NFRM Addendum AA.

#### Important Safety Information

The **remedē**® System is indicated for moderate to severe Central Sleep Apnea (CSA) in adult patients. A doctor will need to evaluate the patient's condition to determine if the **remedē** System is appropriate. Patients will not be able to have an MRI or diathermy (special heat therapies) if the **remedē** System is implanted. The **remedē** System may be used with another stimulation device such as a heart pacemaker or defibrillator; special testing will be needed to ensure the devices are not interacting. As with any surgically implanted device, there are risks related to the surgical procedure itself which may include, but are not limited to, pain, swelling, and infection. Once the therapy is turned on, some patients may experience discomfort from stimulation and/or from the presence of the device. The majority of these events are resolved either on their own or by adjusting the therapy settings. The **remedē** System may not work for everyone. There are additional risks associated with removing the system. If it is decided to remove the system, another surgery will be required. Be sure to understand all of the risks and benefits associated with the implantation of the **remedē** System. For further information please visit [remede.zoll.com](http://remede.zoll.com), call 952-540-4470 or email [info@remede.zoll.com](mailto:info@remede.zoll.com). **Indication for use:** The **remedē** System is an implantable phrenic nerve stimulator indicated for the treatment of moderate to severe Central Sleep Apnea (CSA) in adult patients. **Contraindications:** The **remedē** System is contraindicated for use in patients with an active infection or patients known to require magnetic resonance imaging (MRI). See the Instructions for Use for complete information regarding the procedure, indications for use, contraindications, warnings, precautions, and potential adverse events.

**Rx Only.** The **remedē**® System, **remedē**® EL System, and **remedē**® EL-X System have received FDA approval. The **remedē**® System model 1001 has received CE Mark approval.

## ZOLL MEDICAL CORPORATION

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