DE NOVO CLASSIFICATION REQUEST FOR REVI SYSTEM

REGULATORY INFORMATION

FDA identifies this generic type of device as:

> **Implanted tibial electrical urinary continence device.** An implanted tibial electrical urinary continence device is an implanted prescription device that receives power from a non-implanted external power source to provide electrical stimulation of the tibial nerve in proximity to the ankle. The device is intended for the treatment of overactive bladder related symptoms of urge urinary incontinence, urinary urgency, urinary frequency and nocturia.

NEW REGULATION NUMBER: 21 CFR 876.5305

CLASSIFICATION: Class II

PRODUCT CODE: QXM

BACKGROUND

DEVICE NAME: Revi System

SUBMISSION NUMBER: DEN220073

DATE DE NOVO RECEIVED: October 5, 2022

SPONSOR INFORMATION:

BlueWind Medical Ltd.
6 Maskit Street
Herzliya, Israel 4614002

INDICATIONS FOR USE

The Revi System is indicated for the treatment of patients with symptoms of urgency incontinence alone or in combination with urinary urgency.

LIMITATIONS

The sale, distribution, and use of the Revi System are restricted to prescription use in accordance with 21 CFR 801.109.

Contraindications:

Patients contraindicated for the Revi therapy are those who:

1. Are men who have Benign Prostatic Hyperplasia (BPH) or other lower urinary tract obstructions.

2. Are pregnant.

Precaution:

1. Physicians should follow current clinical guidelines as applicable and should use their discretion to determine whether the patient should fail or not tolerate more conservative treatments before using the Revi System.

PLEASE REFER TO THE LABELING FOR A COMPLETE LIST OF WARNINGS, PRECAUTIONS AND CONTRAINDICATIONS.

DEVICE DESCRIPTION

The Revi System is a tibial neuromodulation system that consists of the following four different components:

1. **Implant:** An implantable wireless neurostimulation component that is implanted in the vicinity of the tibial neurovascular bundle. The implant is battery-less and does not have an internal power source.

2. **Rechargeable Wearable Unit**: This unit is comprised of a wearable device and leg band. The wearable device contains an electrical circuit board, flexible antenna, and rechargeable battery with dedicated charger. The Rechargeable Wearable Unit, when used by the patient, is designed to be paired to a specific implant. Once paired, the Rechargeable Wearable Device transmits power and can only communicate (through magnetic coupling) with the specific implant to which it is paired.

3. **Clinician Programmer (CP)**: This application is the system's interface used by the healthcare providers for treatment control, status evaluation, parameter programming and data acquisition. Access to the CP is password protected to allow access only to authorized users. The CP transfers data to and from the Rechargeable Wearable Unit via a wireless Bluetooth connection.

4. **HealthGo Micro (Hub):** The Hub communicates with the Rechargeable Wearable Unit using a Bluetooth connection and acquires and transmits data to the Cloud only during the charging sessions of the Rechargeable Wearable Unit. The Hub allows health care providers access to device data logs between visits without the need for in-person visits. The Hub is a Class I 510(k) exempt device (Product code OUG, 21 CFR 880.6310).

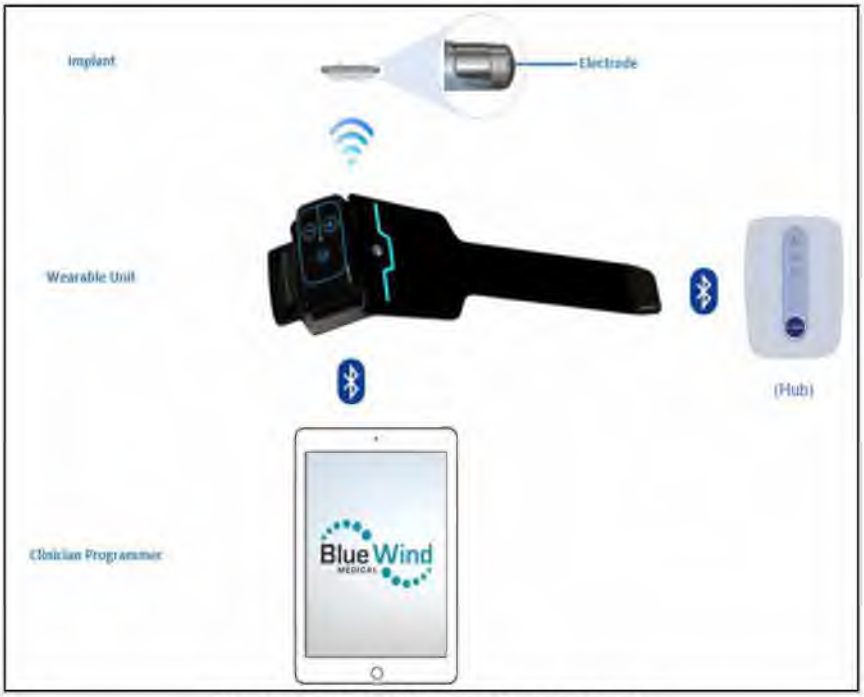

Figure 1: Revi System Components

Table 1: Revi System Technological Specifications

Device Technology Description:	Revi System
Stimulation Parameters	
Stimulation Waveform	Biphasic charge - neutral
Stimulation Polarity	Configurable
Pulse Repetition Frequency	Up to 30Hz
Pulse Amplitude	Up to 14mA
Pulse Width	Up to 790µsec
Typical Stimulation Session Duration	
Duration	30 - 60 minutes for 1-2 times per day, as instructed by the physician
Stimulation Parameter Increments	
Amplitude	0.1mA increments
Frequency	1Hz increments
Pulse Width	20µsec increments
Treatment Duration	5 minute increments
Battery	
Battery	Li-ion Rechargeable, 1400mAh
Battery Operation	Battery operational voltage: 3.1 - 4.2V Charging: Up to 1 week of therapy on a single charge. The patient should charge the Wearable Unit after each therapy session.
Battery Life	1 year (365 therapy days)

Battery charger	Manufacturer: FRIWO Gerätebau GmbH (Ostbevern, Germany) Model number: FW8002.1MUSB/05 Power rating: 6W

SUMMARY OF NONCLINICAL/BENCH STUDIES

BIOCOMPATIBILITY/MATERIALS

The Revi System has two patient contacting components, the Implant and the Leg Band of the Rechargeable Wearable Unit. The sponsor conducted biocompatibility testing of these components per the FDA guidance document, '*Use of International Standard ISO 10993-1, "Biological evaluation of medical devices - Part 1: Evaluation and testing within a risk management process*' published in 2020. The neurostimulator component (made of silicone, titanium and zirconia) is categorized as an implant device contacting tissue/bone for a permanent duration of exposure (> 30 days). Therefore, per ISO 10993-1:2018, *Biological evaluation of medical devices – Part 1: Evaluation and testing within a risk management process*, the following biocompatibility endpoints were assessed for the Implant:

Endpoint	Test Method
Cytotoxicity	ISO 10993-5: 2009 ISO Elution Method
Sensitization	ISO 10993- 10:2009/2010 ISO Maximization Sensitization (Guinea Pig)
Irritation/ Intracutaneous Reactivity	ISO 10993-10:2010 ISO Intracutaneous Reactivity (Rabbit)
Acute Systemic Toxicity	ISO 10993-11:2017 ISO Acute Systemic Toxicity (Mouse)
Material-Mediated Pyrogenicity	USP 34 <151> Rabbit Pyrogen Test
Subchronic and Chronic Systemic Toxicity	ISO 10993-18:2020 Chemical Characterization ISO 10993-17:2002 Toxicological Risk Assessment
Genotoxicity	ISO 10993-3:2014 Bacterial Reverse Mutation
	ISO 10993-3:2014 In Vitro Mammalian Cell Chromosomal Aberration
Implantation	ISO 10993-6:2007 Implantation Study (Rat)
Carcinogenicity	ISO 10993-18:2020 Chemical Characterization ISO 10993-17:2002

	Toxicological Risk Assessment
Reproductive and Developmental Toxicity	ISO 10993-18:2020 Chemical Characterization ISO 10993-17:2002 Toxicological Risk Assessment

The Leg Band, which is made of (b)(4) is categorized as a surface device contacting intact skin for a permanent duration of exposure (based on cumulative exposure – 8 hours of use per day). The sponsor conducted biocompatibility testing of this component per the FDA guidance document, '*Use of International Standard ISO 10993-1, "Biological evaluation of medical devices - Part 1: Evaluation and testing within a risk management process*' published in 2020. Per ISO 10993-1:2018, the following biocompatibility endpoints were assessed for the leg band:

Endpoint	Test Method
Cytotoxicity	ISO 10993-5: 2009 ISO Elution Method
Sensitization	ISO 10993-10:2009/2010 ISO Guinea Pig Maximization Sensitization
Irritation/Intracutaneous Reactivity	ISO 10993-10:2010 ISO Skin Irritation Study in Rabbits

The results demonstrate that the Revi System is biocompatible.

STERILITY/ SHELF LIFE/REPROCESSING

The Implant is the only component of Revi System which is provided sterile. The Implant is sterilized by ethylene oxide (EO) gas to an assurance level (SAL) of 10^{-6} per ISO 11135:2014, *Sterilization of health care products – Ethylene oxide – Requirements for development, validation and routine control of a sterilization process for medical devices*. The sponsor tested the implant for EO residuals in conformance with ISO 10993-7 to ensure that the maximum residual levels of EO and ethylene chlorohydrin (ECH) remaining on the Implant after sterilization do not exceed the recommended limits for medical devices with permanent patient contact.

The sponsor also conducted simulated shipping distribution in conformance with ASTM D4169-22, *Standard Practice for Performance Testing of Shipping Containers and Systems*. Following simulated shipping distribution, the sponsor conducted packaging integrity testing as described below.

The shelf-life for the implant component of the Revi System is established at one year based on an accelerated aging study per ASTM F1980-16, *Standard Guide for Accelerated Aging of Sterile Barrier Systems for Medical Devices*. To support the one-year shelf life, package integrity testing and functional testing were conducted. Package integrity testing consisted of the following:

- Visual inspection (per ASTM F1886/F1886M-16, *Standard Test Method for Determining Integrity of Seals for Flexible Packaging by Visual Inspection*)
- Seal strength (ASTM F88/F88M-21, *Standard Test Method for Seal Strength of Flexible Barrier Materials*)
- Dye penetration (per ASTM F1929-15, *Standard Test Method for Detecting Seal Leaks in Porous Medical Packaging by Dye Penetration*)

The functional testing conducted after accelerated aging is described in Table 2 below.

The results demonstrated that Revi System has acceptable package integrity and functional performance over the duration of its one-year shelf life and after simulated shipping distribution

The Leg Band needs reprocessing (cleaning) during its use life. The reprocessing validation testing provided for the Leg Band demonstrated that the reprocessing instructions are adequate.

ELECTROMAGNETIC COMPATIBILITY & ELECTRICAL SAFETY

The sponsor conducted electromagnetic compatibility and electrical safety testing on the Revi System in accordance with the following standards:

- ISO 14708-1:2014: *Implants for surgery – Active implantable medical devices – Part 1: General requirements for safety, marking and for information to be provided by the manufacturer*
- ISO 14708-3:2017 *Implants for surgery – Active implantable medical devices – Part 3: Implantable neurostimulators.*
- IEC 60601-1-2: 2020, *General requirements for basic safety and essential performance – Collateral Standard: Electromagnetic disturbances – Requirements and tests*
- IEC 60601-1:2005 (Third Edition) + CORR. 1:2006 + CORR. 2:2007 + A1:2012, *Medical electrical equipment — Part 1: General requirements for basic safety and essential performance*
- IEC 60601-1-11:2015 (Second Edition), *Medical electrical equipment – Part 1-11: General requirements for basic safety and essential performance – Collateral standard: Requirements for medical electrical equipment and medical electrical systems used in the home healthcare environment*
- IEC 62133-2:2017, *Safety Test Standard of Li-Ion Cell and Battery and UN 38.2 Rev.6: UN manual of tests and criteria Part III – Test Requirements for lithium cells/batteries.*

The Revi System passed electrical safety and electromagnetic compatibility testing consistent with the acceptance criteria outlined in these standards. The sponsor provided adequate labeling instructions related to electrical safety and electromagnetic compatibility of the Revi System.

The Revi System uses wireless technology. The sponsor conducted testing on the wireless technology per the FDA guidance document, *Radio Frequency Wireless Technology in Medical Devices* published in 2013. The sponsor also conducted wireless coexistence testing per AAMI TIR69:2017:2020, *Risk management of radio-frequency wireless coexistence for medical devices and systems.* The Revi System passed all the wireless technology testing, i.e., wireless coexistence, quality of service and wireless security testing. The sponsor provided adequate labeling instructions related to the wireless technology of the Revi System.

MAGNETIC RESONANCE (MR) COMPATIBILITY

The sponsor conducted MRI compatibility testing on the Implant to verify that it can be used in MRI environments (of 1.5Tesla and 3Tesla) per ISO/TS 10974:2018, *Assessment of the safety of magnetic resonance imaging for patients with an active implantable medical device.* The results demonstrated that the Implant is MR compatible under the conditions specified on the labeling.

SOFTWARE

The Revi System's software documentation and verification testing is based on a Moderate Level of Concern per the FDA guidance document, *Guidance for the Content of Premarket Submissions for Software Contained in Medical Devices* published in 2023. Prior to mitigation of hazards, failure of the Revi System software could result in minor injury to the patient.

The sponsor submitted all the necessary documentation describing the software development program. In addition, the sponsor submitted documentation that they performed a hazard analysis to characterize software risks, including device malfunction. The sponsor provided adequate verification and validation (V&V) testing to address the potential hazards. The sponsor also provided adequate documentation describing the software, firmware, software specifications, architecture design, software development environment, traceability, revision level history, and unresolved anomalies to support that the software will operate in a manner as described in the specifications.

The sponsor also conducted cybersecurity testing on the Revi System as the Rechargeable Wearable Unit is intended to be connected to the Hub which transfers data to the Cloud. The cybersecurity test results for the Revi System were satisfactory and demonstrated that all the cybersecurity threats were adequately mitigated.

PERFORMANCE TESTING - BENCH

The sponsor evaluated the performance of the Revi System using the non-clinical bench testing summarized in Table 2. The sponsor accelerated aged all samples used in the performance testing to simulate three years of aging (i.e., 73°C for 35 days). The accelerated aged samples represent a worse-case aging for performance testing compared to baseline as the device has a shelf-life of 1-year.

Table 2: Summary of Performance Testing – Bench Studies

Test	Purpose	Method	Acceptance Criteria	Result
Implant Overheating	To evaluate thermal safety of the implant	(b)(4)	The temperature elevation (above baseline temperature) relative to the ambient temperature changes should not exceed (b)(4) throughout the entire test.	Pass
Implant Functional Testing	To verify stimulation output parameters		The measured values of the stimulation parameters should be within the specified range per the device specifications in Table 1.	Pass
Implant Direct Current Density	To verify that the Implant's leakage current density is within the range specified in ISO 14708-1:2014.		The direct current density at the surface of any conductive surface or electrode should be (b)(4)	Pass
Implant Operation Under Extreme Body Temperatures	To demonstrate that the Implant can function properly over a wide temperature range. • Low temperature range: 11°C - 18°C • High temperature range: 42°C - 43°C.		The pulse amplitude error should be < (b)(4)	Pass

Test	Purpose	Method	Acceptance Criteria	Result
		(b)(4)		
Rechargeable Wearable Unit Battery Power Consumption	To demonstrate that the Rechargeable Wearable Unit can deliver the minimal amount of treatment at nominal or worst-case treatment parameters before getting recharged.		After each treatment session, the battery voltage should be more than critical battery level ((b)(4)).	Pass
Rechargeable Wearable Unit Battery Overcharging and Over Discharging Protection	To verify that the Rechargeable Wearable Unit prevents the battery from overcharging or over discharging.		The measured values of the voltages and currents should be within the specified range per the device specifications in Table 1.	Pass
Rechargeable Wearable Unit Charging Mode Protection	To validate the electrical protection feature during the charging mode that halts Rechargeable Wearable Unit transmission once charging is initiated.		The transmission halt should happen within (b)(4) (b)(4) of initiation of battery charging.	Pass
Implant Axial Forces	To verify the axial tension and axial compression forces the Implant can withstand.		The Implant should be able to withstand a (b)(4) axial tension and a (b)(4) compression force.	Pass
Implant Pinching Force	To verify the pinching force the Implant can withstand.		The Implant should be able to withstand a (b)(4) pinching force.	Pass

Test	Purpose	Method	Acceptance Criteria	Result
		(b)(4)		
Implant Pushout Force	To verify the force required to push the Implant out from the Silicone wings.		The push out force should not be less than (b)(4).	Pass
Implant Suture Tension Forces	To verify that the fixation device of the Implant can withstand the mechanical forces that could occur during or after implantation.		The fixation device's suturing holes are required to maintain a performance tensile force of up to (b)(4).	Pass
Implant Hermeticity Testing	To verify the if the Implant is hermetically sealed.	The test method and the acceptance criterion are according to MIL-STD-883-1 (2018) Method 1014.17 (Hermeticity/Seal Testing).		Pass
Implant Corrosion Testing	To verify the corrosion resistance of the implant.	The test method and the acceptance criterion are in accordance with ASTM F2129-19a:2018.		Pass
Implant Particulate Testing	To determine the number of particulates released by the Implant.	The test method and the acceptance criterion are in accordance with ISO 14708-1:2014, Clause 14.2.		Pass
Implant Atmospheric Pressure Testing	To verify if the Implant can withstand changes in pressure during transit or normal use.	(b)(4)	The Implant should be able to withstand changes in pressure during transit or normal use for at least (b)(4)	Pass
Implant Shock-Mechanical and Electrical Functionality	To demonstrate that the Implant can withstand minor mechanical and electrical shock forces caused by mishandling during the implantation procedure.	The test method and the acceptance criterion are in accordance with ISO 14708-1:2014, Clause 23.7.		Pass
Implant Vibration-Mechanical and Electrical Functionality	To demonstrate that the Implant can withstand mechanical forces of vibration which might occur during normal conditions of use.	The test method and the acceptance criterion are in accordance with ISO 14708-1:2014, Clause 23.2.		Pass
Rechargeable Wearable	To verify that the Rechargeable	The test method and the acceptance criterion are in accordance with IEC 60601-1-11:2020, Clause 10.1.3.		Pass

Test	Purpose	Method	Acceptance Criteria	Result
Unit Shock Test	Wearable Unit can withstand mechanical shock forces which might occur during normal conditions of use.			
Rechargeable Wearable Unit Vibration Test	To verify that the Rechargeable Wearable Unit can withstand mechanical vibration forces which might occur during normal conditions of use.	The test method and the acceptance criterion are in accordance with IEC 60601-1-11:2020, Clause 10.1.3.		Pass
Rechargeable Wearable Unit Free Fall (Drop) Test	To verify that the Rechargeable Wearable Unit can withstand the mechanical force related to free fall which it might occur during normal conditions of use	The test method and the acceptance criterion are in accordance with IEC 60601-1:2014, Clause 15.3.4.1.		Pass
Implant Electronic Fatigue Test	To verify if the Implant develops electronic fatigue after 10 years of use life.	(b)(4)	The Implant should pass functional testing after the simulated testing.	Pass
Implant Active Aging	To verify the 11 year use life of the Implant		The Implant should pass functional testing after the simulated testing.	Pass

Functional testing and hermeticity testing were conducted after each bench performance testing listed in Table 2, except the Implant Active Aging test and the Implant Electronic Fatigue test, to verify that the Revi System performs as intended after exposure to the conditions of each bench test. The results of this testing demonstrated that the Revi System performs as intended under the anticipated conditions of use.

PERFORMANCE TESTING - ANIMAL

The sponsor conducted an ovine study to assess the safety and technical performance of the Revi System. Nine ewes were implanted with two subject devices each, one on the vagal and one on the tibial nerve for 2, 30, 90 or 180 days of stimulation to represent a worst case scenario for safety. Postoperatively, coupling tests and radiographs were obtained to verify implant integrity and proper communication between the Implant and the Rechargeable Wearable Unit. Two weeks after implant, individual parameter settings were determined for each animal. Final treatment levels were set below the maximal tolerable level of stimulation, at which the sheep did not show any signs of discomfort. The Implant did not migrate or change its position with time during the 6-months of the study. Overall, the Revi System had no effect on the animals' vital signs, well-being, and neurological condition. These preliminary animal study data were able to support adequate safety of the Revi System to initiate human clinical studies.

SUMMARY OF CLINICAL INFORMATION

USABILITY STUDY

The sponsor conducted a usability validation study using 21 participants representing overactive bladder patients (male and female residents of United States). The sponsor conducted the usability validation study to verify that patients can safely and effectively operate the Revi System without any serious user errors. The study was conducted per the FDA guidance document, *Applying Human Factors and Usability Engineering to Medical Devices* published in 2016.

Sixteen critical tasks and 28 user errors were observed during the usability study. Twelve errors were observed related to keeping the incision site dry for at least five days. Six participants did not know to only resume vigorous activity after clearance from their physician. The rest of the use errors were related to charging the Rechargeable Wearable Unit, not knowing to carry the Revi System implant card, not knowing that a stimulation treatment session should not be done at a petrol station or near flammables, knowing not to drive or operate machinery during a treatment session, and knowing not to perform a Treatment Session during a flight. The sponsor revised the post operative instructions and other instructions relevant to the use errors in the patient manual. Overall, the study demonstrated that the users were able to complete most critical tasks successfully, and the sponsor appropriately updated the labeling to mitigate the use errors identified.

PIVOTAL CLINICAL STUDY

The sponsor completed a pivotal clinical study (OverActive Bladder Stimulation System Study (OASIS)) to evaluate the safety and effectiveness of the Revi System for the treatment of patients with symptoms of urgency incontinence, urinary urgency and urinary frequency. The study was conducted at 27 sites, 17 of which were in the United States. The remaining 10 study sites were located in England (02), Belgium (02), Netherlands (05) and Germany (01).

Study Design

The sponsor conducted an interventional, prospective, multi-center, single arm open label pivotal study of the Revi System for the treatment of females diagnosed with urge urinary incontinence (UUI) alone or in combination with urinary urgency and/or urinary frequency. The study evaluated changes in baseline UUI episodes as measured by patient voiding diaries and patient reported outcomes through one year.

Subjects were seen at baseline, implantation procedure, device activation (which occurred 4 weeks ±2 weeks after implantation), and then at 1-month, 3-months, 6-months, and 12-months post activation. Adverse events (AEs) and complications were recorded at all visits. The subjects had the option of consenting to a long-term follow-up extension, performed every six months after the 12-month visit up to 3 years.

All subjects gave written informed consent before any study assessment commenced. Potential subjects were screened for inclusion and exclusion criteria. Only subjects meeting all inclusion criteria and not meeting any exclusion criteria were enrolled in the study. The Implant was surgically placed subfascially (underneath the fascia) in the right or left leg of subjects. After a recovery period of 4-weeks ±2 weeks post implantation, system activation based on sensation and motor assessment was conducted. Subjects underwent an acute stimulation session of the tibial nerve to evaluate their sensory/motor reaction to stimulation. Thereafter, subjects underwent stimulation parameters setting. Parameter settings were individually set for each subject. Tailored therapy parameters were adjusted based upon subject tolerability, sensation and motor threshold. Stimulation parameters were modified for each subject in a stepwise process, until a sensory response (tingling sensation in the ankle, foot, toes and sometimes a radiation sensation in the leg and/or genital area) or a sensory response in combination with a motor response (flexion of the big toe, fanning out of digits 2-5, extension of the foot) was elicited.

Subjects were trained for home use of the Revi System. Subjects were instructed to administer daily stimulation of a minimum of 30 minutes and a maximum of 2 hours, per clinician discretion. Subjects were able to adjust the amplitude within a range customized to them individually. Stimulation parameter settings were re-evaluated at each follow-up visit and sensory and motor thresholds assessed. Treatment parameters (frequency, pulse width, polarity and amplitude) were adjusted according to the individual subject's sensations. After six months, the primary effectiveness and safety endpoint were assessed.

An independent Data and Safety Monitoring Board (DSMB) monitored the study to evaluate safety, study conduct, scientific validity, and data integrity of the study. The DSMB was used to assess the progress of the clinical study and to provide determinations and recommendations regarding the study conduct.

The inclusion and exclusion criteria for the study are as follows:

Inclusion Criteria

- Signed written informed consent.

- Female aged 18 or greater (21 or greater in the US), with no plans to become pregnant during the trial; if of childbearing potential, negative pregnancy test and if sexually active, using acceptable contraception.
- Subject who is mentally competent with the ability to understand and comply with the requirements of the study.
- Diagnosis of UUI demonstrated on a 7-consecutive days voiding diary defined as a minimum of nine (9) leaking episodes associated with urgency, with at least one episode per day for 5 days.
- More than or equal to 6 months history of UUI diagnosis.
- Subject with inadequate response to any of the following conservative treatments (i.e., dietary restriction, fluid restriction, bladder training, behavioral modification, pelvic muscle training, biofeedback, etc.) and pharmacologic treatment.
- If used, subjects should be on stable dose of antimuscarinics and/or beta-3 adrenergic agonists for at least 3 months prior to baseline and agree to remain on stable medication consumption until the 12-month follow-up visit.
- If used, subjects should be on a stable dose of tricyclic antidepressants, Selective Serotonin Reuptake Inhibitors (SSRI) and Serotonin-Norepinephrine Reuptake Inhibitors (SNRI) for at least 3 months prior to baseline.
- Subjects with positive tibial nerve motor or sensory response tested via physical/neurological examination.
- Subjects with normal renal function defined by GFR of 50 ml/min or more.
- Leg circumference of no less than 20 cm and no more than 30 cm at implantation site (i.e., 5 cm above the medial malleolus).
- Subject agrees to attend all follow-up evaluations and is willing and capable to completely and accurately fill out voiding diaries and questionnaires and is willing to complete required exams and tests.

Exclusion Criteria

- Previous participation in another study with any investigational drug or device within the past 90 days.
- Subjects who are unable to operate the RENOVA iStim™ System.
- Deemed unsuitable for enrollment by the investigator based on history or physical examination.
- Subjects at high surgical risk with multiple illnesses or active general infections that expose them to excessive bleeding or delayed or non-healing wounds. This includes patients who need anticoagulation therapy that cannot be temporarily stopped for the implantation procedure.
- Any significant medical condition that is likely to interfere with study procedures, device operation, or likely to confound evaluation of study endpoints.
- Subject has morbid obesity (>50 BMI).
- Any psychiatric or personality disorder at the discretion of the study physician.
- PHQ-15 Patient Somatization Score $\geq$ 20.
- Any metal or other implant in the area of BlueWind RENOVA iStim™ implantation site (20cm distance).
- Variation in diuretics consumption within the last 6 months.
- Subjects who have received botulinum toxin injections within the past 12 months.
- Failure to respond to previous neuromodulation therapy for overactive bladder.
- Subjects who have received neurostimulation in the last 3 months.

- Previous urinary incontinence surgery or prolapse surgery using graft material within the last 12 months.
- Any spinal or genitourinary surgery within the last 6 months.
- Previous abdominoperineal resection of the rectum or previous radical hysterectomy.
- Skin, peripheral edema, orthopedic or neurologic anatomical limitations that preclude implantation or/and use of the device.
- Diagnosis of interstitial cystitis or bladder pain syndrome as defined by either American Urological Association (AUA) or European Association of Urology (EAU) guidelines.
- More than minimal level of suspected stress incontinence or mixed incontinence with stress component likely to confound study outcome, based on a 7-day voiding diary or medical history, or when stress incontinence score in the Medical, Epidemiologic, and social aspects of Aging (MESA) incontinence questionnaire is higher than the urgency incontinence score.
- Subjects with suspected urinary retention and/or PVR>150ml.
- Any neurological disease or disorder including Alzheimer's, Parkinson, Multiple Sclerosis (MS), Cortical Visual Impairment (CVI) caused by stroke, neuropathy or injury resulting in neuropathy and/or suspected neurogenic bladder.
- Current or recurrent urinary tract infection (3 or more infections in the last 6 months), or presence of urinary fistula, or urinary tract obstruction such as cancer, urethral stricture or presence of urinary stone.
- History of chemotherapy or pelvic radiotherapy that might have affected bladder control or caused neuropathies (i.e., peripheral neuropathy).
- Diabetes with peripheral nerve neuropathy or severe uncontrolled diabetes (with HbA1C > 7%). Note: patients with HbA1C in the range of 7.1-7.5% may be considered eligible based on their complete medical record.
- Uterine prolapse, cystocele, enterocele or rectocele with pelvic prolapse to or beyond the hymen.
- Subjects with a documented history of allergic response to Platinum iridium, Titanium, Zirconia, Gold, Silicone or Parylene.
- Other active implantable electronic device/s regardless of whether stimulation is ON or OFF.
- Have a life expectancy of less than 1 year.
- Subjects who are breastfeeding.
- History of drug or alcohol abuse.

Subject Disposition

Overall, 282 patients consented and were screened for the study, with 151 patients implanted (Intent to Treat (ITT) analysis set). Nine subjects prematurely terminated from the study prior to implantation. Seven participants were terminated from trial participation prior to the 6-month visit, and 4 subjects terminated from the study before the 12-month visit. Each of the remaining 144 participants completed the 6-month visit, and 140 patients completed the 12-month follow-up. Figure 2 provides a flow chart of the follow-up schedule and complete subject accounting.

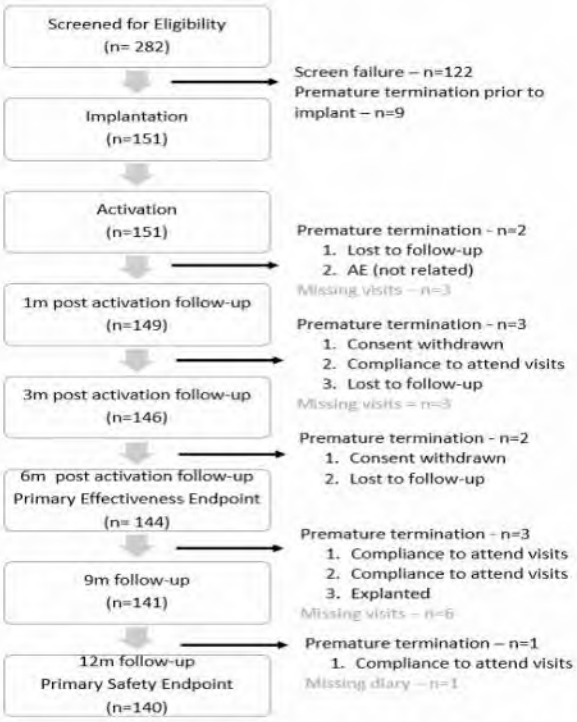

Figure 2: Flow Chart of Follow-Up Schedule and Subject Accounting

Study Endpoints

Primary Safety Endpoint

The primary safety endpoint is the incidence of adverse events from implantation to 12-months post-activation.

The safety analyses are presented as descriptive and narrative in nature, with AEs, including serious adverse events (SAEs), coded and tabulated by body system, preferred term, group, severity and relation to device or procedure.

Primary Effectiveness Endpoint

The primary effectiveness endpoint is the proportion of responders at 6 months post system activation as demonstrated by ≥50% improvement in the average number of UUI episodes as compared to baseline, measured by a 7-day patient voiding diary. The statistical hypothesis for the primary effectiveness endpoint was defined as follows:

$$H0: \pi Renova \leq \pi PG$$
$$H1: \pi Renova > \pi PG,$$

where πRenova is the proportion of subjects who are responders (≥ 50% improvement in average number of UUI episodes) and πPG is the pre-specified performance goal (PG) of 50%.

The hypothesis testing was conducted by constructing a two-sided, 95% Clopper-Pearson confidence interval. The trial was considered successful if the lower bound of this confidence interval was above 50%.

Secondary Effectiveness Endpoint

The secondary effectiveness endpoints and their associated performance goals were as follows:

- Proportion of subjects with ≥10 points (minimally important difference (MID)) improvement in Health Related Quality of Life (HRQL) (based on Overactive Bladder Questionnaire (OAB- q)) at 6 months post system activation, with a performance goal of 50%.

- Proportion of responders at 12 months post system activation as demonstrated by ≥50% improvement in either average number of urgency related incontinence episodes or average number of severe/large urgency related incontinence episodes, as measured by the 7-day patient voiding diary, with a performance goal of 50%.

- Proportion of responders at 6 months post system activation as demonstrated by ≥50% improvement in the average number of moderate-severe urgency episodes Patient Perception of Intensity of Urgency Scale (PPIUS) degree 3, 4 or <8 voids/day, with a performance goal of 45%. This endpoint is defined only for patients with a baseline number of voids per day of at least 8 and baseline number of urgent episodes (PPIUS 3 or 4) of at least 9 per the 7-day patient voiding diary.

All three secondary endpoints had a pre-specified hypothesis. To control the type I error of the family of secondary endpoints at 5%, the statistical analysis plan stated that secondary endpoint hypothesis testing would only occur in conjunction with rejection of the primary endpoint null hypothesis and the Hochberg step-up procedure would be applied, (i.e., calculation of each comparison to a performance goal is performed separately rather than simultaneously).

Study Population Demographics and Baseline Parameters

One-hundred and fifty-one (151) female subjects with a mean age of 58.8 years (SD: 12.5) and mean BMI of 30.2 (SD: 6.9) were implanted with the Revi System (Table 3). Race and ethnicity data (Table 4) were collected only from the US cohort. The majority of the US subjects were white (n=83, 95.4%) and not Hispanic or Latino (n=81, 93.1%).

Table 3: Descriptive Statistics of Demographic Characteristics (ITT Analysis Set)

Parameter	Mean	Std	Min	Median	Max	n
Age (Years)	58.8	12.5	24.0	61.0	81.0	151
Height (cm)	165.4	6.6	152.0	165.0	180.3	151
Weight (kg)	82.7	20.6	49.0	78.7	152.0	151
BMI (kg/m^2)	30.2	6.9	18.3	28.6	49.8	151

Table 4: Race and Ethnicity (ITT-US Analysis Set)

Characteristic / Result		N	%
Race	Black or African American	3	3.4
	White	83	95.4
	Other - Hispanic	1	1.1
	All	87	100.0
Ethnicity	Hispanic or Latino	6	6.9
	Not Hispanic or Latino	81	93.1
	All	87	100.0

Table 5 provides a summary of the subjects' related medical history. A total of 49 patients (32.45%) were on a stable dosage of overactive bladder (OAB) medication during the study.

Table 5: Frequency Distribution of Related Medical History (ITT Analysis Set)

Medical History	Any								Ongoing?					
	Yes		No		Unknown		All		Yes		No		All	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Lifestyle Modification, Pelvic Muscle Training, Biofeedback	147	97.4	4	2.6	0	0.0	151	100.0	84	57.1	63	42.9	147	100.0
Botulinum Toxin Injections	18	11.9	132	87.4	1	0.7	151	100.0	0	0.0	18	100.0	18	100.0
Peripheral Tibial Nerve Stimulation	29	19.2	121	80.1	1	0.7	151	100.0	0	0.0	29	100.0	29	100.0
OAB Medication	150	99.3	1	0.7	0	0.0	151	100.0	49	32.7	101	67.3	150	100.0

Table 6 presents the subjects' key symptoms at baseline.

Table 6: Mean Values of Key Symptoms at Baseline (ITT Analysis Set)

Parameter	Mean	Std	Min	Median	Max	n
urgency related leaks / day	4.8	2.9	1.0	4.0	17.7	151
Urgency episodes/day	6.7	3.3	1.6	6.1	22.0	151
Voids/day	10.0	3.3	1.9	9.3	21.4	151

Safety and Effectiveness Results

The safety and effectiveness endpoints were evaluated using the ITT population. The ITT analysis set consists of all subjects in whom implantation of the Revi System was attempted (n=151).

Primary Safety Endpoint Results

Among the 151 implanted subjects, 117 (77.5%) had at least 1 AE, for a total of 286 AEs. This includes one AE that was adjudicated as part of the normal wound healing process and not an actual AE by the Clinical Events Committee (CEC). There were no procedure/device related SAEs or unanticipated device/procedure related AEs in the safety (ITT) population. Of the 285 adjudicated events, a total of 6 subjects (4%) experienced 6 device related AEs and a total of 16 subjects (10.6%) experienced 16 procedure related AEs. All device and procedure related AEs were considered mild/moderate. The device and procedure related AEs included pain, infection, wound dehiscence, numbness after surgery, swollen foot, cellulitis and hematoma.

For the 6 device related adverse events, all were related to pain associated with the device treatment or stimulation. Five of the six resolved spontaneously, by altering the stimulation parameters or with antibiotic treatment. One event was classified as ongoing, and the patient opted for explantation after completion of her 12 month follow up. All device related AEs except 2 were identified within 6 months of device activation and resolved within 2 months from their identification.

Of the 16 procedure related adverse events, ten were related to a surgical wound. All but one surgical wound related AE were treated with a course of antibiotics. One adverse event was a surgical wound related hematoma, which resolved spontaneously. Five of the other non-surgical wound related adverse events that were reported resolved spontaneously. One surgical wound related AE was related to pain, and the device was explanted after completion of that subject's 12 month follow up. All the procedure related AEs were identified within 20 days post implantation, and except one, all of these AEs were resolved within two months from their identification.

Primary Effectiveness Endpoint Results

The primary effectiveness endpoint was defined as the proportion of subjects with ≥50% improvement in average number of UUI episodes at 6 months post system activation. As shown in Table 7, the Revi System demonstrated clinically and statistically significant improvement in UUI episodes marked by a 76.4% (CI: 68.7%-82.6%) responder rate at 6 months, where a responder was defined as a subject improving at least 50% in their UUI episodes compared to baseline.

Table 7: Primary Effectiveness Endpoint Analysis

Primary Endpoint	Responders	Lower 95% CL	Upper 95% CL	P-Value
≥50% reduction in UUI at 6-month (PG: 50%)	76.4%	68.7%	82.6%	<.0001
≥50% reduction in UUI at 12-month*	78.4			

*12-month data are considered post-hoc and no statistical inference can be made from these data.

Secondary Effectiveness Endpoint Results

As shown in Table 8, clinically and statistically significant improvement was also demonstrated by the secondary effectiveness endpoint HRQL with a response rate of 83.6% (CI: 76.7%-88.7%) at 6-months post activation. Since large volume UUI episodes are considered the most debilitating symptom for wet OAB patients, a composite secondary endpoint (including UUI episodes and large UUI episodes) was assessed, with a clinically and statistically significant response rate of 88% (CI: 81.6%-92.4%) at 12 months. The last secondary endpoint pertained to frequency and urgency. This secondary endpoint also demonstrated a statistically significant improvement in voids and urgent episodes (PPIUS degree 3,4), with response rate of 74% (CI: 65%-81.3%) at 6-months post activation.

Table 8: Secondary Effectiveness Endpoint Analysis (6-months and 12-months)

Secondary Endpoints	Responders	Lower 95% CL	Upper 95% CL	P-Value
≥10 points (MID) in HRQL (OABq) at 6-month (PG: 50%)	83.6%	76.7%	88.7%	<.0001
≥10 points (MID) in HRQL (OABq) at 12-month*	84.6%			
≥50% reduction in UUI or large volume UUI at 12-month (PG: 50%)	88%	81.6%	92.4%	<.0001
Improvement in urgency episodes and voids at 6-month (PG: 45%)	74%	65%	81.3%	<.0001
Improvement in urgency episodes and voids at 12-month*	80.1%			

*12-month data are considered post-hoc and no statistical inference can be made from these data.

The 12-month data related to the primary and secondary endpoints are included in Table 7 and 8. The 12-month data were important to determine the durability of the device effect and to ensure that the study outcome is not influenced by placebo effect as this study was single-arm. The 12-month data for the primary effectiveness and secondary effectiveness endpoints demonstrated clinically significant improvement of UUI and urinary urgency related symptoms. However, the 12-month data for the primary effectiveness endpoint and two of the secondary effectiveness endpoints (i.e., ≥10 points (MID) in HRQL (OABq) and improvement in urgency episodes and voids) are considered post-hoc. No statistical inference can be made using those data because in the statistical analysis plan those pre-defined effectiveness endpoints were to be assessed at 6-months.

The original pre-specified performance goals for the primary and secondary effectiveness endpoints were within the range of 45%- 50%, which FDA considered too low considering the risks of the Revi System. However, the observed responder rates are much higher than the pre-defined performance goals. The observed responder rates reported from the OASIS study for the effectiveness endpoints were in the range of 74%-82%, which are clinically meaningful.

Assessment of Individual Symptoms

The sponsor provided a post-hoc analysis with the mean improvement in different symptoms compared to the baseline for the ITT population (N =151), calculated from the 7-day patient voiding diary at 12-months follow-up. Table 9 below shows the percentage mean improvement of different symptoms at 12-months of device activation compared to the baseline:

Table 9: Assessment of Individual Symptoms at 12-months Follow-up

Symptom	Baseline mean value of symptom/day (X)	Mean value of symptom/day at 12-months of device activation (Y)	Percentage mean improvement of symptom at 12-months of device activation compared to baseline = $\frac{X-Y}{X} \times 100\%$
UUI episodes/day	4.8	1.2	75%
Urgency episodes/day	6.7	2.3	65.7%
Urinary frequency (voids/day)	10	8.3	17%

As shown in Table 9, the Revi System showed clinically meaningful improvements in UUI and urgency related symptoms at 12-months. However, the reduction in urinary frequency at 12 months is not clinically meaningful, and these data do not support a urinary frequency indication.

Subgroup Analysis – OAB Medications

As shown in Table 5, at baseline, 49 subjects reported taking OAB medications, and 101 reported not taking any OAB medications. A subgroup analysis of the primary effectiveness endpoint indicated that the reported rate of responders in the subgroup of subjects who took OAB medications was higher compared to those who did not take OAB medications, 89% versus 70%. The higher responder rate from the subgroup of subjects who took OAB medications is expected. However, for the subgroup of subjects who did not take OAB medications, the responder rate was still clinically meaningful and met the pre-defined performance goal of 50%.

Protocol Deviations

A total of 309 protocol deviations were reported in 117 subjects in the study. The most frequent type of deviation was related to visit schedule (n=137). The majority of these (n=127) were for visits performed out of window. These deviations were primarily due to subject unavailability (n=27; 21.2%) or miscalculation of the visit window by the site (n=55; 43.3%). There were 120 deviations that were related to study procedures. Ten of these were related to missing assessments for remote visits that had to be performed in lieu of in-person visits due to the COVID-19 pandemic. In these instances, it was not possible to perform parameter settings, leg circumference measurements, or urinalysis. Other study procedure-related protocol deviations that resulted in a protocol deviation were related to recommendations in the protocol that were not routine care at investigator facilities (i.e., alternative suture material, type of antibiotic), missed labs (bloodwork at follow-up visits, urine cultures, vital signs, etc.). Twenty four deviations were related to the informed consent procedure (e.g., subject not initialing each page, subjects signed

the incorrect version at the baseline visit, etc.). There were 7 deviations related to eligibility criteria. Of these deviations, 2 subjects indicated mixed stress/urge incontinence on the MESA questionnaire but no stress on the 7-day patient voiding diary. In both cases, the investigators felt the subjects did not understand the MESA questionnaire and had no other indications of stress incontinence; as such, both subjects were approved for enrollment. There were no study procedure deviations related to collection or assessment of adverse events or voiding activities.

Based on the pivotal clinical study results, the Revi System demonstrated clinically meaningful improvement in UUI and urinary urgency related symptoms up to 12 months.

The sponsor conducted a pilot study before starting the OASIS pivotal trial to understand the preliminary safety and effectiveness profile of the Revi System. In the pivotal study, the sponsor did not enroll any male subjects. However, in their pilot study 5 of the 34 implanted subjects were men (14.7%). After 6 months follow-up, 67% of the male subjects and 50% female subjects showed more than 50% reduction in UUI episodes/ day compared to the baseline. Eight percent of device or procedure related AEs were reported in men. Overall, at 6-months of follow-up, the male subjects demonstrated similar safety and effectiveness outcomes compared to the female subjects implanted with the Revi System during the pilot study. Additionally, for the pivotal study, 12 months of follow-up data were provided to support this De Novo. Although, the sample size of the pilot study was small, the pilot study data provided preliminary support of the durability of the Revi System treatment through 3 years of follow-up. While 20 subjects signed the informed consent for the long term follow-up, only 15 subjects completed the long term follow-up. Seventy-five percent (75%) of the patients demonstrated more than 50% reduction in UUI episodes/ day compared to the baseline during the long term, follow-up. The 3 year pilot study data demonstrated no reduction in device effectiveness over time (tachyphylaxis), and the sponsor further mitigated the risk of tachyphylaxis by providing labeling mitigations.

Pediatric Extrapolation

In this De Novo request, existing clinical data were not leveraged to support the use of the device in a pediatric patient population.

LABELING

The Revi System labeling consists of the package label and 7 different manuals: Implant Patient Leaflet, Revi Surgical Technique Guide, Revi Clinician Programmer User Manual, Revi Patient Therapy Guide, Revi Wearable Quick Start Guide, Revi Implant Instructions for Use and Revi Patient ID Cards. The labeling documents are consistent with the clinical data and covers all the hazards and other clinically relevant information that may impact use of the device. The labeling is sufficient and satisfies the requirement of 21 CFR 801.109 for prescription devices. Both the physician and patient labeling include the indications for use, device description, contraindications, warnings, precautions, summary of the clinical study, instructions for use, storage information, and troubleshooting.

Per the special controls for this generic type of device, labeling includes a contraindication against use of the subject device during pregnancy[1]. Transcutaneous Electrical Nerve Stimulation (TENS) devices are contraindicated for pregnancy. As the subject device is also intended to deliver electrical stimulation to the tibial nerve, both TENS devices and the subject device have a similar mechanism of action. Electrical stimulation during pregnancy may induce premature labour. Therefore, similar to TENS devices, pregnancy must be one of the contraindications listed on the labeling for the subject device. Labeling special controls also includes a contraindication against using the device in men who have Benign Prostatic Hyperplasia (BPH) or other lower urinary tract obstructions[2]. This contraindication was included because using a neurostimulator like the subject device will not provide any symptom relief for these patients since their symptoms (i.e., UUI and urinary urgency) are not related to OAB. Additionally, for the patients who have lower urinary tract obstructions, this type of neurostimulators may relax the bladder muscles, which can result in a large volume of urine retention and can cause clinical harm. Therefore, for men who have mechanical obstructions such as BPH or other lower urinary tract obstructions, the risks of using the subject device outweighs its benefits.

The labeling special controls also includes instructions to prevent overstimulation related nerve/tissue damage on the labeling, avoid mechanical injuries to nerve/tissue caused by the implanted component migration, and prevent pain and discomfort. Further, clinical information related special controls are in the labeling, including a detailed summary of the device and procedure related adverse events pertinent to use of the device, inclusion of information on the patient population for which there is clinical evidence of effectiveness, and listing the potential risks and benefits associated with use of the device.

RISKS TO HEALTH

The table below identifies the risks to health that may be associated with use of implanted tibial electrical urinary continence device and the measures necessary to mitigate these risks.

Table 10: Identified Risks to Health and Mitigation Measures

Risks to Health	Mitigation Measures
Overstimulation leading to nerve/tissue damage	Non-clinical performance testing Electromagnetic compatibility testing Electrical safety testing Software verification, validation, and hazard analysis Wireless coexistence testing Labeling
Adverse tissue reaction	Biocompatibility evaluation Labeling
Infection	Sterilization validation Shelf-life testing Labeling
Thermal injury	Non-clinical performance testing Thermal safety testing Electrical safety testing
Interference with other medical devices	Electromagnetic compatibility testing Magnetic resonance compatibility testing

	Electrical safety testing Software verification, validation and hazard analysis Wireless coexistence testing Labeling
Pain and discomfort	Non-clinical performance testing Electrical safety testing Labeling
Electrical shock or stimulation of non-target tissue	Electrical safety testing Electromagnetic compatibility testing Labeling
Mechanical injury to device or tissue/nerves	Non-clinical performance testing Labeling
Undesired fluid retention due to use in inappropriate population	Labeling

SPECIAL CONTROLS

In combination with the general controls of the FD&C Act, an implanted tibial electrical urinary continence device is subject to the following special controls:

(1) Non-clinical performance testing must demonstrate that the device performs as intended under anticipated conditions of use. The following testing must be conducted:
   (i) Electrical performance testing of the device must be conducted to validate the specified electrical output and duration of stimulation of the device; and
   (ii) Testing must verify the implant can withstand clinically relevant forces during and after implantation.

(2) The patient-contacting components of the device must be demonstrated to be biocompatible.

(3) Performance data must demonstrate the sterility of the patient-contacting components of the device.

(4) Performance data must support the shelf life of the device by demonstrating continued sterility of patient contacting components, package integrity, and device functionality over the identified shelf life.

(5) Performance testing must demonstrate the electromagnetic compatibility, electrical safety, thermal safety and wireless performance of the device.

(6) Software verification, validation, and hazard analysis must be performed.

(7) Performance testing must evaluate the compatibility of the device in a magnetic resonance environment.

(8) Labeling for the device must include:
   (i) A contraindication against use during pregnancy;
   (ii) A contraindication against using the device in men who have Benign Prostatic Hyperplasia (BPH) or other lower urinary tract obstructions;
   (iii) A detailed summary of the device technical parameters and the typical course of treatment;
   (iv) Device- and procedure-related adverse events pertinent to use of the device; and

(v) A shelf life for any sterile components.

(9) Patient labeling must include:
   (i) Post-operative care instructions to avoid infection and inflammation of the surgical site;
   (ii) Instructions to avoid overstimulation related nerve/tissue damage;
   (iii) Instructions to avoid mechanical injuries to nerve/tissue caused by the implanted component;
   (iv) Instructions for reprocessing/cleaning of any reusable components;
   (v) Clinical performance reported by relevant subgroups;
   (vi) The risks and benefits associated with use of the device;
   (vii) Information on the typical course of treatment;
   (viii) Instructions to avoid pain and discomfort; and
   (ix) Instructions to avoid interference with other medical devices.

BENEFIT-RISK DETERMINATION

The benefits and risks of the device are based on data collected in the clinical studies described above.

Regarding the probable benefits, based on the clinical performance data, the Revi System demonstrated a clinically and statistically significant improvement in UUI episodes marked by a 76.4% responder rate, where a responder was defined as a subject improving at least 50% in their UUI episodes compared to baseline. Clinically and statistically significant improvement was also demonstrated by secondary endpoints demonstrating a 83.6% improvement in Health-Related Quality of Life (HRQL) at 6-months post activation, a 88% improvement either average number of urgency related incontinence episodes or average number of severe/large urgency related incontinence episodes at 12-months post activation, and a 74% improvement in the average number of moderate-severe urgency episodes PPIUS degree 3,4 or <8 voids/day. When assessing individual symptoms, results indicated a clinically significant improvement in UUI (75%) and urinary urgency (65.7%) related symptoms compared to the baseline. Additionally, as compared to other implanted neurostimulation devices for treatment of UUI and urgency, the subject device has the advantage of a reduced risk of revision surgery since the battery is not implanted. No revision surgery related AEs were reported in the clinical study report.

Regarding the probable risks, a total of 285 total AEs were reported during the study. Among those, 22 AEs (7.7%) were device and procedure related. All device and procedure related AEs were mild or moderate in nature. The device and procedure related AEs included pain, infection, wound dehiscence, numbness after surgery, swollen foot, cellulitis and hematoma. Four of the 6 device related AEs resolved within the first 6 months of device activation. All but one procedure related AEs resolved withing the first 3 months of device activation. All device and procedure related AEs (except two) resolved spontaneously or through reprogramming of stimulation parameters or through antibiotic treatment. The two subjects with the unresolved AEs elected to have the Revi System explanted after 12-months.

Patient Perspectives

The pivotal clinical study used the following validated Patient Reported Outcome (PRO) as one of the secondary effectiveness endpoint :

- Proportion of subjects with ≥10 points (MID) improvement in Health Related Quality of Life (HRQL) (based on Overactive Bladder Questionnaire (OAB- q)) at 6 months post system activation, with a performance goal of 50%.

This secondary effectiveness endpoint demonstrated a clinically and statically significant improvement in HRQL with a response rate of 83.6% (CI: 76.7%-88.7%) at 6-months post activation.

Benefit/Risk Conclusion

In conclusion, given the available information above, for the following indication statement:

> The Revi System is indicated for the treatment of patients with symptoms of urgency incontinence alone or in combination with urinary urgency.

The probable benefits outweigh the probable risks for the Revi System. The device provides benefits, and the risks can be mitigated by the use of general and the identified special controls.

CONCLUSION

The De Novo request for the Revi System is granted and the device is classified as follows:

> Product Code: QXM
> Device Type: Implanted tibial electrical urinary continence device
> Regulation Number: 21 CFR 876.5305
> Class: II

References:

[1]https://www.oxfordhealth.nhs.uk/wp-content/uploads/2014/08/OP-100.15-TENS-machine-in-pregnancy.pdf

[2]https://www.ncbi.nlm.nih.gov/books/NBK567751/