

SUMMARY OF SAFETY AND EFFECTIVENESS DATA (SSED)

I. GENERAL INFORMATION

Device Generic Name: Stent, Urethral, Prostatic, Permanent or Semi-Permanent

Device Trade Name: ProVee System for BPH

Device Procode: MER

Applicant's Name and Address: ProVerum Limited
2nd Floor Astor Hall,
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Dublin 1, D01 N5W8,
Ireland

Date(s) of Panel Recommendation: None

Premarket Approval Application (PMA) Number: P250011

Date of FDA Notice of Approval: December 9, 2025

II. INDICATIONS FOR USE

The ProVee System for BPH is indicated for the treatment of obstructive lower urinary tract symptoms secondary to benign prostatic hyperplasia (BPH), in men with prostatic urethral lengths greater than or equal to 3.75 cm and prostatic volumes between 30 cc and 80 cc.

III. CONTRAINDICATIONS

Do not use the ProVee System for BPH in patients that have:

- Urinary incontinence due to an incompetent external sphincter
- Urethral pathologies that may prevent insertion of delivery system
- An active symptomatic urinary tract infection
- Current gross hematuria
- Microscopic hematuria of unknown cause
- Patients with known allergy to nickel or titanium
- Presence of an existing stent in the urethral tract

IV. WARNINGS AND PRECAUTIONS

The warnings and precautions can be found in the ProVee System for BPH labeling.

V. DEVICE DESCRIPTION

The ProVee System for BPH consists of the ProVee Expander (Figure 1) and Generation II Delivery System (Figure 2). The ProVee Expander is a nitinol implant that is pre-loaded in the Generation II Delivery System. The Generation II Delivery System is 16 Fr and has an irrigation feature to support visualization by allowing the user to clear debris from the field of view through the delivery of saline or deionized water. Both the ProVee Expander and Generation II Delivery System are single use sterile devices.



Figure 1: ProVee Expander

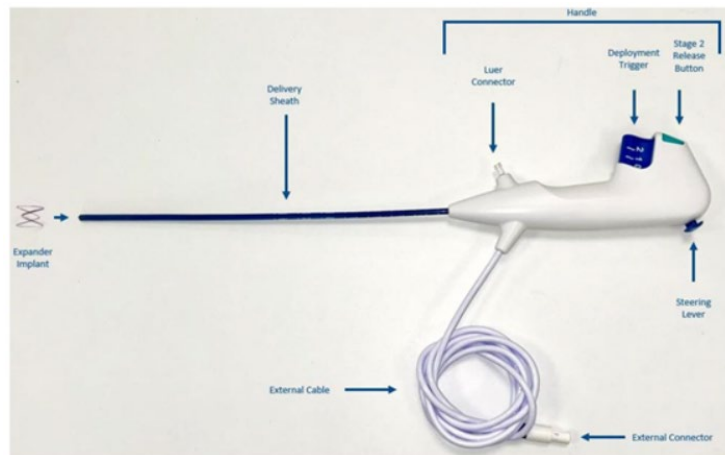


Figure 2: Generation II Delivery System

The ProVee System for BPH is used alongside the ProVee Video Processing Unit (VPU) cleared under 510(k) K251734. The ProVee VPU (Figure 3) displays imaging from the Generation II Delivery System to allow the expander to be deployed under direct visualization.



Figure 3: ProVee VPU

The ProVee Expander

The ProVee Expander is intended to be permanently implanted. It has three apices intended to correspond with the three dominant lobes of the prostate. The ProVee Expander applies radial expansion force to the dominant lobes (two lateral lobes and the median lobe) of the prostate that grow with BPH. After the ProVee Expander is deployed, the gap between the wire struts prevents the obstruction of the verumontanum. The ProVee Expander is available in one size.

Generation II Delivery System

The Generation II Delivery System facilitates the targeted deployment of the ProVee Expander. The Generation II Delivery System is 16 Fr and consists of the delivery sheath, luer connector, delivery handle and external cable.

The delivery sheath is the only direct patient contacting portion of the Generation II Delivery System. It is comprised of three sheaths: outer sheath, steering sheath, and camera sheath. The camera sheath consists of the camera tip with a CMOS imaging sensor, LEDs, and an irrigation channel. The Generation II Delivery System allows for staged, targeted deployment using control features that allow users to visualize the partially deployed ProVee Expander relative to the anatomical landmarks prior to full deployment.

The Generation II Delivery System uses a transurethral approach. It also has a flexible steerable system, which allows the patient to be positioned in either supine or lithotomy position during the procedure. The Generation II Delivery System also has an irrigation feature to clear debris from the field of view to support visualization.

ProVee Video Processing Unit (VPU)

The VPU is a reusable accessory that is necessary for the use of the ProVee System for BPH. The ProVee VPU is intended to display live imaging data from the Generation II Delivery System. The ProVee VPU is a class II video processor cleared under 510(k) K251734. This device is not part of this PMA submission.

The specifications of the ProVee System for BPH are provided in Table 1:

Table 1: Specifications for the ProVee System for BPH	
Item	Specification
ProVee Expander dimensions	Length: $20.7 \pm 0.5\text{mm}$ Internal Diameter: $18.62 \pm 0.7\text{mm}$
Generation II Delivery System dimensions	Length of delivery sheath: $320 \pm 2\text{ mm}$ Tip Outer Diameter: $< 16\text{ Fr}$
Implant material	Medical grade Nitinol

VI. ALTERNATIVE PRACTICES AND PROCEDURES

There are several other alternatives for the treatment of lower urinary tract symptoms attributed to BPH. According to the American Urological Association's (AUA) guidelines ⁽¹⁾, these alternatives include:

Medical Therapy

Medical therapy is typically the first treatment approach for BPH. Drug classes used to treat BPH include alpha blockers, 5-alpha reductase inhibitors, or a combination thereof, and phosphodiesterase-5 inhibitors.

Surgical Therapy

Surgical interventions for BPH include transurethral resection of the prostate (TURP), prostatectomy, transurethral incision of the prostate (TUIP), transurethral vaporization of the prostate (TUVAP), photoselective vaporization of the prostate (PVP), prostatic urethral lift (PUL), water vapor thermal therapy (WVTT), laser enucleation, robotic waterjet treatment (RWT), prostate artery embolization (PAE), and temporary and permanently implanted prostatic devices (TIPD).

Each alternative has its own advantages and disadvantages. A patient should fully discuss these alternatives with their physician to select the method that best meets expectations and lifestyle.

VII. MARKETING HISTORY

The ProVee System for BPH has not been marketed in the United States or any foreign country.

VIII. POTENTIAL ADVERSE EFFECTS OF THE DEVICE ON HEALTH

Below is a list of the potential adverse effects (e.g., complications) associated with the use of the device.

- Dysuria
- Hematuria
- Micturition urgency

- Urge incontinence
- Pollakiuria
- Penile pain
- Bladder spasm
- Nocturia
- Painful ejaculation
- Urethral pain
- Urinary incontinence
- Retrograde ejaculation
- Constipation
- Cystitis
- Diarrhea
- Hematospermia
- Hypertonic bladder
- Pelvic discomfort
- Pelvic pain
- Penile discomfort
- Stress urinary incontinence
- Testicular pain
- Urinary tract infection (UTI)
- Perineal pain
- Muscle Spasms
- Genital discomfort
- Device dislocation (movement)

For the specific adverse events that occurred in the clinical studies, please see Section X below.

IX. SUMMARY OF NON-CLINICAL STUDIES

A. Laboratory Studies

1. Bench Testing

As described in Table 2, the applicant conducted the bench testing to evaluate the safety and performance of the ProVee System for BPH. The test results demonstrate that the ProVee System met all acceptance criteria.

Table 2: Summary of Bench Testing Performed on the ProVee System for BPH			
Test	Test Purpose	Acceptance Criteria	Results
Implant Dimensional Verification	To verify dimensional specifications of the Expander wire, length, and diameter.	The Expander dimensions should meet dimensional specifications.	Pass

Table 2: Summary of Bench Testing Performed on the ProVee System for BPH

Test	Test Purpose	Acceptance Criteria	Results
Implant Af-Temperature Verification	To evaluate the Austenite finish temperature (Af) of the Expander per FDA recognized standard ASTM F2082/F2082M-16.	The Expander must have an Af temperature within the specified range.	Pass
Implant Corrosion Testing	To evaluate the susceptibility of the Expander to corrosion per FDA recognized standard ASTM F2129-19a.	Testing shall indicate that the Expander is not susceptible to corrosion. Note: Per the FDA guidance document, Technical Considerations for Non-Clinical Assessment of Medical Devices Containing Nitinol, issued in July 2021, if the corrosion study meets the specified acceptance criteria, and the surface finish approach is established, then a nickel ion release test is not warranted.	Pass
Implant Durability	To assess the durability performance of the Expander per FDA recognized standard F3067-14.	Visual inspection of Expander patency under 10X magnification after 1 year of simulated use. The Expander must be patent with no implant fractures.	Pass
Implant Strain Analysis/Fatigue Strain Limit and Factor of Safety	To evaluate the durability and integrity of the Expander using Finite Element Analysis (FEA) in simulated physiological conditions to calculate a fatigue factor of safety for the Expander per ASTM E739 and FDA recognized standard ASTM F3211.	Fatigue Safety Factor > 1	Pass
Implant Migration	To assess the migration potential of the Expander in a prostate model after 1 year of simulated use per FDA recognized standard F3067-14.	The Expander shall not migrate from the deployed position with no part of the implant in the bladder neck or external sphincter of the prostate model after 1-year simulated use under worst case physiological loading conditions.	Pass

Table 2: Summary of Bench Testing Performed on the ProVee System for BPH

Test	Test Purpose	Acceptance Criteria	Results
Implant Tensile Strength	To verify that the tensile performance of the implant exceeds the retrieval force.	The maximum force to retract the implant into the sheath is less than the minimum implant failure force.	Pass
Implant Radial Expansion Force	To measure the radial expansion force of the Expander implant at minimum <i>in vivo</i> resting diameter and at maximum <i>in vivo</i> resting diameter.	The implant rests at a position/diameter at which a force equilibrium exists between the implant and prostate.	Pass
Implant Crimping Force	To measure the force applied by the crimped implant to the inner diameter of the outer sheath of the delivery device.	At a minimum inner diameter of the outer sheath of the delivery device, the implant shall have a crimp force within a specified range.	Pass
Delivery System Functionality	To demonstrate that the Expander can be accurately placed in a simulated use model by evaluating each step of the Expander delivery process.	The delivery system shall deliver the Expander to the intended location and maintain its integrity.	Pass
Delivery System Maximum Insertion Width	To measure the maximum insertion width of the ProVee System for BPH.	Tip of the ProVee System for BPH <16.5 Fr (5.5mm).	Pass
Delivery System Image Quality	To demonstrate image quality of the ProVee System for BPH visualization features.	Image quality features of the delivery system must meet specified criteria.	Pass
Delivery System Image Latency	To measure the latency of the ProVee System for BPH.	Image latency must be within the allowable range.	Pass
Delivery System Handle Ergonomics	To verify the ProVee System for BPH handle dimensions allow the handle to be held one handed and compressed to fully deploy the Expander per ergonomic hand grip data	The delivery system dimensions must be within the allowable range.	Pass
Delivery System Integrity	To challenge the functional integrity of the ProVee System for BPH under irrigation by subjecting it to worst-case loading in simulated clinical use.	The delivery system shall withstand specified forces and maintain its integrity.	Pass

Table 2: Summary of Bench Testing Performed on the ProVee System for BPH			
Test	Test Purpose	Acceptance Criteria	Results
Delivery System Irrigation Flow Rate	To verify the minimum irrigation flow rate of the delivery device per FDA recognized standard ISO 20696: 2018.	The delivery system shall have an average flow rate that is greater than or equal to the specified minimum flow rate.	Pass
Delivery System Characterization of Maximum Deflection (Fatigue Testing)	To measure the maximum upwards deflection angle in stage 0 across cycles per FDA recognized standard ISO 8600-1: 2015.	The maximum deflection angle must be greater than or equal to the minimum specification for the maximum deflection angle.	Pass
Delivery System Tensile Strength (Camera Sheath and Outer Sheath Integrity)	To evaluate the tensile strength of the delivery system bonds.	The delivery system bonds must meet the establish acceptance criteria for integrity.	Pass

The applicant also conducted the following optical and color performance testing for the Delivery System:

- Photobiological Safety: The photobiological safety of the subject device was evaluated according to IEC 62471:2006 using measurement distances of 200 and 0 mm. The results of testing indicate the subject device is not expected to pose a photobiological safety risk to patients or operators.
- Field of View (FOV) and Direction of View (DOV): The FOV and DOV were evaluated based on the distance between the entrance pupil and the target (Method B of ISO 8600-3:2019). The subject device met the FOV and DOV specifications.
- Resolution and Depth of Field (DOF): The applicant evaluated the resolution characteristics of the delivery system based on modulation transfer function (MTF). The DOF was evaluated by measuring the MTF at the center of the FOV from near (3 mm) to far (50 mm) working distance. The resolution at the center and 70% FOV was also evaluated. The subject device met the DOF and MTF specifications.
- Geometric Distortion: Geometric distortion of the delivery device was characterized using geometric distortion versus image radius curves. The geometric distortion of the subject device was adequately characterized and is acceptable.
- Noise and Dynamic Range: The signal-to-noise (SNR) and dynamic range was evaluated according to ISO 15739: 2023. The subject device SNR and dynamic range values were acceptable.
- Image Intensity Uniformity (IIU): The IIU of the delivery device was evaluated by imaging a diffuse reflectance target illuminated only with the device's light source. The IIU was adequately characterized and is acceptable.

- **Color Performance:** The applicant evaluated the color performance of the subject device by positioning the subject device at a prespecified distance from the color target and illuminating the target only with the device's own light source. Optical measurements were taken from the color target (ground truth) and device display (reproduced data) to analyze the ability of the subject device to reproduce color and preserve color contrast. The results demonstrate the device has adequate color performance.

2. **Biocompatibility**

Biocompatibility testing was performed for all patient-contacting components of the ProVee System for BPH in accordance with 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", issued in September 2023.

The following biocompatibility endpoints were assessed:

- The ProVee Expander is categorized as an implant device, contacting tissue for permanent duration (>30 days).
 - Cytotoxicity (ISO 10993-5:2009)
 - Sensitization (ISO 10993-10:2021)
 - Intracutaneous Irritation (ISO 10993-23:2021)
 - Acute systemic toxicity (ISO 10993-11:2017)
 - Material mediated pyrogen (ISO 10993-11: 2017)
 - 4, 13-week subacute/subchronic systemic toxicity following implantation (ISO 10993-11:2017)
 - 4, 13-week intramuscular implantation (ISO 10993-6:2016)
 - Genotoxicity testing (ISO 10993-3:2014)
 - Chemical characterization (ISO 10993-18:2020) followed by Toxicological Risk Assessment 10993-17:2023) to evaluate genotoxicity, chronic systemic toxicity, carcinogenicity, and developmental/reproductive toxicity.
- The Generation II Delivery System is categorized as a limited contact device with intact mucosal membrane (<24 hours).
 - Cytotoxicity (ISO 10993-5:2009)
 - Sensitization (ISO 10993-10:2021)
 - Intracutaneous Irritation (ISO 10993-23:2021)

The results of biocompatibility testing demonstrated that all patient-contacting components of the ProVee System for BPH are biocompatible.

3. **Sterility/Shelf-Life/Reprocessing**

The ProVee Expander is preloaded in the Gen II Delivery System, and both components are single use sterile devices. The ProVee System for BPH is

sterilized by ethylene oxide (EO) gas to an assurance level (SAL) of 10^{-6} per ISO 11135:2014. The applicant tested the ProVee System for BPH for EO residuals in conformance with ISO 10993-7:2008 to ensure that maximum residual levels of EO and ethylene chlorohydrin (ECH) remaining on the ProVee System for BPH after sterilization do not exceed the recommended limits for medical devices with permanent patient contact.

The shelf-life for the ProVee System for BPH is established at 12 months based on an accelerated aging study conducted on ProVee System for BPH. To support the 12 months shelf life, package integrity and functional testing were conducted. Package integrity was validated in accordance with ISO 11607-1:2019. Packages were inspected for visual inspection (ASTM F1886/F188M-16), seal strength (ASTM F88/F88M-21), and leakage testing by bubble test (ASTM F2096-19).

The functional testing conducted after accelerated aging is described in Table 2 above. The results demonstrated that ProVee System for BPH has acceptable package integrity and functional performance over the duration of its 12-month shelf life.

4. **Electromagnetic Compatibility & Electrical Safety**

The applicant conducted electromagnetic compatibility and electrical safety testing on the ProVee System for BPH in accordance with the following standards:

- IEC 60601-1:2005 + A2: 2020, Medical Electrical Equipment, General requirements for safety - Collateral standard: Safety requirements for medical electrical systems
- IEC 60601-2-18:2009, Medical electrical equipment - Part 2-18: Particular requirements for the basic safety and essential performance of endoscopic equipment
- IEC 60601-1-2:2020, Medical electrical equipment – Part 1-2: General requirements for basic safety and essential performance – Collateral standard: Electromagnetic disturbances – Requirements and tests

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

5. **Magnetic Resonance (MR) Compatibility**

The applicant conducted MRI compatibility testing on the ProVee System for BPH to verify that it can be used in MRI environments (of 1.5 Tesla and 3.0

Tesla). The testing was conducted in accordance with the following FDA recognized standards: ASTM F2052-21, ASTM F2182-19e2, ASTM F2503-23 and ASTM F2213-17. The results demonstrated that ProVee System for BPH is MR Conditional under conditions specified on the labeling.

B. Animal Studies

The applicant conducted an animal study to determine the safety and effectiveness of the ProVee Expander prior to clinical testing.

A 6-month GLP large animal study was conducted in a healthy, intact male canine model for evaluation of implant migration, encrustation, erosion, pressure necrosis, urothelial hyperplasia/tissue ingrowth, stone formation, urethral edema, cellular atypia, and device failure or breakage. The study included 6 male dogs assigned to the test article group and 2 male dogs to the sham procedure group. Due to anatomical limitations, the implant was surgically deployed antegrade from the bladder into the prostatic urethra, rather than retrograde as clinically intended.

The study demonstrated successful deployment, patency of the prostatic urethra, implant durability, with no encrustation, erosion or perforation. The animal study supported long term *in vivo* safety of the ProVee Expander. FDA accepted the 6-month study duration, the minimum considered for this device type, because the supportive safety data raised no concerns that would warrant a longer evaluation. Similarly, the small cohort size (n=2) for the sham procedure group was deemed acceptable due to limited variability of data and the absence of unexpected early mortality.

X. SUMMARY OF PRIMARY CLINICAL STUDY(IES)

The applicant completed three (3) clinical studies as follows:

1. ProVerum “First in Man” PROVE Study – This was a feasibility study for the ProVee System for BPH.
2. ProVIDE Study (G210344) – This was the pivotal clinical study for the ProVee System for BPH.
3. ProVIDE II Bridging study (G230354) – This study evaluated a new version the delivery system, the Gen II Delivery System.

1. “First in Man” Study (PROVE Study)

The applicant conducted a prospective, non-randomized, single center feasibility clinical study between May 2019 and November 2019 at an investigational site in Australia to evaluate the ProVee System for BPH. Men ≥ 50 years with moderate-to-severe symptomatic BPH, International Prostate Symptom Score (IPSS) of > 15 , peak urinary flow rate (Q_{max}) of < 12 mL/s, prostate volume of ≥ 30 and ≤ 80 cc, and prostatic urethral lengths ≥ 4 cm were the target population. Ten subjects were enrolled, were

implanted with the ProVee Expander and completed the study follow-up visits. The patients were followed up to 24 months after the procedure.

Of the 10 implanted subjects, 12 total adverse events (AEs) were reported in 7 of the implanted subjects. There were no device or procedure related serious AEs or unanticipated adverse device effects (UADEs). All but one AE resolved within 24-month follow-up period. There was 100% technical success in the deployment of the implant. There were no procedural complications, all patients voided post procedure, and no patients required post-operative catheterization.

At 24-months, there was a 40% improvement from baseline in Qmax and men not on LUTS medication prior to the procedure showed an average improvement from baseline in IPSS of 37%. There were no surgical re-treatments through 24-months.

2. Pivotal Clinical Study (ProVIDE Study)

The applicant performed a pivotal clinical study to establish reasonable assurance of safety and effectiveness of the ProVee System for BPH in treatment of obstructive lower urinary tract symptoms secondary to BPH in the US, Ireland, and Canada under IDE# G210344. Data from this clinical study were the basis for the PMA approval decision. A summary of the clinical study is presented below.

A. Study Design

Patients were implanted with the ProVee Expander between June 9, 2022, and March 15, 2024. The database for this PMA reflected data collected through March 5, 2025 and included 221 patients. There were 17 investigational sites.

The study was a prospective, multi-center, double-blind, 2:1 randomized, sham controlled, clinical study. Subjects in both arms were blinded for 3 months following

implantation. At 3 months, patients in the sham arm could elect to crossover into the device arm. All subjects were then followed up through 60 months.

The control group was a sham treatment in which a ureteroscope was placed through an access sheath without deployment of an implant.

1. Clinical Inclusion and Exclusion Criteria

Enrollment in the ProVIDE study was limited to patients who met the following inclusion criteria:

- 1) Males $\geq$ 45 years of age
- 2) IPSS of $\geq$ 13, IPSS V/S $\geq$ 1 at baseline assessment
- 3) Prostate volume of $\geq$ 30 cc and $\leq$ 80 cc
- 4) Prostatic urethral L2 lengths $\geq$ 3.75cm by transrectal ultrasound (TRUS)
- 5) Failed, intolerant, or subject choice to not take a medication regimen for the treatment of lower urinary tract symptoms (LUTS)

Patients were not permitted to enroll in the ProVIDE study if they met any of the following exclusion criteria:

- 1) Void volume $\leq$ 125 ml; Qmax $\geq$ 12ml/s; PVR $>$ 250 ml
- 2) Obstructive median lobe defined by EITHER $>$ 10mm protrusion on sagittal mid-prostate plane as measured by TRUS OR an obstructive median lobe seen on cystoscopy e.g., ‘ball valve’
- 3) High bladder neck, with the absence of lateral lobe encroachment indicating a high likelihood of primary bladder neck obstruction
- 4) Anatomy that would prevent the apices of the ProVee Expander from engaging with the lateral lobes; e.g., high degree of bladder neck angulation such that the anterior bladder neck is not visible
- 5) Acute urinary retention
- 6) Known immunosuppression
- 7) History of or suspected prostate or bladder cancer
- 8) Baseline prostate specific antigen (PSA) $>$ 10 ng/mL or confirmed or suspected prostate cancer (Subjects with a PSA level above 2.5 ng/mL, or age specific, or local reference ranges should have prostate cancer excluded to the Investigator's satisfaction, including a standard of care (SOC) biopsy if indicated)
- 9) Recent urinary tract stones OR widespread calcifications on the prostatic urethral wall, within 3 months of index procedure
- 10) A history of prostatitis within the last two years
- 11) Active or history of epididymitis within the past 3 months
- 12) Neurogenic bladder and/or sphincter abnormalities due to Parkinson's disease, multiple sclerosis, cerebral vascular accident, diabetes.
- 13) History of urinary retention within 12 months of baseline assessment
- 14) Requiring self-catheterization to void
- 15) An active urinary tract infection (UTI) at time of index procedure

- 16) Gross hematuria, within 3 months of index procedure
- 17) Subjects with known allergy to nickel or titanium
- 18) Life expectancy estimated to be less than 60 months
- 19) Taking androgens, unless eugonadal state for at least 3 months or greater with a stable dosage for at least 2 months as documented by the Investigator
- 20) Use of 5-alpha-reductase inhibitors (e.g., dutasteride, finasteride) within 6 months of baseline assessment
- 21) Use of Phenylephrine / Pseudoephedrine within 24 hours of baseline assessment
- 22) Use of alpha-blockers (e.g., Terazosin, Doxazosin, Alfuzosin, Tamsulosin) within 2 weeks of baseline assessment
- 23) Use of estrogen or drug-producing androgen suppression (e.g. gonadotropin- releasing hormonal analogues) within 1 year of baseline assessment
- 24) Use of antihistamines, anticonvulsants, and antispasmodics within 1 week of baseline assessment unless there is documented evidence that the patient was on the same drug dose for at least 6 months with a stable voiding pattern (the drug dose should not be altered or discontinued for entrance into or throughout the study)
- 25) Use of anticholinergics or cholinergic medication within 2 weeks of baseline assessment
- 26) Use of beta-blockers where the dose is not stable. (Stable dose is defined as having the same medication and dose in the last 6 months)
- 27) Use of Phosphodiesterase-5 Enzyme Inhibitors in doses for BPH within 2 weeks of baseline assessment
- 28) Current treatment with anticoagulants (e.g., coumadin or enoxaparin) or antiplatelet medications other than aspirin (e.g., clopidogrel, or alternative and ASA). Patient unable to stop taking anticoagulants and/or antiplatelets within 3 days prior to the procedure or coumadin at least 5 days prior to the procedure. Low dose aspirin $\leq 100\text{mg/day}$ not prohibited
- 29) Future fertility concerns
- 30) Previous prostate surgery, balloon dilatation, stent implantation, laser prostatectomy, hyperthermia, or any other invasive treatment to the prostate; including penile implants
- 31) Previous pelvic irradiation or radical pelvic surgery
- 32) Previous rectal surgery (other than hemorrhoidectomy) or known history of rectal disease
- 33) Urethral strictures, bladder neck contracture, or other potentially confounding bladder pathology
- 34) Urethral pathologies that may prevent insertion of Delivery System
- 35) Uncontrolled diabetes mellitus including Hgb A1C $>8\%$
- 36) Overactive bladder (OAB) requiring treatment by OAB medication

- 37) Urinary incontinence
- 38) Patients taking tri-cyclic antidepressants
- 39) Compromised renal function (i.e., serum creatinine >1.8 mg/dl or upper tract disease)
- 40) Hepatic disorder, bleeding disorders or metabolic impairment that might confound the results of the study or have a risk to subject per investigator's opinion
- 41) Any major comorbidities or presence of unstable conditions, e.g., uncontrolled HTN, NYHA Class III or IV, cardiac arrhythmias that are not controlled by medication/medical device, myocardial infarction within the past 6 months, COPD with FEV1 <50, renal illness that might prevent study completion or would confound study results
- 42) Vulnerable populations such as incarcerated or institutionalized adults, inmates, patients with physical, psychological (such as developmentally delayed adults), or medical impairment that might, in the judgment of the Investigator, prevent study completion or comprehension, or may confound study results (including patient questionnaires)
- 43) History or current medical condition that would result in an unacceptable patient risk if that subject were to be included in the study
- 44) Any subject that is currently enrolled in another ongoing investigational study

2. Follow-up Schedule

All subjects were scheduled to return for follow-up examinations at 1 months, 3 months, 6 months, and 12 months postoperatively. Subjects will continue to be followed up annually through 5 years.

Preoperatively, the following assessments were completed for during study screening: physical exam and measuring vital signs, International Prostate Symptom Score (IPSS) and Quality of Life (QoL) questionnaires, the abridged International Index of Erectile Function -5 (IIEF-5) and Male Sexual Health Questionnaire – Ejaculatory Dysfunction (MSHQ-EjD), Face Pain Scale-Revised (FPS-R), Uroflowmetry, Post Void Residual Volume (PVR), Prostate-specific antigen (PSA), Complete blood count (CBC), Renal Function, Trans-rectal ultrasound (TRUS), cystoscopy and concomitant medications.

Postoperatively, the assessments completed included the International Prostate Symptom Score (IPSS) and Quality of Life (QoL) questionnaires, the abridged International Index of Erectile Function -5 (IIEF-5) and Male Sexual Health Questionnaire – Ejaculatory Dysfunction (MSHQ-EjD), Face Pain Scale-

Revised (FPS-R), Uroflowmetry, Post Void Residual Volume (PVR), Cystoscopy (at 1 year follow-up only) and concomitant medications.

Adverse events and complications were recorded at all visits.

The key timepoints are shown below in the tables summarizing safety and effectiveness.

3. Clinical Endpoints

With regards to safety, the primary safety endpoints included the following:

- the rate of device or procedure related serious adverse events were evaluated through 12-months
- the rate of extended post-operative urinary catheterization (>7 days from treatment) for inability to void among patients treated with the ProVee Expander

The secondary safety endpoints including the following:

- Rate of device or procedure related adverse events at all time points.
- Comparison pain at discharge to 1, 3, 6 and 12-month follow-up visits per Faces Pain Scale-Revised Questionnaire (FPS-R).
- Change in sexual health characterized by change in the International Index of Erectile Function, specifically the Erectile Function domain (IIEF-5) and Male Sexual Health Questionnaire- Ejaculatory Domain (MSHQ-EjD) at 3, 6 and 12 – month post treatment.
- Proportion of subjects with adverse events classified as Clavien-Dindo Grade IIIb or higher or any event resulting in persistent disability evidenced through 3-month follow-up visit.
- Assessment of retrieval procedure related adverse events related to implant removal.

With regards to effectiveness, the co-primary effectiveness endpoints were as follows:

- Reduction in BPH symptoms compared to sham at 3 months compared to baseline as measured by IPSS. The mean 3-month improvement from baseline score for IPSS for the ProVee arm should demonstrate a minimum statistical margin of 25% compared to mean improvement from baseline for IPSS for the Sham arm.
- Symptom improvement by measurement of mean percent change in IPSS at 12 months compared to baseline. The mean percent change from baseline in IPSS at 12-months post-implant for the ProVee arm Group is less than -30%.

The secondary effectiveness endpoints included the following:

- Percent of subjects who experience at least a 30% improvement in IPSS from their baseline pre-treatment score at 1, 3, 6 and 12 - month post treatment.

- Percent change in IPSS in the treatment arm compared to baseline at all timepoints post treatment.
- Mean improvement from baseline in QoL questionnaire at 3, 6, 12-month follow-up visits.
- Mean improvement from baseline in uroflowmetry measures of peak flow rate (Qmax) as measured at all timepoints.
- Mean improvement from baseline in PVR as measured at all timepoints.
- Post-procedure incidence of secondary reintervention using alternate surgical LUTS therapy.
- Post-procedure incidence of secondary reintervention using prescribed pharmacological agents for BPH LUTS therapy.

With regard to success/failure criteria, an individual patient was considered an IPSS responder if their IPSS score improved by at least 30% at 12 months compared to baseline. The study was considered a success if both co-primary effectiveness endpoints were met, and the device had an acceptable safety profile.

B. Accountability of PMA Cohort

At the time of database lock, of 221 patients enrolled in the PMA study, 201 patients (91%) were available for analysis at the 12-month post-operative visit. Patients were considered enrolled after signing the informed consent form and meeting all the inclusion criteria and none of the exclusion criteria.

Eleven subjects in the ProVee treatment arm and 7 subjects in the Sham arm exited the study before the 12-month follow-up. In the ProVee treatment arm, one subject did not receive a ProVee device, one subject was lost to follow-up, one subject died (adjudicated by CEC as unrelated to either the ProVee device or the study procedure); two subjects withdrew due to unwillingness to participate in the trial; three subjects were withdrawn by the study investigator (patients were not happy with their symptom improvement and requested device removal); and three subjects due to drug re-intervention. In the sham arm, one subject was lost to follow up, 6

subjects elected not to cross over. The subject disposition for the study through 12 months is provided in Figure 4:

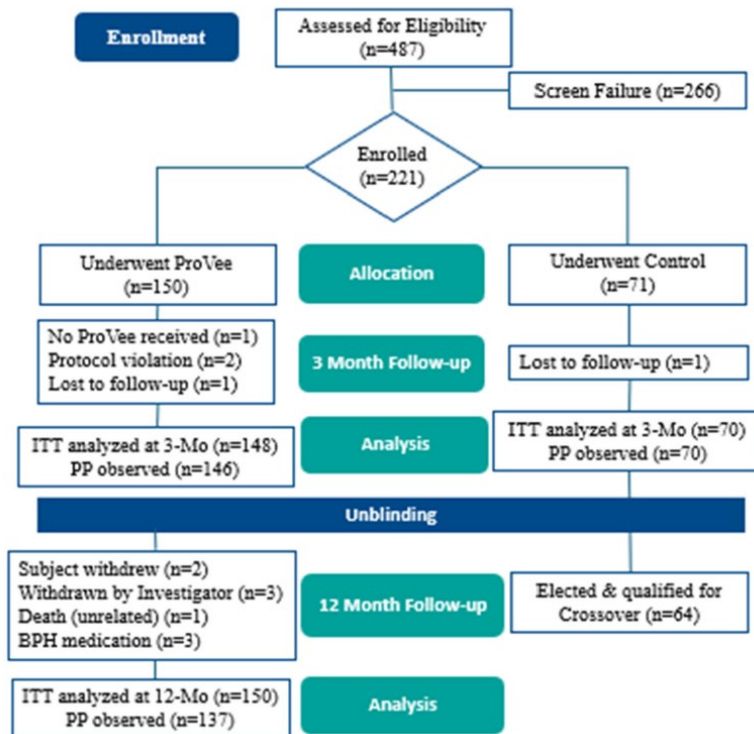


Figure 4: Subject Accountability Flow Chart

The analysis sets were pre-specified in the protocol as follows:

Intent-to-Treat cohort (ITT): All eligible subjects who are randomized and who had the implant deployed during the index procedure are included in the ITT regardless of outcome.

Per Protocol Cohort (PP): The PP cohort is defined as the group of subjects who complete the treatment procedure and who complete their 3-month follow-up visit without any protocol violations.

Safety Cohort: The safety population is the same as the ITT population.

Analyses of all primary and secondary effectiveness endpoints were completed for the safety/ITT cohort and for the PP cohort. Study success was based on safety/ITT cohort. Analyses for all safety-related endpoints were performed using the safety/ITT cohort.

C. Study Population Demographics and Baseline Parameters

The demographics of the study population are typical for a BPH study performed in the US.

The demographic information for the subjects enrolled in the study are provided in Table 3. The demographics and baseline characteristics are well matched between the ProVee and sham arms.

Table 3: Subject Demographics				
Characteristic	ProVee (N=150)	Sham (N=71)	Crossover (N=64)	Total (N=221)
Age	64.0 (150)	64.5 (71)	64.3 (64)	64.1 (221)
Race				
American Indian or Alaska Native	0.0% (0/150)	0.0% (0/71)	0.0% (0/64)	0.0% (0/221)
Asian	1.3% (2/150)	0.0% (0/71)	0.0% (0/64)	0.9% (2/221)
Black or African American	5.3% (8/150)	1.4% (1/71)	1.6% (1/64)	4.1% (9/221)
Hawaiian or Pacific Islander	0.0% (0/150)	0.0% (0/71)	0.0% (0/64)	0.0% (0/221)
White	91.3% (137/150)	95.8% (68/71)	95.3% (61/64)	92.8% (205/221)
Multi-Racial	0.7% (1/150)	0.0% (0/71)	0 (0/64)	0.5% (1/221)
Other	1.3% (2/150)	1.4% (1/71)	1.6% (1/64)	1.4% (3/221)
Not Collected	0.0% (0/150)	1.4% (1/71)	1.6% (1/64)	0.5% (1/221)
Ethnicity				
Hispanic or Latino	12.7% (19/150)	8.5% (6/71)	9.4 % (6/64)	11.3% (25/221)
Not Hispanic or Latino	85.3% (128/150)	88.7% (63/71)	87.5 % (56/64)	86.4% (191/221)
Not Collected	2.0% (3/150)	2.8% (2/71)	3.1 % (2/64)	2.3% (5/221)

The baseline prostate characteristics and LUTS severity for the ITT population are provided in Table 4. The baseline prostate characteristics and LUTS severity are well matched between the ProVee and sham arms.

Table 4: Baseline Prostate Characteristics and LUTS Severity				
Characteristic	ProVee (N=150)	Sham (N=71)	Cross over (N = 64)	Total (N=221)
BMI	28.1 ± 4.4 (150)	28.5 ± 5.8 (71)	28.1 ± 4.7 (64)	28.2 ± 4.9 (221)
Prostate Volume (mL)	47.1 ± 14.0 (150)	49.5 ± 12.9 (71)	50.6 ± 12.9 (64)	47.8 ± 13.7 (221)
Prostatic Urethral Length (cm)	4. 9± 0.6 (150)	4.9 ± 0.6 (71)	4.9 ± 0.6 (64)	4.9 ± 0.6 (221)

IPSS Score	24.6 ± 5.0 (150)	23.4 ± 5.4 (71)	23.5 ± 5.3 (64)	24.2 ± 5.1 (221)
IPSS V/S Score	1.5 ± 0.5 (150)	1.5 ± 0.5 (71)	1.4 ± 0.4 (64)	1.5 ± 0.5 (221)
Qmax (mL/sec)	8.8 ± 2.0 (150)	8.8 ± 2.2 (71)	8.9 ± 2.2 (64)	8.8 ± 2.1 (221)
Post Void Residual (mL)	57.3 ± 59.4 (150)	59.3 ± 55.4 (71)	61.5 ± 57.1 (64)	57.9 ± 58.0 (221)
PSA (ng/mL)	2.3 ± 1.8 (150)	2.6 ± 2.1 (71)	2.8 ± 2.2 (64)	2.4 ± 1.9 (221)

D. Safety and Effectiveness Results

1. Safety Results

The analysis of safety was based on the ITT cohort of 221 patients (71 sham subjects and 150 ProVee treatment subjects) available for the 12-month evaluation. The key safety outcomes for this study are presented in Tables 5 to 10.

No subjects required extended post-operative urinary catheterization (>7 days from treatment).

A total of 319 AEs were reported in 126 subjects (57%) including 8 serious adverse events (SAEs). No reported SAEs were adjudicated by the Clinical Events Committee (CEC) as device or procedure related. The SAEs observed in the treatment arm are listed in Table 6.

As reported in Table 7, of the 298 AEs reported in the ProVee treatment arm, the CEC adjudicated 71 AEs in 39 subjects as probable or highly probable device and/or procedure related. Thirty-three AEs in 18 subjects were adjudicated as device related. Fifty-one AEs in 31 subjects were adjudicated as procedure related. The device and/or procedure related AEs were typically mild, transient and commonly associated with urological procedures.

One AE was classified as Clavien-Dindo Grade IIIb or higher (squamous cell carcinoma on the tongue 84 days post index procedure). This was adjudicated as unrelated to the device or procedure.

As reported in Table 7a and b, a total of 14 (19.7%) subjects in the sham arm experienced a total of 21 AEs. There were no SAEs in the sham arm and a total of 21 non-SAEs in 14 (19.7%) subjects. There were no device related AEs in the Sham arm and 6 procedure related AEs in 5 (7%) subjects. All the device/procedure related AEs were mild, transient and typically associated with urological procedures.

As reported in Table 7a and b, 32 out of the 33 device related AEs and 50 out of the 51-procedure related AEs in the ProVee treatment arm occurred within 3-

months of the procedure, with 92% of the events (65 out of 71) occurring within the first 3 weeks post procedure.

Table 7c lists the AEs in the crossover arm. The AEs observed in the crossover arm are similar to those observed in the ProVee arm.

Table 5: Summary of Adverse Events (ITT Population)				
Event Types	ProVee Arm		Sham Arm	
	Subjects n (%)	Events n	Subjects n (%)	Events n
Any adverse event	112 (74.7)	298	14 (19.7)	21
<i>Serious adverse events</i>	5 (3.3)	8	0	0
<i>Non serious adverse events</i>	107 (96.7)	290	14 (19.7)	21
Treatment Related Adverse Events				
<i>Device Related</i>	18(12.0)	33	0	0
<i>Procedure Related</i>	31(20.7)	51	5 (7.0)	8

Table 6: Summary of Serious Adverse Events (ITT Population)	
Serious Adverse Events	Events (n)
Small bowel obstruction	1
Prostate cancer	1
Transient ischemic attack	1
Cerebrovascular accident	1
Squamous cell carcinoma	1
Cellulitis	1
Pancreatic carcinoma metastatic	1
Sepsis	1

Table 7a: Summary of Device Related Adverse Events (ITT Population)						
Adverse Event	ProVee Arm 0-3 Months		Sham Arm 0-3 Months		ProVee Arm 3-12 Months	
	No. Events	No. Subjects (%)	No. Events	No. Subjects (%)	No. Event s	No. Subjects (%)
Dysuria	7	7 (4.7%)	0	0 (0.0%)	0	0 (0.0%)
Hematuria	6	6 (4.0%)	0	0 (0.0%)	1	1 (0.7%)
Micturition Urgency	4	4 (2.7%)	0	0 (0.0%)	0	0 (0.0%)
Urge Incontinence	2	2 (1.3%)	0	0 (0.0%)	0	0 (0.0%)
Bladder Spasm	2	2 (1.3%)	0	0 (0.0%)	0	0 (0.0%)
Penile Pain	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Pollakiuria	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Nocturia	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Painful ejaculation	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)

Urethral pain	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Hematospermia	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Pelvic discomfort	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Pelvic pain	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Stress urinary incontinence	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Perineal pain	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Total Related AEs	32	17 (11.3%)	0	0 (0.0%)	1	1 (0.7%)

Table 7b: Summary of Procedure Related Adverse Events (ITT Population)

Adverse Event	ProVee Arm 0-3 Months		Sham Arm 0-3 Months		ProVee Arm 3-12 Months	
	No. Events	No. Subjects (%)	No. Events	No. Subjects (%)	No. Events	No. Subjects (%)
Dysuria	9	9 (6.0%)	1	1 (1.4%)	0	0 (0.0%)
Hematuria	7	7 (4.7%)	2	2 (2.8%)	0	0 (0.0%)
Urge Incontinence	4	4 (2.7%)	0	0 (0.0%)	0	0 (0.0%)
Pollakiuria	4	4 (2.7%)	2	1 (1.4%)	0	0 (0.0%)
Penile pain	3	3 (3.3%)	0	0 (0.0%)	0	0 (0.0%)
Bladder spasm	3	3 (3.3%)	0	0 (0.0%)	0	0 (0.0%)
Micturition urgency	2	2 (1.3%)	0	0 (0.0%)	0	0 (0.0%)
Urinary incontinence	2	2 (1.3%)	0	0 (0.0%)	0	0 (0.0%)
Retrograde ejaculation	2	2 (1.3%)	0	0 (0.0%)	0	0 (0.0%)
Nocturia	1	1 (0.7%)	1	1 (1.4%)	0	0 (0.0%)
Painful ejaculation	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Urethral pain	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Penile discomfort	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Hematospermia	1	1 (0.7%)	1	1 (1.4%)	0	0 (0.0%)
Constipation	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Cystitis	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Diarrhea	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Hypertonic bladder	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Pelvic pain	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Stress urinary incontinence	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Testicular pain	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Urinary tract infection	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Muscle spasms	1	1 (0.7%)	0	0 (0.0%)	0	0 (0.0%)
Genital discomfort	0	0 (0.0%)	1	1 (1.4%)	0	0 (0.0%)

Device dislocation	0	0 (0.0%)	0	0 (0.0%)	1	1 (0.7%)
Total Related AEs	50	31 (20.7%)	8	5 (7.0%)	1	1 (0.7%)

Table 7c: Summary of Adverse Events in Crossover Arm

Adverse Event	Cross Over (N=64) 0-3 Months		Cross Over (N=64) 3-12 Months	
	No. Events	No. Subjects (%)	No. Events	No. Subjects (%)
Dysuria	14	7 (10.9%)	0	0 (0.0%)
Micturition urgency	14	7 (10.9%)	0	0 (0.0%)
Hematuria	12	6 (9.4%)	0	0 (0.0%)
Bladder spasm	6	3 (4.7%)	0	0 (0.0%)
Painful ejaculation	6	3 (4.7%)	0	0 (0.0%)
Urinary incontinence	4	2 (3.1%)	0	0 (0.0%)
Hemospermia	4	2 (3.1%)	0	0 (0.0%)
Stress urinary incontinence	4	2 (3.1%)	0	0 (0.0%)
Urge incontinence	2	1 (1.6%)	0	0 (0.0%)
Pollakiuria	2	1 (1.6%)	0	0 (0.0%)
Penile pain	2	1 (1.6%)	0	0 (0.0%)
Perineal pain	2	1 (1.6%)	0	0 (0.0%)
Total Related AEs	72	24 (37.5%)	0	0 (0%)

As reported in Table 8, the study also evaluated pain between the treatment and sham arm as a secondary safety endpoint. No difference in the pain assessment

between the two groups were observed. The pain assessment score between the two arms at baseline and discharge had a mean value of 1 (“barely noticeable”).

Table 8: FPS-R Pain Scores Post Procedure through 12-months (ITT Population)						
Group	Baseline	Discharge	1-Month	3-Months	6-Months	12-Months
ProVee Arm n	150	150	150	147	144	141
Mean (SD)	1.0 ± 1.8	1.0 ± 1.78	0.9 ± 1.77	1.1 ± 2.0	0.9 ± 1.8	0.8 ± 1.7
Sham Arm n	70	71	70	70	--	--
Mean (SD)	1.0 ± 1.8	1.1 ± 2.0	0.5 ± 1.4	0.4 ± 1.3	--	--

As reported in Table 9 and Table 10, the secondary safety endpoints also included the evaluation of sexual health at 3 months post procedure through 12-months post procedure. This was evaluated using the International Index of Erectile Function, specifically the Erectile Function domain (IIEF-5) and Male Sexual Health Questionnaire – Ejaculatory Domain (MSHQ-EjD). The sexual function was not impacted by the treatment with the ProVee System for BPH. No subject experienced sustained retrograde ejaculation or erectile dysfunction after treatment with ProVee System for BPH.

Table 9: Evaluation of Sexual Health (IIEF-5) (ITT Population)					
	Group	Baseline	3-Months	6-Months	12-Months
Treatment Arm	IIEF-5 n	149	146	139	132
	Mean (SD)	17.0 (6.5)	17.5 (6.9)	17.6 (6.9)	17.3 (6.6)
	Change in IIEF-5				
	n	N/A	146	139	132
	Mean (SD)	N/A	0.5 (5.1)	0.7 (4.7)	0.1 (5.4)
Crossover Arm	IIEF-5 n	63	61	61	49
	Mean (SD)	17.2 (7.0)	18.0 (6.9)	17.6 (7.2)	17.1 (6.5)
	Change in IIEF-5				
	n	N/A	61	61	49
	Mean (SD)	N/A	0.9 (4.0)	0.4 (5.3)	-0.1 (5.8)

Table 10: Evaluation of Sexual Health (MSHQ-EjD) (ITT Population)					
	Group	Baseline	3-Months	6-Months	12-Months
Treatment Arm	MSHQ-EjD: Ejaculatory Function				
	n	150	146	139	132
	Mean (SD)	8.9 (3.8)	10.1 (4.2)	9.9 (4.3)	9.8 (3.9)
	MSHQ-EjD Ejaculatory Bother				
	n	150	147	139	132
	Mean (SD)	2.1 (1.6)	1.4 (1.6)	1.6 (1.7)	1.6 (1.5)
Crossover Arm	MSHQ-EjD: Ejaculatory Function				
	n	63	61	61	49
	Mean (SD)	10.0 (4.3)	10.8 (4.3)	9.9 (4.3)	10.0 (4.1)
	MSHQ-EjD Ejaculatory Bother				
	n	63	61	61	49
	Mean (SD)	1.7 (1.7)	1.5 (1.6)	1.7 (1.7)	1.7 (1.6)

Six patients (4%) had the device removed during the 12-month follow up period. There were no reported removal procedure-related adverse events.

2. Effectiveness Results

The analysis of effectiveness was based on the 218 evaluable patients (148 ProVee subjects and 70 sham subjects) at the 3-month time point and 150 evaluable patients at the 12-month time point. Key effectiveness outcomes are presented in Tables 11 to 12.

Table 11 below shows a mean improvement in IPSS score at 3 months for the treatment arm compared to the sham arm in the ITT population. At 3 months, the mean improvement for the treatment met the 25% super superiority margin over the mean improvement for the sham arm. The actual sham value is -4.5. With a mean improvement in IPSS with 25% super superiority margin, the sham is -5.6. Missing data rates for primary effectiveness endpoints are $\leq 5\%$; and therefore,

the missing data do not need to be imputed in the primary endpoint analysis according to the pre-specified protocol.

Table 11: 3-Months Mean Improvement in IPSS, ProVee versus Sham (ITT Population)				
	ProVee Arm (N = 148)	Sham Arm (N = 70)	Difference (95% CI)	p-value
Mean improvement in IPSS with 25% Super Superiority Margin	-9.5±8.5	-4.5±7.0	-5.0 [-7.3, -2.7]	0.001

Table 12 shows the 12-month mean improvement in the IPSS score in the ITT population for the ProVee Treatment arm at 12 months over baseline. At 12 months, the treatment arm demonstrated greater than 30% improvement from baseline.

Table 12: 12-Months Mean Percent Improvement in IPSS, ProVee over Baseline (ITT Population)				
	ProVee Arm (N = 150)	p-value	ProVee crossover (N = 62)	p-value
Mean Percent Improvement in IPSS≥30% (SD)	-38.3± 33.6	0.002	-33.1 ± 36.0	0.002
Median	-41.8		-33.3	
95% CI	[-43.7, -32.8]		[-42.3, -24.0]	

Table 13 shows the IPSS responder rates through 12 months in the ITT population. At all the timepoints, the subjects in the treatment arm showed an IPSS improvement of $\geq 30\%$ from baseline.

Table 13: IPSS Responder Rates through 12-Months (ITT Population)				
	1-Month	3-Months	6-Months	12-Months
ProVee Arm				
n	150	150	150	150
% of subjects with an IPSS improvement of $\geq 30\%$	57%	58%	67%	61%
Sham Arm				
n	71	71		
% of subjects with an IPSS improvement of $\geq 30\%$	41%	30%		
Crossover				
n			63	50
% of subjects with an IPSS improvement of $\geq 30\%$	64 56.3%	64 64.1%	54%	34%

Table 14 shows the QoL improvement in the ProVee Treatment arm through 12-months for the ITT population. The QoL improvements in the treatment arm at

each time point was better than the sham arm. Similarly, the QoL improvement in the treatment arm at each time point was better than the baseline.

Table 14: QoL Improvement Over Time (ITT Population)					
Group	Baseline	1-Month	3-Months	6-Months	12-Months
ProVee Arm					
N	150	150	148	142	137
Mean (SD)	4.6 (1.1)	3.2 (1.6)	3.1 (1.7)	2.6 (1.6)	2.6 (1.7)
Mean Improvement from Baseline (SD)		1.4 (1.7)	1.5 (1.9)	2.0 (1.7)	2.0 (1.7)
% improvement from Baseline (SD)		28.6 (36.1)	29.8 (41.2)	41.2 (36.1)	42.1 (35.6)
Crossover Arm					
N	64	64	64	63	50
Mean (SD)	3.7 (1.6)	2.6 (1.5)	2.4 (1.3)	2.5 (1.6)	2.8 (1.5)
Mean Improvement from Baseline (SD)		1.1 (2.0)	1.3 (1.8)	1.1 (1.9)	1.0 (1.8)
% improvement from Baseline (SD)		8.5 (99.3)	22.2 (61.9)	16.9 (83.8)	13.3 (61.2)
Sham Arm					
N	71	70	70		
Mean (SD)	4.5 (1.2)	3.6 (1.4)	3.8 (1.6)		
Mean Improvement from Baseline (SD)		1.0 (1.4)	0.8 (1.4)		
% improvement from Baseline (SD)		19.8 (30.4)	15.4 (33.9)		

Tables 15a and 15b shows the peak flow rate and post void residual in the ProVee Treatment arm through 12 months for the ITT population. The subjects in the treatment arm had a clinically relevant improvement from the baseline in the uroflowmetry peak flow rate (Qmax) thorough 12-months. The post void residual analysis demonstrated improved voiding in the ProVee Treatment arm compared to baseline.

Table 15a: Peak Flow Rate (Qmax) (ITT Population)					
Group	Baseline	1-Month	3-Months	6-Months	12-Months
ProVee Arm N	150	149	148	137	136
Mean (SD)	8.8 (2.0)	14.7 (6.9)	14.6 (6.6)	14.9 (7.0)	14.2 (6.8)
Mean Improvement from Baseline (SD)	—	5.9 (6.9)	5.8 (6.6)	6.0 (6.9)	5.4 (6.7)
% improvement from Baseline (SD)	—	77.9 (107.2)	77.7 (116.9)	78.9 (103.8)	71.3 (98.9)
Crossover Arm N	64	63	64	63	48
Mean (SD)	12.7 (5.6)	15.9 (7.5)	15.8 (7.4)	17.0 (6.9)	16.0 (7.9)
Mean Improvement from Baseline (SD)		3.2 (7.8)	3.1 (7.0)	4.1 (7.1)	3.0 (7.6)
% improvement from Baseline (SD)		51.4 (141.3)	47.8 (151.2)	53.0 (103.7)	44.8 (129.4)
Sham Arm N	71	70	70		
Mean (SD)	8.8 (2.2)	11.6 (5.1)	12.4 (5.5)		
Mean Improvement from Baseline (SD)	—	2.9 (5.1)	3.6 (5.1)		
% improvement from Baseline (SD)	—	42.3 (89.3)	46.6 (68.4)		

Table 15b: Post Void Residual Volume (PVR) (ITT Population)					
Group	Baseline	1-Month	3-Months	6-Months	12-Months
ProVee Arm N	150	148	147	137	135
Mean (SD)	57.3 (59.4)	40.9 (52.6)	44.2 (68.9)	50.4 (65.1)	46.1 (57.3)
Mean Improvement from Baseline (SD)	—	17.0 (53.4)	13.9 (68.3)	8.3 (64.1)	10.0 (54.1)
% improvement from Baseline (SD)	—	22.6 (400.3)	3.0 (148.5)	56.8 (464.9)	7.8 (215.8)
Crossover Arm N	64	63	63	63	48
Mean (SD)	52.6 (49.3)	42.9 (57.1)	39.6 (50.2)	48.7 (60.7)	49.1 (61.9)
Mean Improvement from Baseline (SD)		9.8 (54.2)	13.6 (36.6)	4.4 (55.6)	1.8 (48.1)
% improvement from Baseline (SD)		9.7 (114.7)	37.8 (69.2)	2.1 (144.4)	23.1 (160.3)
Sham Arm N	71	70	70		
Mean (SD)	59.3 (55.4)	55.6 (72.9)	57.0 (67.1)		
Mean Improvement from Baseline (SD)	—	4.0 (56.6)	2.5 (62.4)		
% improvement from Baseline (SD)	—	23.9 (244.8)	52.1 (215.2)		

The study also evaluated instances of secondary reintervention using an alternative surgical LUTS therapy and standard pharmacological agents for LUTS therapy. A total of 5 subjects were prescribed pharmacological agents for BPH LUTS therapy for the index procedure through the 12-months. There were no secondary re-interventions using alternative surgical devices. The reinterventions using drugs were adjudicated as device failures in the ITT population.

3. Subgroup Analysis

The following baseline characteristics were evaluated for potential association with safety and effectiveness outcomes: age and baseline IPSS.

Twenty-eight subjects had a baseline IPSS <20, and 122 subjects had a baseline IPSS $\geq$ 20. With respect to IPSS change at 3 months, the subgroup of IPSS <20 received less improvement for both treatment arms than the subgroup of IPSS $\geq$ 20. For the percent IPSS change at 12 months endpoint, the mean percent change for the IPSS <20 subgroup is $-29.5\% \pm 34.0\%$, and the mean percent change for the IPSS $\geq$ 20 subgroup is $-40.3\% \pm 33.3\%$. Both subgroups experienced improvements on percent IPSS change at 12 months.

Regarding subgroup results by age, 80 subjects have a baseline age <65 and 70 subjects have a baseline age $\geq$ 65. For the IPSS change at 3 months endpoint, the older subgroup received less improvement than the younger subgroup for both treatment arms. For the second the percent IPSS change at 12 months endpoint, the mean percent change for the older subgroup is $-32.9\% \pm 30.4\%$ and the mean percent change for the younger subgroup is $-42.9\% \pm 35.6\%$. Both subgroups experienced improvements on percent IPSS change at 12 months as compared to the performance goal of -30%.

4. Pediatric Extrapolation

In this premarket application, existing clinical data was not leveraged to support approval of a pediatric patient population.

3. **ProVIDE II Bridging Study**

The applicant performed a feasibility clinical study to establish reasonable assurance of safety and effectiveness of the ProVee System for BPH in the treatment of obstructive lower urinary tract symptoms secondary to benign prostatic hyperplasia (BPH) in the US

and Ireland under IDE# G230354. Data from this clinical study were the basis for the PMA decision. A summary of the clinical study is presented below.

A. Study Design

Patients were implanted with the ProVee Expander between March 6, 2024, and September 6, 2024. The database for this PMA reflected data collected through March 4, 2025, and included 40 patients. There were 8 investigational sites.

The study was a prospective, multi-center, non-randomized bridging study. All subjects were followed up through 60 months.

The study did not have a control group.

1. Clinical Inclusion and Exclusion Criteria

Enrollment in the ProVIDE II Bridging study was limited to the patients who met the following inclusion criteria:

- 1) Males ≥ 45 years of age
- 2) IPSS of ≥ 13 , IPSS V/S ≥ 1 at baseline assessment
- 3) Prostate volume of ≥ 30 cc and ≤ 80 cc
- 4) Prostatic urethral L2 lengths ≥ 3.75 cm by transrectal ultrasound (TRUS)
- 5) Failed, intolerant, or subject choice to not take a medication regimen for the treatment of lower urinary tract symptoms (LUTS)

Patients were not permitted to enroll in the ProVIDE II Bridging study if they met any of the following exclusion criteria:

- 1) Void volume ≤ 125 ml; Qmax ≥ 12 ml/s; PVR > 250 ml
- 2) Obstructive median lobe defined by EITHER >10 mm protrusion on sagittal mid-prostate plane as measured by TRUS OR an obstructive median lobe seen on cystoscopy e.g., ‘ball valve’
- 3) High bladder neck, with the absence of lateral lobe encroachment indicating a high likelihood of primary bladder neck obstruction
- 4) Anatomy that would prevent the apices of the ProVee Expander from engaging with the lateral lobes e.g., high degree of bladder neck angulation such that the anterior bladder neck is not visible
- 5) Acute Urinary retention
- 6) Known immunosuppression
- 7) History of or suspected prostate or bladder cancer
- 8) Baseline prostate specific antigen (PSA) > 10 ng/mL or confirmed or suspected prostate cancer (Subjects with a PSA level above 2.5 ng/mL, or age specific, or local reference ranges should have prostate cancer excluded to the Investigator’s satisfaction, including a standard of care (SOC) biopsy if indicated)
- 9) Recent urinary tract stones OR widespread calcifications on the prostatic urethral wall, within 3 months of index procedure

- 10) A history of prostatitis within the last two years
- 11) Active or history of epididymitis within the past 3 months
- 12) Neurogenic bladder and/or sphincter abnormalities due to Parkinson's disease, multiple sclerosis, cerebral vascular accident, diabetes
- 13) History of urinary retention within 12 months of baseline assessment
- 14) Requiring self-catheterization to void
- 15) An active urinary tract infection (UTI) at time of index procedure
- 16) Gross hematuria within 3 months of index procedure
- 17) Subjects with known allergy to nickel or titanium
- 18) Life expectancy estimated to be less than 60 months
- 19) Taking androgens, unless eugonadal state for at least 3 months or greater with a stable dosage for at least 2 months as documented by the Investigator
- 20) Use of 5-alpha-reductase inhibitors (e.g., dutasteride, finasteride) within 6 months of baseline assessment
- 21) Use of Phenylephrine / Pseudoephedrine within 24 hours of baseline assessment
- 22) Use of alpha-blockers (e.g., Terazosin, Doxazosin, Alfuzosin, Tamsulosin) within 2 weeks of baseline assessment
- 23) Use of estrogen or drug-producing androgen suppression (e.g. gonadotropin-releasing hormonal analogues) within 1 year of baseline assessment
- 24) Use of antihistamines, anticonvulsants, and antispasmodics within 1 week of baseline assessment unless there is documented evidence that the patient was on the same drug dose for at least 6 months with a stable voiding pattern (the drug dose should not be altered or discontinued for entrance into or throughout the study)
- 25) Use of anticholinergics or cholinergic medication within 2 weeks of baseline assessment
- 26) Use of beta-blockers where the dose is not stable. (Stable dose is defined as having the same medication and dose in the last 6 months)
- 27) Use of Phosphodiesterase-5 Enzyme Inhibitors in doses for BPH within 2 weeks of baseline assessment
- 28) Current treatment with anticoagulants (e.g., coumadin or enoxaparin) or antiplatelet medications other than aspirin (e.g., clopidogrel, or alternative and ASA). Patient unable to stop taking anticoagulants and/or antiplatelets within 3 days prior to the procedure or coumadin at least 5 days prior to the procedure
Low dose aspirin $\leq 100\text{mg/day}$ not prohibited
- 29) Future fertility concerns
- 30) Previous prostate surgery, balloon dilatation, stent implantation, laser prostatectomy, hyperthermia, or any other invasive treatment to the prostate; including penile implants
- 31) Previous pelvic irradiation or radical pelvic surgery
- 32) Previous rectal surgery (other than hemorrhoidectomy) or known history of rectal disease
- 33) Urethral strictures, bladder neck contracture, or other potentially confounding bladder pathology
- 34) Urethral pathologies that may prevent insertion of Delivery System

- 35) Uncontrolled diabetes mellitus including Hgb A1C >8%
- 36) Overactive bladder (OAB) requiring treatment by OAB medication
- 37) Urinary incontinence
- 38) Patients taking tri-cyclic antidepressants
- 39) Compromised renal function (i.e., serum creatinine >1.8 mg/dl or upper tract disease)
- 40) Hepatic disorder, bleeding disorders or metabolic impairment that might confound the results of the study or have a risk to subject per investigator's opinion
- 41) Any major comorbidities or presence of unstable conditions, e.g., uncontrolled HTN, NYHA Class III or IV, cardiac arrhythmias that are not controlled by medication/medical device, myocardial infarction within the past 6 months, COPD with FEV1 <50, renal illness that might prevent study completion or would confound study results
- 42) Vulnerable populations such as incarcerated or institutionalized adults, inmates, patients with physical, psychological (such as developmentally delayed adults), or medical impairment that might, in the judgment of the Investigator, prevent study completion or comprehension, or may confound study results (including patient questionnaires)
- 43) History or current medical condition that would result in an unacceptable patient risk if that subject were to be included in the study
- 44) Any subject that is currently enrolled in another ongoing investigational study

2. Follow-up Schedule

All subjects were scheduled to return for follow-up examinations at 1 month and 3 months postoperatively.

Preoperatively, the following assessments were completed for during study screening: physical exam and measuring vital signs, International Prostate Symptom Score (IPSS) and Quality of Life (QoL) questionnaires, the abridged International Index of Erectile Function -5 (IIEF-5) and Male Sexual Health Questionnaire – Ejaculatory Dysfunction (MSHQ-EjD), Face Pain Scale-Revised (FPS-R), Uroflowmetry, Post Void Residual Volume (PVR), Prostate-specific antigen (PSA), Complete blood count (CBC), Renal Function, Trans-rectal ultrasound (TRUS), cystoscopy and concomitant medications.

Postoperatively, the assessments completed included the International Prostate Symptom Score (IPSS) and Quality of Life (QoL) questionnaires, the abridged International Index of Erectile Function -5 (IIEF-5) and Male Sexual Health Questionnaire – Ejaculatory Dysfunction (MSHQ-EjD), Face Pain Scale-Revised (FPS-R), Uroflowmetry, Post Void Residual Volume (PVR), and concomitant medications.

Adverse events and complications were recorded at all visits.

The key timepoints are shown below in the tables summarizing safety and effectiveness.

3. Clinical Endpoints

With regards to safety, the primary safety endpoints included the following:

- the rate of device or procedure related serious adverse events were evaluated through 3-months.
- the rate of extended post-operative urinary cauterization (>7 days from treatment) for inability to void among patients treated with the ProVee System for BPH.

The secondary safety endpoints included the following:

- Rate of device or procedure related adverse events at all time points.
- Comparison pain at discharge to 1, 3-month follow-up visits per Faces Pain Scale-Revised Questionnaire (FPS-R).
- Change in sexual health characterized by change in the International Index of Erectile Function, specifically the Erectile Function domain (IIEF-5) and Male Sexual Health Questionnaire- Ejaculatory Domain (MSHQ-EjD) at 3-month post treatment.
- Proportion of subjects with adverse events classified as Clavien-Dindo Grade IIIb or higher or any event resulting in persistent disability evidenced through 3-month follow-up visit.
- Assessment of retrieval procedure related adverse events through 3 months related to implant removal.

With regards to effectiveness, the primary endpoint would meet if the observed technical success for deploying the expander in the location intended by the user is greater than 95%.

The secondary effectiveness endpoints included the following:

- Percent of subjects who experience at least a 30% improvement in IPSS from their baseline pre-treatment score at 3-month post treatment.
- Percent change in IPSS in the treatment arm compared to baseline at all timepoints post treatment through 3-months.
- Mean improvement from baseline in QoL questionnaire at 3-month follow-up visits.
- Mean improvement from baseline in uroflowmetry measures of peak flow rate (Qmax) as measured at all timepoints.
- Mean improvement from baseline in PVR as measured at all timepoints through 3-months.
- Post-procedure incidence of secondary reintervention using alternate surgical LUTS therapy.
- Post-procedure incidence of secondary reintervention using prescribed pharmacological agents for BPH LUTS therapy through 3-months.

With regard to success/fail criteria, the study was considered a success if the primary effectiveness endpoint was met, and the device had an acceptable safety profile.

B. Accountability of PMA Cohort

At the time of database lock, of 40 patients enrolled in the PMA study, 100% (40) are available for analysis at the completion of the study, the 3-month post-operative visit. Patients were considered enrolled after signing the informed consent form.

Eighty-eight subjects were assessed for eligibility for the bridging study. Forty subjects were enrolled in the study. No subject exited the study before the 3-month follow-up. No subjects were lost to follow up.

The subject disposition for the non-randomized cohort through 3 months is provided in Figure 5:

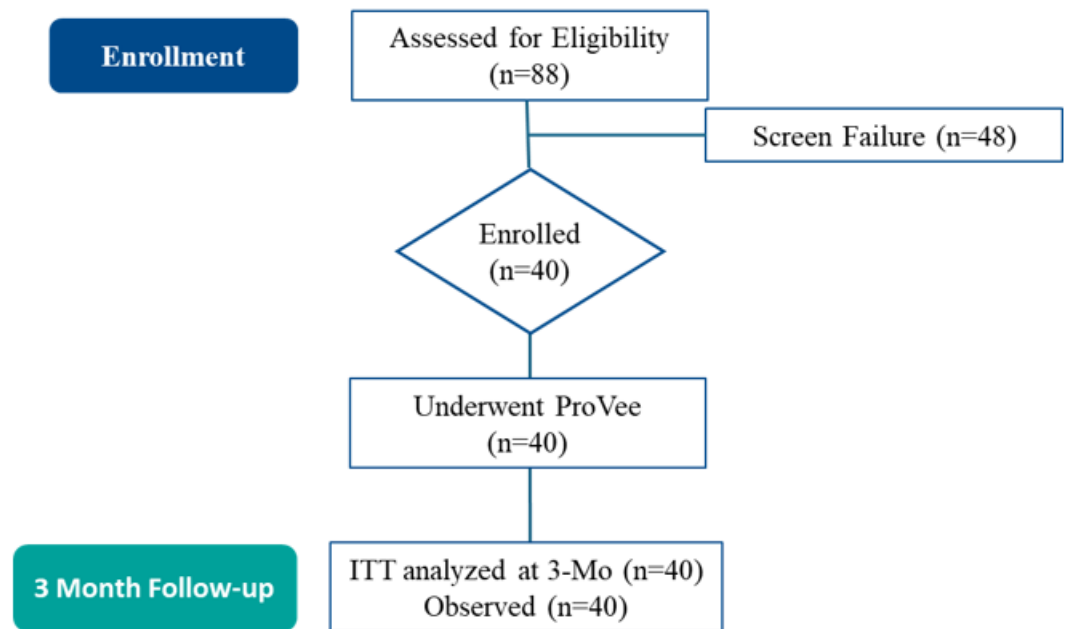


Figure 5: Subject Accountability Flow Chart

The analysis sets were pre-specified in the protocol as follows:

Intent-to-Treat cohort (ITT): All subjects who start the treatment procedure are included in the ITT Cohort. Where there is an attempt to treat, the subject will be considered enrolled in the ITT cohort, regardless of the procedural outcome.

Per Protocol Cohort (PP): The Per-Protocol Cohort is defined as the group of subjects who complete the treatment procedure and who complete their 3-month follow-up visit without any protocol violations.

Safety Cohort: The safety population is the same as the ITT and Primary Analysis population

Cohort for Procedure Success Endpoints: Procedure success related endpoints will be analyzed using the safety/ITT cohort.

Cohort for primary and secondary effectiveness endpoints: Analyses for all primary and secondary Effectiveness endpoints will be repeated for the Safety/ITT Cohort, and for the Per-Protocol Cohort. Study Success was based on the Safety/ITT Cohort.

Cohort for safety endpoints: Analyses for all safety-related endpoints will be performed using the Safety/ITT Cohort.

C. Study Population Demographics and Baseline Parameters

The demographics of the study population are typical for a BPH study performed in the US.

The demographic information for the subjects is provided in Table 16 and 17.

Table 16: Study Demographics (ITT Population)	
Age Mean (SD)	64.0 (8.7)
Race	
American Indian or Alaska Native	0.0% (0/40)
Asian	0.0% (0/40)
Black or African American	2.5% (1/40)
Hawaiian or Pacific Islander	0.0% (0/40)
White	95.0% (38/40)
Multi-Racial	0.0% (0/40)
Other	2.5% (1/40)
Not Permitted	0.0% (0/40)
Ethnicity	
Hispanic or Latino	12.5% (5/40)
Not Hispanic or Latino	85.0% (34/40)
Not permitted	2.5% (1/40)
BMI Mean (SD)	28.3 (3.9)

The baseline prostate characteristics and LUTS severity are provided in the table below:

Table 17: Baseline Prostatic Characteristics and LUTS Severity (ITT Population)	
Characteristics	N = 40 Mean (SD)
Prostatic Volume (mL)	47.8 (13.6)
Prostatic Urethral Length (cm)	4.8 (0.6)
IPSS Score	23.5 (5.4)
IPSS V/S Score	1.5 (0.3)
Qmax (mL/sec)	8.1 (2.4)
Post Void Residual (mL)	72.7 (56.8)
PSA (ng/mL)	2.9 (2.0)

D. Safety and Effectiveness Results

1. Safety Results

The analysis of safety was based on the ITT cohort of 40 patients available for the 3-month evaluation. The key safety outcomes for this study are presented below in tables 18 to 22.

No subjects required extended post-operative urinary catheterization (>7 days post treatment).

As reported in Table 18 and Tables 19a and 19b, a total of 30 AEs were reported in 16 subjects (40%). All study AEs were prospectively collected and adjudicated by CEC. There was no SAE through 3-months post index procedure. Of the AEs reported, 1 AEs (in 1 subject) was adjudicated by CEC as device related. 6 AEs (in 4 subjects) were adjudicated by CEC as procedure related.

A total of 30 AEs (in 16 subjects) were adjudicated as non-SAEs. The AEs reported were typically mild, transient, and commonly associated with urological procedures. No subjects were classified as Clavien-Dindo Grade IIIb or higher.

Table 18: Adverse Events in the ITT Population		
Event Types	Subjects n (%)	Events n
Any adverse event	16 (40.0)	30
<i>Serious adverse events</i>	0 (0)	0
<i>Non serious adverse events</i>	16 (40.0)	30

Treatment Related Adverse Events		
<i>Device Related</i>	1 (2.5)	1
<i>Procedure Related</i>	4 (10.0)	6

Table 19a: Device Related Adverse Events in the ITT Population		
Adverse Event	ProVee (N=40)	
	No. Events	No. Subjects (%)
Hematuria	1	1 (2.5%)
Total Related AEs	1	1 (2.5%)

Table 19b: Procedure Related Adverse Events in the ITT Population		
Adverse Event	ProVee (N=40)	
	No. Events	No. Subjects (%)
Urinary tract infection	2	2 (5.0%)
Micturition urgency	1	1 (2.5%)
Pollakiuria	1	1 (2.5%)
Hematuria	1	1 (2.5%)
Nocturia	1	1 (2.5%)
Total Related AEs	6	4 (10.0%)

As reported in Table 20, the study also evaluated patient pain following index procedure at 1 and 3-months follow-up visits. The pain assessment at the follow up visits had a mean value of 0.4 at 1 month and 0.6 at 3 months (no pain at all/ barely noticeable).

Table 20: FPS-R Pain Score Post Procedure through 3-months (ITT Population)			
	Discharge	1-Month	3-Months
n	40	40	40
Mean (SD)	2.5± 2.1	0.4 ± 0.8	0.6 ± 1.2

As reported in Table 21 and Table 22, the secondary safety endpoints also included the evaluation of sexual health at 3-months post procedure. This was evaluated using the International Index of Erectile Function, specifically the Erectile Function domain (IIEF-5) and Male Sexual Health Questionnaire – Ejaculatory Domain (MSHQ-EjD). The sexual function was not impacted by the treatment with the ProVee System for BPH. No subject experienced sustained

retrograde ejaculation or erectile dysfunction after treatment with ProVee System for BPH.

Table 21: Evaluation of Sexual Health (IIEF-5) (ITT Population)		
	Baseline	3-Months
IIEF-5		
n	40	40
Mean (SD)	16.2 (6.3)	17.5 (6.3)
Change in IIEF-5		
n	N/A	40
Mean (SD)	N/A	1.2 (3.9)

Table 22: Evaluation of sexual health (MSHQ-EjD) (ITT Population)		
	Baseline	3-Months
MSHQ-EjD: Ejaculatory Function		
n	40	40
Mean (SD)	8.7 (4.1)	9.8 (4.1)
MSHQ-EjD Ejaculatory Bother		
n	40	40
Mean (SD)	2.2 (1.6)	1.5 (1.6)

There were no device removals in the bridging study, and accordingly, no reported removal procedure-related adverse events.

2. Effectiveness Results

The analysis of effectiveness was based on the 40 evaluable patients) at the 3-month time point. Key effectiveness outcomes are presented in Tables 23 to 27.

Table 23 below shows 100% technical success in the ITT population for the deployment of the expander in the location intended by the user.

Table 23: Primary Efficacy Endpoint – Technical Success (ITT Population)	
	Rate
Technical Success	100% (40/40)

As shown in Table 24, the mean improvement from baseline in IPSS (total) was 44% and 46% for the 1-month and 3-month follow ups respectively.

Table 24: Symptomatic Improvement Over Time (ITT Population)			
	Baseline	1-Month	3-Months
IPSS (Total)			
n	40	40	40
Mean (SD)	23.5 (5.4)	12.6 (6.6)	12.3 (6.0)
Mean Improvement from Baseline (SD)		10.9 (8.3)	11.2 (7.5)
% Improvement from Baseline		43.8 (36.2)	45.7 (27.9)

As shown in Table 25, the study also evaluated QoL improvements through 3-months showed greater than 2 points improvement in the quality of life at 1-month and 3-months.

Table 25: Symptomatic improvement over time (QoL) (ITT Population)			
	Baseline	1-Month	3-Months
QoL			
N	40	40	40
Mean (SD)	4.6 (1.0)	2.4 (1.5)	2.5 (1.7)
Mean Improvement from Baseline (SD)		2.2 (1.6)	2.1 (1.6)
% Improvement from Baseline		47.5 (34.4)	45.4 (36.6)

As shown in Table 26 and 27, functional improvement over time was assessed by Uroflowmetry (Qmax) and Peak Flow rate (PVR) through 3-months. Treatment subjects sustained clinically relevant improvements from baseline in Qmax and PVR.

Table 26: Functional improvement over time (Qmax) (ITT Population)			
	Baseline	1-Month	3-Months
Qmax (mL/sec)			
N	40	39	38
Mean (SD)	8.1 (2.4)	14.5 (5.3)	15.3 (6.0)
Mean Improvement from Baseline (SD)		6.3 (4.7)	7.1 (5.9)
% improvement from Baseline		83.3 (64.5)	102.5 (100.6)

Table 27: Functional improvement over time (PVR) (ITT Population)			
PVR (mL)	40	39	37
Mean (SD)	72.7 (56.8)	43.3 (59.0)	45.7 (45.5)
Mean Improvement from Baseline (SD)		27.6 (62.3)	26.6 (61.5)
% Improvement from Baseline		25.6 (117.3)	53.8 (448.2)

There were no post-procedure incidence of secondary intervention using alternative surgical LUTS therapy or prescribed pharmacological agents for BPH LUTS therapy.

3. Subgroup Analyses

No subgroup analyses were performed for the ProVIDE II Bridging study results.

4. Pediatric Extrapolation

In this premarket application, existing clinical data was not leveraged to support approval of a pediatric patient population.

XI. FINANCIAL DISCLOSURE

The Financial Disclosure by Clinical Investigators regulation (21 CFR 54) requires applicants who submit a marketing application to include certain information concerning the compensation to, and financial interests and arrangement of, any clinical investigator conducting clinical studies covered by the regulation. The ProVIDE pivotal clinical study included 24 investigators (including sub-investigators) of which none were full-time or part-time employees of the sponsor and two had disclosable financial interests/arrangements as defined in 21 CFR 54.2(a), (b), (c), and (f) and described below:

- Compensation to the investigator for conducting the study where the value could be influenced by the outcome of the study: 0
- Significant payment of other sorts: 2
- Proprietary interest in the product tested held by the investigator: 0
- Significant equity interest held by investigator in sponsor of covered study: 0

The ProVIDE II Bridging pivotal clinical study included 13 investigators (including sub-investigators) of which none were full-time or part-time employees of the sponsor and two had disclosable financial interests/arrangements as defined in 21 CFR 54.2(a), (b), (c), and (f) and described below:

- Compensation to the investigator for conducting the study where the value could be influenced by the outcome of the study: 0
- Significant payment of other sorts: 2
- Proprietary interest in the product tested held by the investigator: 0
- Significant equity interest held by investigator in sponsor of covered study: 0

The applicant has adequately disclosed the financial interest/arrangements with clinical investigators. Statistical analyses were conducted by FDA to determine whether the financial interests/arrangements had any impact on the clinical study outcome. The information provided does not raise any questions about the reliability of the data.

XII. PANEL MEETING RECOMMENDATION AND FDA'S POST-PANEL ACTION

In accordance with the provisions of section 515(c)(3) of the act as amended by the Safe Medical Devices Act of 1990, this PMA was not referred to the Gastroenterology/Urology Panel, an FDA advisory committee, for review and recommendation because the information in the PMA substantially duplicates information previously reviewed by this panel.

XIII. CONCLUSIONS DRAWN FROM PRECLINICAL AND CLINICAL STUDIES

A. Effectiveness Conclusions

The results from the ProVIDE pivotal study demonstrate that the ProVee System for BPH provides a clinically meaningful reduction in BPH symptoms compared to sham and symptom improvement from baseline to 12 months.

The mean improvement in the IPSS score at 3-months post implant in the treatment group is more than 25% greater than the mean improvement in the sham arm. The mean percent improvement in the IPSS score at 12 months post implant in the treatment group was >30% over baseline. The clinical study also showed improvement in the quality of life, Qmax, improvement in PVR and no significant change in sexual health.

B. Safety Conclusions

The risks of the device are based on nonclinical laboratory data and animal studies as well as data collected in the clinical studies conducted to support PMA approval and described above.

In the pivotal study, there were no procedure or device related serious adverse events through 12-months post-implant. There was a total of 8 SAEs in the study unrelated to the procedure or treatment. There were 71 device and/or procedure related AEs in 39 subjects, 33 device related AEs in 18 subjects and 51 procedure related AEs in 31 subjects. The most common adverse events included dysuria, hematuria, and micturition urgency.

In the bridging study, there were no procedure or device related serious adverse events through 12-months post-implant. There was 1 device related AE (hematuria) in 1 subject and 6 procedure related AE (nocturia, urgent urination, frequent urination, urinary tract infection, urinary infection and hematuria) in 4 subjects. The adverse

events observed in these clinical studies are mild, transient and commonly associated with urological procedures.

C. Benefit-Risk Determination

The probable benefits of the device are based on the data collected from clinical studies conducted to support PMA approval as described above. The results from the pivotal clinical study show that the ProVee System for BPH provides a clinically meaningful improvement in symptomatic improvement of LUTS secondary to BPH. In this study, the patients implanted with the ProVee Expander experienced a mean improvement in IPSS from baseline greater than 30% (38.3%) and improvement over sham greater than 25% at 12 months and 3 months respectively. The results from the bridging study show that the Gen II Delivery System can accurately and safely deploy the expander in subjects with symptomatic urinary obstruction secondary to BPH.

The probable risks of the device are also based on the data collected from clinical studies conducted to support PMA approval as described above. The safety profile of the device has been characterized through 12 months post-procedure. There were no device or procedure related SAEs. Device and/or procedure related AEs were mild, transient and commonly associated with urological procedures.

Given that the prior device of this type was removed from the market by its manufacturer due to long-term safety concerns, a post-approval study following the pivotal study and bridging study patients to 5 years post implant is required to obtain additional information about long-term safety and effectiveness.

1. Patient Perspective

Patient perspectives considered during the review included patient-reported outcomes (PRO) including International Prostate Symptom Score (IPSS), Male Sexual Health Questionnaire- Ejaculatory Domain (MSHQ-EjD), International Index of Erectile Function (IIEF-5) and Face Pain Scale – Revised (FPS-R) in the clinical trials.

In conclusion, given the available information above, the data support that for treatment of obstructive lower urinary tract symptoms secondary to BPH in men with prostatic urethral lengths greater than or equal to 3.75 cm in length and prostatic volumes between 30 cc and 80 cc, the probable benefits outweigh the probable risks.

D. Overall Conclusions

The data in this application support the reasonable assurance of safety and effectiveness of this device when used in accordance with the indications for use.

The results from the non-clinical and clinical evaluations support that the patient population for whom the device is intended can be expected to achieve clinically significant results.

The safety and effectiveness of the ProVee System for BPH for the treatment of obstructive lower urinary tract symptoms secondary to BPH in men with prostatic urethral lengths greater than or equal to 3.75 cm in length and prostatic volumes between 30 cc and 80 cc, was based on a pivotal clinical study and bridging study indicating that the benefit of the ProVee System for BPH outweighs the associated risks. Based on the clinical study results, it is reasonable to conclude that the clinical benefits of the use of the ProVee System for BPH for the treatment of obstructive lower urinary tract symptoms secondary to BPH, outweigh the risks.

XIV. CDRH DECISION

CDRH issued an approval order on December 9, 2025. The final clinical conditions of approval cited in the approval order are described below.

1. 60-month follow-up of the ProVIDE Pivotal Study

This study was initiated prior to device approval and is a prospective, multi-center, double-blind, 2:1 randomized, sham controlled clinical study. It was conducted at 17 sites and enrolled 221 subjects. One hundred and fifty (150) subjects were implanted in the treatment arm, and 71 subjects were exposed to a sham control. The 12-month outcomes from this study were used to support PMA approval. The 60-month follow-up data from this study will be used to evaluate the continued safety and effectiveness of the ProVee Expander System.

No greater than 20% of the patients enrolled in the study (i.e., patients enrolled in the treatment arm and patients crossed over from the sham to treatment arm) will be lost to follow up through 60-months.

ProVee must collect and report the following clinical outcomes annually through 60-months:

Effectiveness

- Percent of subjects who experienced at least a 30% improvement in International Prostate Symptom Score (IPSS) from baseline.
- Percent change in International Prostate Symptom Score (IPSS) in the treatment arm compared to baseline.
- Mean improvement from baseline in quality of life (QoL) questionnaire.
- Mean improvement from baseline uroflowmetry measures of peak flow rate (Qmax).
- Mean improvement from baseline in post void residual (PVR) volume.

- Post-procedure incidence of secondary reintervention using alternate surgical LUTS therapy.
- Post-procedure incidence of secondary reintervention using standard pharmacological agents for LUTS therapy.
- Post-procedure device removal rate and summary of the reasons for removal (including the number and rate for each reason).

Safety

- Rate of device or procedure related adverse events.
- Change in sexual health characterized by change in International Index of Erectile Function, specifically the Erectile Function domain (IIEF-5) and Male Sexual Health Questionnaire – Ejaculatory Domain (MSHQ-EjD).
- Proportion of subjects with adverse events classified as Clavien-Dindo Grade IIIb or higher or any event resulting in persistent disability.
- Assessment of retrieval procedure related adverse events related to implant removal.

Data must be summarized descriptively, without statistical testing. Patient and physician labeling must be updated annually via a PMA supplement to include the effectiveness and safety outcomes listed above after the patients enrolled in this study complete each annual year of follow up.

2. 60-month follow-up of the ProVIDE II Bridging Study

This study was initiated prior to device approval and is a prospective, multi-center, non-randomized bridging study. It was conducted at 8 sites and enrolled 40 subjects. Forty (40) subjects were implanted in the study. The 3-month outcomes from the study were used to support PMA approval. The 60-month follow-up data from this study will be used to evaluate the continued safety and effectiveness of the ProVee System for BPH.

No greater than 20% of the patients enrolled in the study will be lost to follow up through 60-months.

ProVee must collect and report the following clinical outcomes annually through 60-months:

Effectiveness

- Percent of subjects who experienced at least a 30% improvement in International Prostate Symptom Score (IPSS) from baseline from their baseline.
- Percent change in IPSS compared to baseline.
- Mean improvement from baseline in quality of life (QoL) questionnaire.
- Mean improvement from baseline uroflowmetry measures of peak flow rate (Qmax).
- Mean improvement from baseline in post void residual (PVR) volume.
- Post-procedure incidence of secondary reintervention using an alternative surgical lower urinary tract symptoms (LUTS) therapy.
- Post-procedure incidence of secondary reintervention using standard pharmacological agents for LUTS therapy.
- Post procedure device removal rate and summary of the reasons for removal (including the number and rate for each reason).

Safety

- Rate of device or procedure related adverse events.
- Change in sexual health characterized by change in International Index of Erectile Function, specifically the Erectile Function domain (IIEF-5) and Male Sexual Health Questionnaire – Ejaculatory Domain (MSHQ-EjD).
- Proportion of subjects with adverse events classified as Clavien-Dindo Grade IIIb or higher or any event resulting in persistent disability.
- Assessment of retrieval procedure related adverse events related to implant removal.

Data must be summarized descriptively, without statistical testing. Patient and physician labeling must be updated annually via a PMA supplement to include the effectiveness and safety outcomes listed above after the patients enrolled in this study complete each annual year of follow up.

The PAS Progress Reports must be submitted every six (6) months for the first year and annually thereafter.

The applicant's manufacturing facilities have been inspected and found to be in compliance with the device Quality System (QS) regulation (21 CFR 820).

XV. APPROVAL SPECIFICATIONS

Directions for use: See device labeling.

Hazards to Health from Use of the Device: See Indications, Contraindications, Warnings, Precautions, and Adverse Events in the device labeling.

Post-approval Requirements and Restrictions: See approval order.

XVI. REFERENCES

- (1) Sandhu JS, Bixler BR, Dahm P, et al. Management of lower urinary tract symptoms attributed to benign prostatic hyperplasia (BPH): AUA Guideline amendment 2023. J Urol. 2023;10.1097/JU.0000000000003698.
<https://doi.org/10.1097/JU.0000000000003698>