# Mainstay Medical Announces Headline Results from ReActiv8-B Clinical Study

- *Responder rates at 120 days for treatment and active control groups were 56% vs. 47%; statistically significant difference on primary endpoint not achieved*
- *Responder rates in both groups rose steadily from 120 days to one year; preliminary data for the 116 patients that have completed the one-year assessment, including those from the cross-over group, show:*
  - *72% of patients achieved a 30% or greater reduction from baseline in low back pain VAS without increase in pain medications*
  - *60% of patients achieved a 50% or greater reduction from baseline in low back pain VAS without increase in pain medications*
  - *44% of the 50 patients that have completed the one-year assessment and were on opioids at baseline had voluntarily eliminated (28%) or significantly reduced (16%) their use of opioids*
- *Incidence and type of adverse events (AEs) similar to AEs in clinical trials reported for other neurostimulation devices*

****Conference call and webcast to further discuss results to be held today at 08:00 GMT / 09:00 CET. Details below****

DUBLIN--(BUSINESS WIRE)-- Regulatory News:

Mainstay Medical International plc (“Mainstay” or the “Company”, Euronext Paris: MSTY.PA and Euronext Dublin: MSTY.IE), a medical device company focused on commercializing ReActiv8®, an implantable restorative neurostimulation system designed to treat an underlying cause of disabling Chronic Low Back Pain, today announces headline results from its ReActiv8-B study.

The ReActiv8 B clinical study is an international, multi-center, prospective, randomized, active-controlled, blinded trial with one-way cross-over, conducted under an Investigational Device Exemption (IDE) from the U.S. Food & Drug Administration (FDA). A total of 204 patients were implanted with ReActiv8 at leading study centers in the U.S., Europe and Australia and randomized 1:1 to therapy or control 14 days after implant. In the treatment group, the ReActiv8 pulse generator was programmed to deliver electrical stimulation expected to elicit contractions of the multifidus muscle. In the control group, the ReActiv8 device was programmed to provide a low level of electrical stimulation. Following assessment of the primary endpoint at 120 days, patients in the control group crossed-over to receive levels of electrical stimulation as in the treatment group.

The patients in the study had an average age of 46, and an average duration of chronic low back pain of 14 years. This patient population has tried many other treatment alternatives with limited success, and 80% of the patients were on pain medication at baseline.

**Efficacy Outcomes**

The primary efficacy endpoint of the study was a comparison of responder rates between the treatment and control groups as measured on the visual analog scale (VAS) of pain, with responders defined as having a 30% or greater improvement on this measure between baseline and 120 days after randomization, without any increase in pain medication taken in the two weeks prior to the primary endpoint assessment visit. In the treatment group the responder rate at 120 days was 56%, compared to 47% in the control group, resulting in a difference that is not statistically significant.

ReActiv8-B is the first ever active sham-controlled clinical trial of an implantable neurostimulator for chronic low back pain. The literature from other sham or placebo-controlled studies, involving drugs, device implants or other interventions, suggested that a responder rate of 20% or more could have been expected in the control group. The study design assumed a 25% responder rate in the control group.

“Our study involved surgically implanting a device into patients who had not previously received surgical implants, and further required the patient to activate the device twice daily to administer the therapy,” said Jason Hannon, Chief Executive Officer of Mainstay. “The study design underestimated the amount and duration of the sham effect under these conditions.

“The overall results of this study, however, are a solid endorsement of the efficacy and safety of ReActiv8,” continued Mr. Hannon. “We saw very high responder rates in the patients in the treatment group that have reached one year of therapy, and substantial improvement in the patients that were crossed-over to treatment from the control group after 120 days. We believe these long-term results represent the most important clinical factors to physicians, and we plan to leverage these results in continuing to drive our commercial business under our existing CE Mark in Europe.”

**Responder Rates Grow to 1 Year**

Improvements in the percentage of patients reporting pain reduction continued beyond the 120-day assessment through one year for both groups. The percentage of the 56 patients in the treatment group that have completed the one-year assessment having a 30% or greater reduction in low back pain VAS at that assessment without an increase in pain medication was 75%. The percentage of the 60 patients in the cross-over group that have completed the one-year assessment having a 30% or greater reduction in low back pain VAS at that assessment without an increase in pain medication was 68%. The percentage of the 116 patients in the both groups that have completed the one-year assessment having a 50% or greater reduction in low back pain VAS at one year without an increase in pain medication was 60%. Substantial improvements in disability as measured by the Oswestry Disability Index (ODI) were also observed at one year. These data are subject to change as the remaining patients reach the one-year assessment.

“The totality of this data is encouraging for this large group of patients with limited treatment alternatives,” said Dr. Chris Gilligan, Chief, Division of Pain Medicine, Department of Anesthesiology, Perioperative and Pain Medicine, Brigham & Women’s Hospital, Assistant Professor of Anaesthesia, Harvard Medical School, and Principal Investigator for the study. “The data on the patients that have completed one year of therapy are important, particularly because these patients have not experienced meaningful pain relief from existing treatment options. The data showing 60% of patients experiencing a 50% or greater pain reduction at one year surpasses what many implanting physicians expect from implantable neurostimulation devices.”

**Results Demonstrate Voluntary Decrease in Back Pain Medication Use**

The protocol permitted patients to adjust their back pain medication usage after the 120-day assessment point. At one year, 44% of the 50 patients who were on opioids at baseline had voluntarily eliminated (28%) or significantly reduced (16%) their use of opioids. These results are subject to change as the remaining patients reach the one-year assessment.

**Secondary Endpoints**

For secondary endpoints, such as disability measured by the ODI and quality of life measured by the EQ-5D quality of life instrument, numerical improvements in the treatment group as compared to the control group were observed at 120 days. The Company is evaluating the clinical significance of those findings. The Company continues to analyze the efficacy data for the purpose of better understanding the performance of the device.

**Device-Related Adverse Events in Line With Other Studies**

ReActiv8 is implanted in a minimally invasive procedure utilizing techniques commonly used by our physician customer base in other procedures. The incidence and type of adverse events (AEs), including serious AEs, were comparable to AEs in clinical trials reported for other neurostimulation devices, with no unanticipated AEs related to the device, procedure or stimulation.

“The study showed a comparable safety profile to other implantable neurostimulation devices, including no migration of leads,” said Dr. Richard Rauck, President and Founder, Carolinas Pain Institute, Medical Director for The Center for Clinical Research, Pain Fellowship Director at Wake Forest University School of Medicine and Chairman of the DMC. “This safety profile, combined with the efficacy data from this study and the lack of available alternatives for this patient population, suggest that ReActiv8 can be a promising therapy for patients with chronic low back pain.”

**PMA Plan**

“In summary, we believe the evidence of effectiveness and the favorable safety profile of ReActiv8 show considerable promise, particularly when compared to the response rates and safety profiles of alternative

treatments," continued Mr. Hannon. "We believe that the totality of the data will support the submission of a PMA application for ReActiv8 to the FDA. We plan to seek a pre-PMA meeting with the FDA in the coming months to obtain guidance on our filing content and strategy."

**Investor Conference Call**

Jason Hannon, Chief Executive Officer, will host a conference call and webcast with Q&A for analysts and investors to discuss the results from the study at 8:00am GMT (9:00am CET) on 19 November 2018. The call will be conducted in English. The webcast will be made available on Mainstay's website at www.mainstay-medical.com on the News & Events tab. The presentation and webcast will be available on the Mainstay Medical website one hour before the call, and a replay will be available for 30 days.

Webcast link: https://edge.media-server.com/m6/p/gy64sk9n

Dial-in details for the call are:
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Participant PIN: 18286266#

**This announcement contains inside information within the meaning of the EU Market Abuse Regulation 596/2014.**

**About Mainstay**
Mainstay is a medical device company focused on commercializing an innovative implantable restorative neurostimulation system, ReActiv8®, for people with disabling Chronic Low Back Pain (CLBP). The Company is headquartered in Dublin, Ireland. It has subsidiaries operating in Ireland, the United States, Australia, Germany and the Netherlands, and is listed on the regulated market of Euronext Paris (MSTY.PA) and the ESM of Euronext Dublin (MSTY.IE).

**About the ReActiv8-B Study**
The ReActiv8-B Study is an international, multi-center, prospective, randomized, sham-controlled, blinded trial with one-way crossover conducted under an Investigational Device Exemption (IDE). In summary, this means that eligible patients had baseline data collected and then following verification that the enrollment criteria were met, ReActiv8 was implanted. At the 14-day post implant follow up visit, half the patients were randomized to receive appropriately programmed stimulation (the treatment arm), and half were randomized to receive sham stimulation/low stimulation (the control arm). Information about the study can be found at https://clinicaltrials.gov/ct2/show/study/NCT02577354.

**About Chronic Low Back Pain**
One of the recognized root causes of CLBP is impaired control by the nervous system of the muscles that dynamically stabilize the spine in the low back, and an unstable spine can lead to back pain. ReActiv8 is designed to electrically stimulate the nerves responsible for contracting these muscles and thereby help to restore muscle control and improve dynamic spine stability, allowing the body to recover from CLBP.

People with CLBP usually have a greatly reduced quality of life and score significantly higher on scales for pain, disability, depression, anxiety and sleep disorders. Their pain and disability can persist despite the best available medical treatments, and only a small percentage of cases result from an identified pathological condition or anatomical defect that may be correctable with spine surgery. Their ability to work or be productive is seriously affected by the condition, and the resulting days lost from work, disability benefits and health resource utilization put a significant burden on individuals, families, communities, industry and governments.

Further information can be found at www.mainstay-medical.com

*CAUTION – in the United States, ReActiv8 is limited by federal law to investigational use only.*

**Forward looking statements**
This announcement includes statements that are, or may be deemed to be, forward looking statements. These forward looking statements can be identified by the use of forward looking terminology, including the terms

“anticipates”, “believes”, “estimates”, “expects”, “intends”, “may”, “plans”, “projects”, “should”, “will”, or “explore” or, in each case, their negative or other variations or comparable terminology, or by discussions of strategy, plans, objectives, goals, future events or intentions. These forward looking statements include all matters that are not historical facts. They appear throughout this announcement and include, but are not limited to, statements regarding the Company’s intentions, beliefs or current expectations concerning, among other things, the data from the ReActiv8-B clinical study, the Company’s plans in relation to that data, and the Company’s results of operations, financial position, prospects, financing strategies, expectations for product design and development, regulatory applications and approvals, reimbursement arrangements, costs of sales and market penetration and other commercial performance.

By their nature, forward looking statements involve risk and uncertainty because they relate to future events and circumstances. Forward looking statements are not guarantees of future performance, and the actual results of the Company’s operations, and the development of its main product, the markets and the industry in which the Company operates, may differ materially from those described in, or suggested by, the forward looking statements contained in this announcement. In addition, even if the Company’s results of operations, financial position and growth, and the development of its main product and the markets and the industry in which the Company operates, are consistent with the forward looking statements contained in this announcement, those results or developments may not be indicative of results or developments in subsequent periods. A number of factors could cause results and developments of the Company to differ materially from those expressed or implied by the forward looking statements including, without limitation, the successful launch and commercialization of ReActiv8, the outcome of the ReActiv8-B Clinical Study, the outcome of discussions with the FDA on a PMA application for ReActiv8, general economic and business conditions, global medical device market conditions, industry trends, competition, changes in law or regulation, changes in taxation regimes, the availability and cost of capital, the time required to commence and complete clinical trials, the time and process required to obtain regulatory approvals, currency fluctuations, changes in its business strategy, and political and economic uncertainty. The forward-looking statements herein speak only at the date of this announcement.

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