

LivaNova Receives FDA Approvals FOR SENTIVA DEVICE FOR TREATMENT OF EPILEPSY

► *Trend Watch: Health Technology Increases Wellness Across Epilepsy, Autism, and Weight Loss*

LivaNova, a market-leading medical technology company, has received FDA approval for its latest vagus nerve stimulation therapy (VNS Therapy) system, which consists of the SenTiva implantable generator and the next-generation VNS therapy Programming System for the treatment of patients with drug-resistant epilepsy. SenTiva is the smallest and lightest responsive therapy for epilepsy. The new VNS therapy programming system features a wireless wand and new user interface on a small tablet. Together, the components offer patients with drug-resistant epilepsy a physician-directed customizable therapy with smart technology and proven results to reduce the number of seizures, lessen the duration of seizures, and enable a faster recovery.

SenTiva is the first epilepsy device of its size to include detect-and-respond mode, designed to prevent seizures before they start and automatically deliver extra therapy to stop them if they do.

SenTiva also collects and logs events commonly associated with seizures, including a patient's body position and heart rate variations. Barrow Neurological Institute at Phoenix Children's Hospital will be the state's first to offer VNS Therapy through SenTiva.

The VNS therapy programming system is compatible not only with SenTiva, but with all LivaNova legacy VNS Therapy generators, allowing physicians to use the system with numerous patients. When combined with SenTiva's technology, the new system provides several advanced options and personalized features, including allowing physicians to quickly deliver treatment with one touch, and safely program multiple therapeutic steps during one office visit. This feature may also allow the patient to achieve a therapeutic range sooner. Physicians have flexibility to customize therapy when their patients need it at specific times, day or night.

Modius Aims to Help People Achieve Leaner BODIES THROUGH NEUROSCIENCE



Modius, the first of its kind revolutionary headset by neurotechnology company Neurovalens, aims to help people achieve leaner bodies by reducing body fat through neuroscience. Modius activates the hypothalamus, and this naturally causes a shift in metabolism to burn more fat, resulting in weight loss.

Modius uses low-power electrical pulses to stimulate the vestibular nerve, which runs into the brain from just behind the ear. The brain interprets the stimulation as the body being more physically active. Modius raised more than \$1.5 million in its first Indiegogo campaign this fall, beating its funding goal by more than 3,000%.

Sugarpod by Wellpepper WINS ALEXA CHALLENGE

Earlier this year, Amazon Web Services challenged health technology companies to put Amazon's Alexa voice assistant to work in helping those with newly diagnosed Type 2 diabetes. The winner of the Alexa Challenge \$125,000 grand prize was Seattle-based health software startup Wellpepper, which entered its first-ever device in the competition. Known as Sugarpod, the device is a connected weight scale and foot scanner that integrates with

the Sugarpod app and Alexa.

It monitors patients' weight and keeps an eye out for foot ulcers, a common diabetes complication. It also helps patients stay on track with their treatment, including tracking diet, glucose level, and medication.

The competition was a collaboration between Merck, strategy consultant Luminary Labs, and Amazon Web Services.

AMA to Unleash a New Era OF PATIENT CARE

A new collaborative initiative — the Integrated Health Model Initiative (IHMI) — founded by the American Medical Association (AMA) is a platform to bring together the health and technology sectors around a common data model that is missing in healthcare. IHMI fills the national imperative to pioneer a shared framework for organizing health data, emphasizing patient-centric information, and refining data elements to those most predictive of achieving better outcomes. Evolving available health data to depict a complete picture of a patient's journey from wellness to illness to treatment and beyond allows healthcare delivery to fully focus on patient outcomes, goals and wellness. Participation in IHMI is open to all healthcare and technology stakeholders, and early collaborators include IBM, Cerner, Intermountain Healthcare, American Heart Association, American Medical Informatics Association, and a growing list of other organizations. IHMI supports a continuous learning environment with an online platform that enables a common data model to evolve with real-world use and feedback from participants.

By offering a common data model for the health system to collect, organize, exchange, and analyze critical data elements, IHMI imagines all clinicians equipped with essential information to shift care plans toward achieving outcomes that are more relevant to a patient's quality of life and consistent with the patient's lifestyle, goals, and health status. Given the high economic and societal burden of chronic diseases, IHMI will initially prioritize its resources and efforts in clinical areas such as hypertension, diabetes and asthma.

"IHMI is the latest development in the AMA's ongoing work to build bridges with health technology leaders and bring the physician voice into the innovation space. Patients deserve — and the marketplace should expect — physician input on the real-world value and feasibility of products and health technologies," says AMA Senior VP of Health Solutions Laurie McGraw. "With a proven track record as a trusted, neutral convener, the AMA is uniquely qualified to lead and facilitate a collaboration that helps physicians take on a greater role in leading changes that will move technological innovations forward."

As part of its ongoing work to shape and support effective digital health innovation using physician expertise, the AMA has also launched an online platform designed to bring physicians and healthtech companies together to develop and improve healthcare technology solutions. The new Physician Innovation Network is an online community where physicians can find and connect with companies and entrepreneurs.

Disposable Device for BLOOD COLLECTION FDA APPROVED

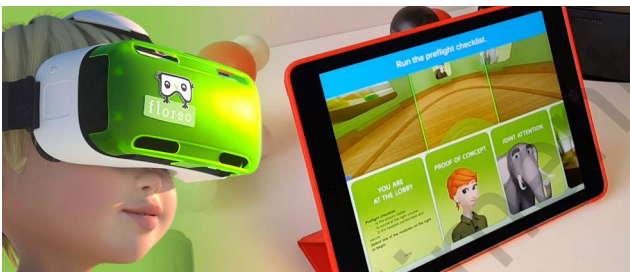
Seventh Sense Biosystems has received FDA approval for its blood collection device, specifically to test the HbA1c levels in patients with diabetes and prediabetes. The company plans to add more assays for use with the device after more testing and with additional FDA approval. Seventh Sense says its small, disposable devices can make blood collection more convenient and less stressful, especially for patients who have a fear of needles or want to avoid the discomfort of a finger prick.



The device is roughly the size of a stethoscope head, and it sticks to the skin of the upper arm with the help of adhesive hydrogel. At the push of a button, tiny needles (each about as thick as a hair) penetrate the outer layers of the skin. Using vacuum pressure, the device siphons about 100 microliters worth of blood from the patient's capillaries. The blood moves through tiny channels in the device to an internal reservoir, where it resides until it reaches the lab

for analysis. Seventh Sense CEO Howard Weisman has said patients don't feel the prick of the micro-needles, just some of the suction of the vacuum pressure, and they can't see the blood being drawn. The whole process takes two to three minutes.

VR Tool Being DEVELOPED FOR AUTISM



A partnership between Floreo and Centria Healthcare's Autism Services is focusing on piloting new virtual reality-driven autism therapy learning modules. Floreo and CAR will test whether immersive virtual reality can improve social skills in children and teens with autism spectrum disorder.

Floreo's virtual reality application provides immersive and engaging therapy intended to help individuals with ASD build real-world skills. If proven effective, the application would be an affordable supplement to traditional therapy that is fun and engaging for the user, while allowing a supervising adult to monitor and guide the activities. Floreo's team of experts have developed learning modules based on established autism therapy techniques that users can return to again and again. These lessons focus on developing skills for better social reciprocity and engagement by practicing discrete skills. Floreo provides interactive stories that teach users how to manage planned and unplanned scenarios.

These teaching stories place the user in real-world interactions and guide them through everyday interactions in a way that is fun and effective. Floreo has also developed VR scenarios where the user can experience calming and engaging environments. Floreo provides unique sensory-based therapies that delight children and adults alike.

HEALING PATIENTS WITH DIGITAL WARMTH: A Prescription for Life Sciences



Bhaskar Sambasivan, SVP & Global Markets Leader, Cognizant Life Sciences

Earlier this year, ReD Associates and Cognizant conducted an extensive research that cut across disease areas to understand how patients heal – that is, what happens when people face a health risk or issue and need to manage or overcome it. By participating in people's everyday lives, we found that most patients experience the US healthcare system as cold and inflexible, so they "warm" their care by measuring outcomes according to their own goals; building care ecosystems of friends, family and fellow patients; and going through a process of discovery in order to fit treatment into their daily life.

Digital solutions and initiatives are ideal for warming the healthcare system—when they align with patients' experience of healing. Our study suggests life sciences companies could focus on these capabilities:

Make clinical trial participation meaningful to a patient's personal goals. Adapt patient protocols and digital health solutions to help patients identify, set and track personal goals, and give investigators the ability to monitor their progress, providing the support they need to stick with the trial. This approach should reduce trial attrition rates.

Enable a more transparent HCP-patient relationship. Create digital tools that help patients tell their full health and life stories to improve patient confidence in the HCP relationship.

Design integrated patient support programs. Knit together integrated, multi-channel patient programs that provide patients with the adaptive, personalized support they are seeking across all stages of their journey.

Take a patient-centric approach to marketing. Recognize and integrate patients' needs and challenges into messaging that is organized around patients, rather than branded siloes, to drive consistent messages about what matters most to patients (and providers) across portfolios.

Wrap products in services that transcend medicinal value. Combine medical outcome-driven efforts towards medical measurement, live support and remote monitoring with a deep understanding of consumer needs and behaviors to deliver value specific to their disease areas.

Our study shows the best way to realize the promise of digital tools to make patient engagement more effective is to ensure apps, devices and processes are designed to incorporate the realities of how people manage their health risks and conditions. Measures and processes that are meaningful within the industry may not matter at all to patients. Providing features and assistance in ways that matter to patients will help them achieve their goals—and help the industry meet its objectives of better outcomes and greater efficiencies. ●

To learn more, read "Helping People Heal" available at <http://cognizant.com/helpingheal>