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The Medical Device Innovation Consortium (MDIC) has accepted Articulate Labs into its Advanced Manufacturing Clearing House (AMCH) initiative.

MDIC's support will enable sharing of Articulate Labs' use of digital twin methodology to improve and advance medical device development and construction.

Dallas, TX – The Medical Device Innovation Consortium (MDIC) has accepted Articulate Labs into its Advanced Manufacturing Clearing House (AMCH) initiative.

MDIC is piloting the AMCH program, with support from the Food and Drug Administration (FDA), to help encourage the medical device industry to adopt advanced technology not just during device production but across the total product life cycle. Goals for implementing advanced manufacturing technologies include improving product quality, increasing operational effectiveness, and increasing product intelligence.

The real-time operating system (RTOS) enabling Articulate Labs' devices integrates a broad spread of metrics collected off of patients within a digital twin – a digital model of a real-world physical system or product - to better personalize therapeutic capability and to potentially offer diagnostic feedback to providers. Articulate Labs' first, publicly visible application for this technology is in gait-synchronous electrical muscle stimulation of atrophied quadriceps (thigh) musculature toward accelerated knee rehabilitation. However, the underlying RTOS can be adapted, beyond addressing other joints or musculoskeletal conditions, to create other medical devices that take in a variety of environmental inputs and output high-resolution detail on physical systems and adaptive, semi-autonomous therapies. For other medical devices, RTOS construction may also enable use of lower cost processors, eliminate reliance on Internet connectivity for real-time data processing, and offer internal error management to reduce risk to patients in case of device failure.

Over the course of six months, Articulate Labs and MDIC will collaborate to build a use case for Articulate Labs' RTOS – how the technology was developed, how it was implemented, what lessons were learned in the process, and what measurable changes occurred after technology implementation – to share with the medical device community. Additionally, the AMCH program enables proactive interaction with the FDA throughout the project's execution. Articulate Labs is the first company to be accepted into the AMCH initiative offering digital twin technology.

The views expressed in this article are those of the author and may not reflect the official policy or position of MDIC or the FDA.

About MDIC

The Medical Device Innovation Consortium (MDIC) is the first public-private partnership that brings together representatives of the Food and Drug Administration (FDA), National Institutes of Health (NIH), Center for Medicare and Medicaid Services (CMS), NIST, and other agencies, industry, non-profits, and

patient advocacy organizations to improve the processes for development, assessment, and review of new medical technologies. MDIC coordinates the development of methods, tools, and resources used in managing the total product life cycle of a medical device to improve patient access to cutting-edge medical technology. For more information, follow the company on LinkedIn or Twitter, or visit https://mdic.org.

About Articulate Labs

Articulate Labs is a medical device company developing wearable technology to augment and restore muscle function through movement-synchronous electrical muscle stimulation. Articulate Labs' first device, KneeStim™, is a light, low-profile device that uses neuromuscular electrical stimulation (NMES) to dynamically stimulate quadriceps muscles in sync with regular activity, accelerating rehabilitation by strengthening and training muscles with each step. By providing muscle stimulation in concert with regular physical activity, KneeStim offers an opportunity to rehabilitate beyond what passive NMES use or physical therapy could do alone. For more information, visit https://articulatelabs.com, follow the company on LinkedIn or Twitter, or contact info@articulatelabs.com.