

Human Patient Simulation Center Facilitates Medical Device Development



Designing and developing medical devices is a challenging business, and as America's health care system evolves, Battelle creators are busy innovating new products. But the hurdles of the industry get higher all the time.

That's why Battelle turns to a hometown neighbor to get the process started easily. Just north of Battelle's main campus in Columbus is OhioHealth's Center for Medical Education + Innovation™ (CME+I) at Riverside Methodist Hospital. The five-year-old, state-of-the-art facility for medical training and concept and new product testing serves as the perfect spot to get prototypes into action.



Reade Harpham, Manager of the Human Centric Design group in Battelle's Health and Life Sciences Global Business, says the Food and Drug Administration has become more stringent than ever on use error on medical devices. Harpham says while FDA strongly recommends developers like Battelle to incorporate real-world feedback into their designs, increased restrictions in hospitals makes it difficult to get early-stage designs of medical devices into actual end-use environments. That's where the CME+I comes in. "You have to test your product with end users in their environments to mitigate problems," Harpham said. "We're simulating real-world user feedback from almost the inception of the idea without the worry of compromising a patient's privacy."

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Jennifer Beard, MD, is the Director of the CME+I. "By working collaboratively with Battelle, we can seamlessly serve as a 'one-stop-shop' to be instrumental in new product development," she said. "By taking a product from the earliest phases of design on through early 'hands-on' user feedback, we can help better define commercial stability. We have the ability to demonstrate, in a clinical context via our virtual hospital, the end-users' impressions and needs before, and even after, market entry. It's really exciting for us to be able to work with such a prestigious research innovator, like Battelle, and to have the opportunity to expand our center's focus from one of education to one including innovation."

The CME+I facility can simulate anything from a quiet doctor's office to a hectic ER, allowing the prototypes Harpham's team designs to be put through paces and yield useful data. "We can use our prototypes and models and get critical feedback very early in the development phase and it's not on a real person," Harpham said. "It allows us great insight early on and we don't have to wait to get feedback from the field."

This early insight can drastically cut down on cost and time for the development of a new medical device, making Battelle an even better option for its commercial customers. "People partner with Battelle to develop cutting edge medical devices that are safe, effective and easy to use," Harpham said. "Collaborating with CME+I has proven to be a critical aspect of our ability to do just that."

In 2007, CME+I was certified by the American College of Surgeons as a Level I Training Institute, one of just 10 in the United States. Top residents, physicians and other healthcare professionals from around the world train at the center to achieve the highest levels of competency. It is believed that proficiency-based training facilities such as CME+I can help prevent as many as 100,000 deaths a year due to medical errors.

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