

Robotic solutions for the hospital of the future

ABB is to install advanced collaborative robotics for medical laboratories and hospitals, starting with a new healthcare hub at Texas Medical Center in Houston, US, in October. The new facility at Texas Medical Center's innovation campus will focus on non-surgical medical robotics systems, a global market that is estimated at nearly 60 000 non-surgical medical robots by 2025.

ABB has announced that it will introduce collaborative robots to medical laboratories as it opens a new healthcare hub at the Texas Medical Center (TMC) innovation campus in Houston, Texas.

TMC is the largest medical city in the world and is at the forefront of advancing life sciences. Home to the brightest minds in medicine, TMC nurtures cross-institutional collaboration, creativity, and innovation among its 106 000-plus employees. The centre hosts 10-million patients every year, performs over 180 000 surgical procedures, conducts over 750 000 emergency room visits, performs close to 14 000 heart surgeries and delivers over 25 000 babies.

Beyond patient care, TMC is pushing the boundaries of clinical research across its extensive net-

work of partner institutions on a daily basis, pioneering effective health policy solutions to address the complex health care issues of today, and cultivating cutting-edge digital health applications and medical devices.

The new TMC innovation campus will be ABB's first dedicated healthcare research centre when it opens in October 2019. ABB's research team will work on the campus with medical staff, scientists and engineers to develop non-surgical medical robotics systems, including logistics and next-generation automated laboratory technologies.

Sami Atiya, president of ABB's Robotics and Discrete Automation business says: "The next-generation laboratory processes developed in Houston will speed manual medical laboratory processes, reducing and



eliminating bottlenecks in laboratory work and enhancing safety and consistency. This is especially applicable for new high-tech treatments, such as the cancer therapies pioneered at the Texas Medical Center, which today require manual and time-consuming test processes."

Today, a limiting factor to the number of patients who can be treated is the need for

highly skilled medical experts who spend a large part of their day doing repetitive and low value tasks, such as preparing slides and loading centrifuges. Using robots to automate these tasks will enable medical professionals to focus on more highly skilled and productive work, while ultimately helping more people to receive treatment by dramatically speeding up the testing process.

ABB has analysed a wide range of current manual medical laboratory processes and estimates that 50% more tests could be carried out every year using automation, while training robots to undertake repetitive processes will reduce the need for people to do tasks that cause repetitive strain injury (RSI).

As the world population ages, countries are spending an increasingly larger proportion of their GDP on healthcare. In addition to improving the quality of patient care, increasing healthcare efficiency through automation can ease some of the societal, political and financial challenges that this will cause. The market for non-surgical medical robots is estimated to reach nearly 60 000 by 2025 with the market almost

quadrupling compared to 2018, according to an internal ABB research.

ABB's collaborative robots, which already operate in food and beverage laboratories worldwide, are well suited to medical facilities as they don't require safety fences to operate safely and efficiently alongside people. The robots will undertake a range of repetitive, delicate and time-consuming activities including dosing, mixing and pipetting tasks as well as sterile instrument kitting and centrifuge loading and unloading.

Houston is a focal point for medical technology research globally and the TMC innovation ecosystem is the ideal location for ABB's new healthcare hub. A 20-strong team from ABB Robotics will work in the new 500 m² research facility, which includes an automation laboratory and robot training facilities, as well as meeting spaces for co-developing solutions with innovation partners.

"With this exciting partnership, TMC continues to push the boundaries of innovative collaboration with cutting-edge industry partners by establishing TMC as the epicentre for ABB Robotics' entry into the healthcare space," says Bill McKeon, president and CEO of Texas Medical Center. "To operating a city within a city that sees 10-million patients on an annual basis, it is essential to prioritise efficiency and precision, and to develop processes that are easily repeatable in nature. By bringing ABB into the fold at TMC Innovation with this first-of-its-kind R&D facility for creating robotics solutions in healthcare, TMC is emphasising its commitment to doing just that."

Atiya continues: "We are proud to co-develop collaborative robotics systems for the hospital of the future with one of the world's most advanced partners and to test them in real-world laboratories to ensure they add value to healthcare professionals, driving innovation and transforming how medical laboratories operate worldwide," she says.

"A key element of ABB's long-term growth strategy is to continue to invest and innovate in service robotics, bringing our automation expertise to new areas such as healthcare, building on our automotive and electronics sectors' business."

ABB Robotics is a pioneer in industrial and collaborative robots and advanced digital services. As one of the world's leading robotics suppliers, the company is active in 53 countries in over 100 locations and has shipped over 400 000 robot solutions for a diverse range of industries and applications.

With TMC innovation campus' focus on flexibility, efficiency, safety and reliability, ABB Robotics is demonstrating the real value of the connected and collaborative future workplace. □

Left: New high-tech treatments such as the cancer therapies pioneered at the Texas Medical Center, will be automated to overcome the need for manual and time-consuming test processes.

Below: ABB's collaborative robots already operate in food and beverage laboratories worldwide.

Right: Next-generation laboratory processes developed in Houston will speed manual medical laboratory processes, reducing and eliminating bottlenecks and enhancing safety and consistency.

