Ireland Where Digital Health Thrives

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Digital monitoring of patient care

Conor Russell, Vice President of Operations at Boston Scientific, talks about the latest developments in remote monitoring and the importance of digital health activities in Ireland.

"Developing the right patient monitoring tools to support our implantable medical devices ensures that not only can we continue to deliver the best patient outcomes, but that we also provide the most effective way to communicate and follow up with our patients after surgery. Some of our devices deliver therapy for many years after implant, so streamlining the follow up process is essential to reducing any overall burden on the healthcare system and helping patients manage their condition" says Conor Russell, who is based at Boston Scientific's Clonmel facility in Co Tipperary

Boston Scientific is a global leader in the development of medical devices for cardiology, endoscopy, urology and a range of debilitating conditions such as chronic pain, Parkinson's Disease, digestive system cancers, vascular diseases and heart rhythm disorders The company employ around 6,000 employees at their Clonmel, Cork and Galway sites, and employ over 36,000 people worldwide.

"Here in Clonmel we develop and manufacture long term implantable electronic devices such as implantable cardiac pacemakers and defibrillators, as well as neurostimulators such as spinal cord and deep brain stimulators".

Conor says they are increasingly turning to utilising digital and connected health solutions to support both patients and physicians.

One of the key cardiac devices produced by Boston Scientific is the cardiac implantable cardioverter defibrillator (ICD). This device monitors and treats dangerously fast ventricular heart rhythms. When the ICD senses a dangerously high heart rate, it sends a high voltage electrical shock to the heart which stops the arrythmia and allows the heart to resume beating normally again.

“Our ICDs are a life-saving technology that can last up to 10 years and as such it’s incredibly important for our patients and their physicians that we can remotely monitor these devices and that we can continuously review the critical patient data that they generate. The majority of our cardiac devices are automatically connected to the LATITUDE NXT Remote Patient Management System. This is comprised of a communicator and secure website, as well as an optional weight scale and blood pressure monitor, to help physicians monitor patients’ cardiac device remotely. Not only is this beneficial for physicians, but very much so for patients as well. Physicians can remotely check in on the patient at any time and get notified of any patient episodes that may have occurred. One patient even recently described having remote monitoring as if they were ‘taking their doctor to bed at night’!

“Using our HeartLogic algorithm, our R&D team have also devised a way to use multiple sensors on our devices to track physiological trends and combine them using an algorithm to predict the onset of an acute heart failure episode up to 34 days in advance. When it predicts an event, it sends an automatic alert sent to their doctor. and enables the doctor to provide early intervention advice to patients and avoid expensive trips to the hospital that often occurs with these acute events.

Boston Scientific spinal cord stimulation devices are also manufactured at this facility. These are implanted devices for patients who suffer from conditions such as chronic back pain. Prior to getting a device, many of these patients have tried other treatments, such as prescription medications or back surgeries, which have been unsuccessful. The implanted device generates an electrical pulse to stimulate the spinal cord and can significantly reduce the patient’s pain, helping them resume daily activities and improving quality of life.

As pain is unique to the individual and even for the same person, their pain will often move around, there is ever growing need to be able to personalise stimulation therapy for each patient. By connecting the device wirelessly to external control devices, patients can change the stimulation mode and the intensity, thereby giving them more control to choose the therapy that works best for them at that time.

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Creating connected devices

Boston Scientific supplies these devices and other devices from their Clonmel facility which employs over 1,000 people. The products manufactured in Clonmel are then distributed all over the world.

Conor says "Over the past 20 years, we have built a highly specialised team that combine software, firmware and electronic skillsets with the more traditional process, automation and science-based skillsets that we usually associate with medical devices. We are a leader in long term electronic implantable medical devices and it's critical that we continue to build on that. Our ability to attract and retain the best talent in the industry is essential to our long term success and luckily here in Ireland we are have access to a great pipeline of STEM talent from our third level institutions and research institutions."

Digital health in Ireland

Conor says that even though Ireland is a small country, it is uniquely positioned to take advantage of the transformation that will take place in healthcare with the adoption of new digital health solutions. The adoption of these tools will be fuelled by increasing patient engagement, increasing regulation complexity and an ever greater need to keep healthcare costs under control.

With 9 of the world's top 10 medtech companies and 9 of the top 10 ICT technology companies in the world with locations in Ireland, there is a unique concentration of industry, skills and ambition to be a leading global hub for future digital health solutions.

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