

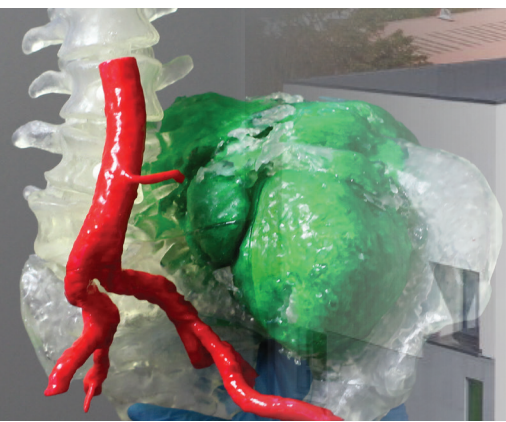
INNOVATION ISLAND SERIES

ZARA CONNECTED



TECHIRELAND

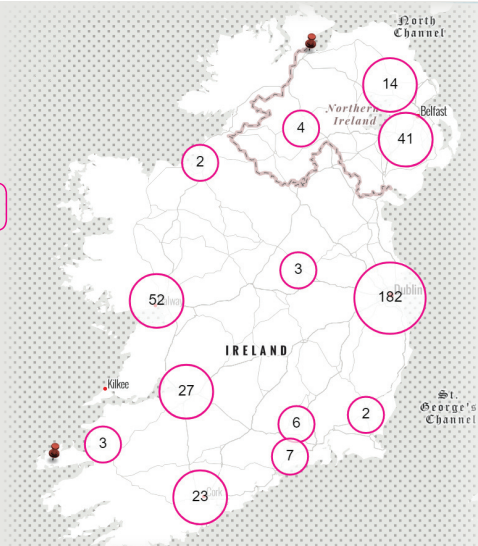
HEALTHTECH REPORT 2021



Sponsored by  InterSystems®

HEALTHTECH CLUSTERS ON THE ISLAND

TO VIEW ALL HEALTHTECH COMPANIES AND THEIR PROFILES ON AN INTERACTIVE MAP: [CLICK HERE](#)



470

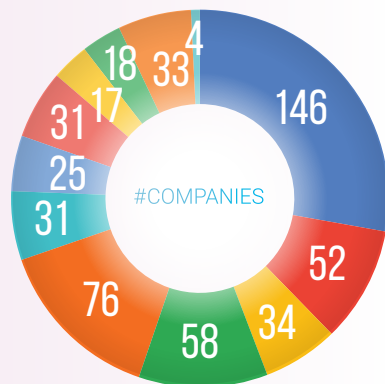
COMPANIES

EXITS 30 ACQUISITIONS 26 AND 4 IPOs

Jobs	Total Historical Funding	Female Founded	New Startups since 2018
12,300	€3B	83	61

HEALTHTECH SUB-SECTORS

- Medical Device
- Pharma
- Patient Engagement
- Diagnostics
- BioTech
- Therapeutics
- Covid-19 Project
- Fitness/Wellbeing
- AI Based
- Wearables
- Sensors
- AR/VR



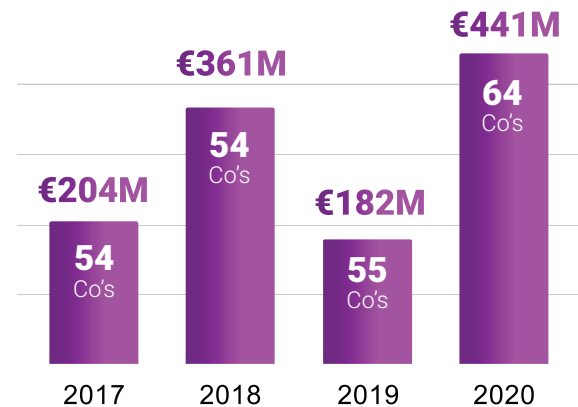
REGIONS 275 FEMALE LED 37

FUNDING TRENDS

REGIONS 8.6K

REGIONS €680M

REGIONS 9% FEMALE LED 22%



HEALTHTECH ECOSYSTEM

RECENTLY FUNDED HEALTHTECHS



TOP EMPLOYERS



TO VIEW ALL 470 HEALTHTECH COMPANIES: [CLICK](#)

HEALTHTECH MULTINATIONALS



TO VIEW ALL 69 HEALTHTECH MULTINATIONALS: [CLICK](#)

HEALTHTECH HUBS



TO VIEW ALL HEALTHTECH HUBS: [CLICK](#)

Note: This is not an exhaustive list, please email us for more information.

INTRODUCTION

TechIreland's database features 470 indigenous Health Tech businesses and in over 69 multinationals. Health Tech is one of our most important tech sectors, alongside Enterprise Software and FinTech. Our vibrant Health Tech ecosystem boasts of some great success stories, many of which are featured here.

In fact, Ireland is probably the best place in the world today for a health-care-focussed, technology start-up. We are the number one destination for US tech firms with nine of the top ten companies having operations here. And we are also the second-largest exporter of medical devices in Europe. Ireland is home to nine of the world's ten largest pharmaceutical companies and we are the largest net exporter of pharmaceuticals in the EU. These world class companies across technology and healthcare, together with academia and government-supported

research centres, have created an unrivalled talent pool.

And the sector is widely dispersed, with significant operations in nearly every county of Ireland and Northern Ireland.

WE ARE THE NUMBER ONE DESTINATION FOR US TECH FIRMS WITH NINE OF THE TOP TEN COMPANIES HAVING OPERATIONS HERE.

Covid has underlined the importance of the sector and has contributed to significant growth of exports and employment. Irish HealthTech companies raised over €388 million in the first half of this year, up from €248 million in the same period last year.

This report, the latest in our Innovation Island series, provides insights from some of the leading experts in the sector. Thanks John Kelly (InterSystems), Helen McBreen (Atlantic Bridge VC), Julian Seymour (Irrus Angel Network), Stephen Cox (Venari), Alan Foreman (B-Secur), Sohini De (Empeal) for their contributions.

Thanks also to InterSystems for their support in sponsoring this publication and to our Foundation Partners - Enterprise Ireland, IDA Ireland, Google and InterTradelreland for supporting our work. If you are seeking to connect with the Health Tech sector in Ireland or Northern Ireland, we are always happy to help.

JOHN O'DEA
TechIreland



TECHIRELAND'S INTERACTIVE HEALTHTECH MAP

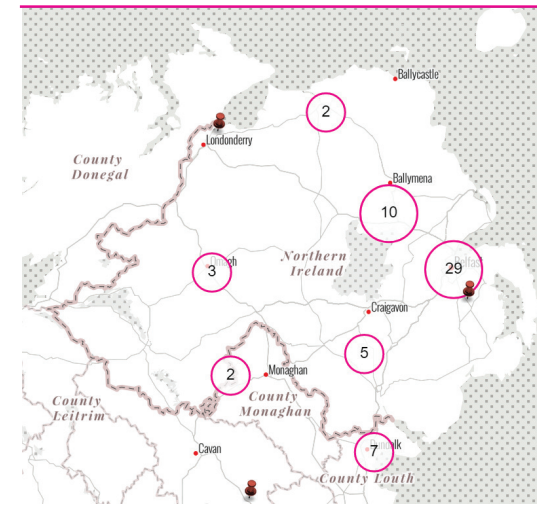
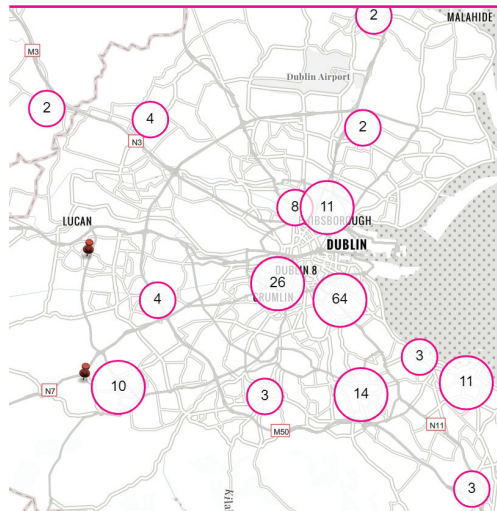
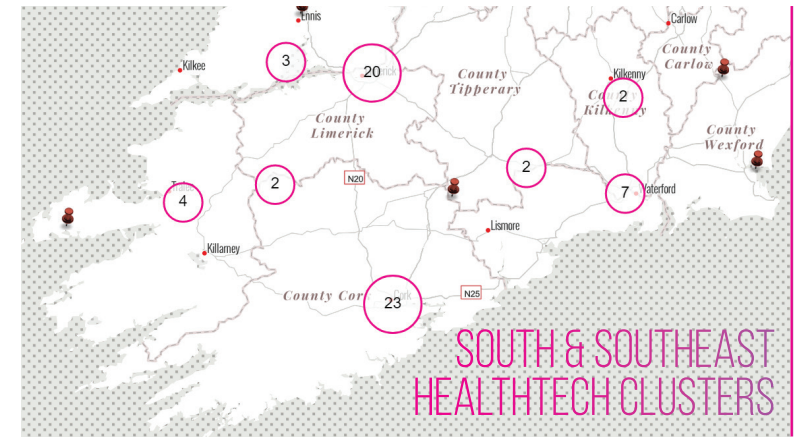
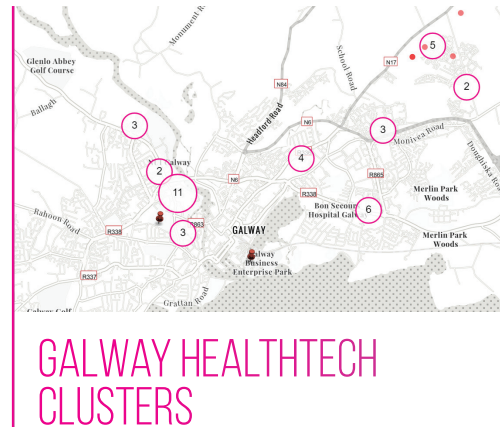
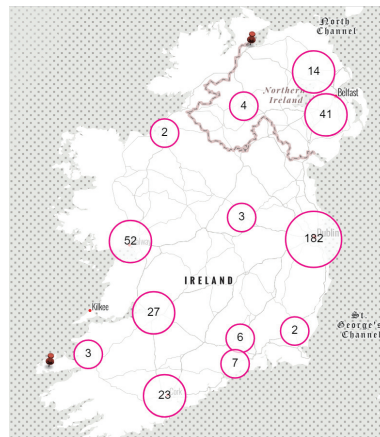
Go to
TechIreland's Interactive HealthTech Map
[Click here](#)

Zoom into cluster bubbles to view companies and popups.

Popups provide links to Company websites and TechIreland profiles.

This map is supported by TechIreland's data, companies Acquired or No Longer Active are not displayed here.

For heat maps based on jobs, funding raised, founder diversity, sub domains, [email us](mailto:info@techireland.com).





DATA - THE KEY TO UNLOCKING INNOVATION IN HEALTHCARE



JOHN KELLY
INTERSYSTEMS

From recording key vitals in hospital wards to the in-silica search for the next breakthrough treatment, data is the common denominator. Data to diagnose disease, manage care and run hospitals. Data to fuel research and discovery, measure efficacy, and inform health policy. Just as the public health advances of the 19th century were driven largely by investment in abundant, clean water, the digital health advances of the 21st will be driven by abundant, clean, healthy data.

Ireland is now one of Europe's most important health tech hubs, with 450 companies creating some of the most innovative software applications and solutions in the sector. Our strong infrastructure of life sciences research is creating new commercial opportunities with innovations in health, medtech and biotech. The pace of change and innovation in the sector is astounding and has only been accelerated by the events of the last 18 months.

Most health tech businesses in Ireland are engaged in R&D that involves data analysis. Health tech is a sector where innovations rarely operate

IRELAND IS NOW ONE OF EUROPE'S MOST IMPORTANT HEALTH TECH HUBS, WITH 450 COMPANIES CREATING SOME OF THE MOST INNOVATIVE SOFTWARE APPLICATIONS AND SOLUTIONS IN THE SECTOR.

as standalone systems. Sharing data with other systems and devices is essential to improve patient safety and clinical outcomes. And there is no shortage of data for them to work with. The Irish medtech industry is increasingly making use of advances in cloud computing and miniaturisation as well as the pervasiveness of smart devices to collect data, including real-time monitoring of patients' health. However, difficulties with exchanging and using data between different systems and devices can inhibit clinical acceptance and market potential with data often being stored in multiple silos and in different formats and standards. And

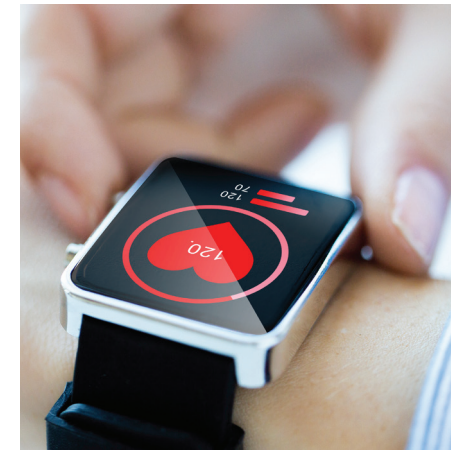
the challenge will only increase with the increasing use of IoT and related cyber security challenges. The extent to which systems and devices can exchange and interpret shared data is known as “interoperability”.

Ground-breaking AI applications, for instance, can deliver targeted and rapid insights to clinicians. Yet the aptitude of AI and machine learning will always depend on the quality and seamless exchange of the underlying data. Only by concentrating on this data management and ensuring that new applications can interoperate with existing solutions, can AI become a reality.

Our company, InterSystems, is proud to be working with many Irish health tech businesses to address their interoperability and data management challenges. We are delighted to have been invited to sponsor this report.

Find out more about how you can unlock your data's hidden potential here:

[InterSystems](#)





VENARI'S DECISION TO LOCATE IN THE GALWAY MEDTECH CLUSTER



STEPHEN COX
VENARI MEDICAL

We all benefit from the incredibly strong MedTech ecosystem here in Ireland. We have a global outlook, but we do it with a regional dimension.

Take [Venari](#) - we're part of a pipeline of early-stage companies focussed on real needs-led-innovation which didn't just happen here overnight or by accident. We are a product of decisions made decades ago to foster indigenous innovation.

For us, it was a strategic decision to set up Venari at the heart of the Galway medtech cluster at the GMIT Innovation Hub, to avail of catheter expertise – the fruits of decades of multinationals operating in our backyard. We have access to the ideal ingredients required for real deep-tech innovation – from world-leading suppliers, a rich pool of talent, university research programs, government supports -and some of the top multinationals on our doorstep.

We also have an incredible amount of goodwill here, particularly the network of experienced mentors who give their time so generously to the next generation of early-stage companies. They say that everyone

THE WORLD IS CONNECTED BY SIX DEGREES OF SEPARATION, BUT IN IRELAND, PARTICULARLY IN GALWAY, ITS NEVER MORE THAN 1 OR 2 DEGREES.

[BioInnovate](#) program at the NUI Galway. I met my two co-founders Dr. Nigel Phelan and Sean Cummins on the program as we followed the Stanford Biodesign innovation process. We identified a significant unmet clinical need for Chronic Venous Disease which affects 1 in 4 adults with millions of sufferers globally.

in the world is connected by six degrees of separation, but in Ireland, particularly in Galway, its never more than 1 or 2 degrees. It's like a village, with interconnections and relationships which you can't synthesize anywhere else.

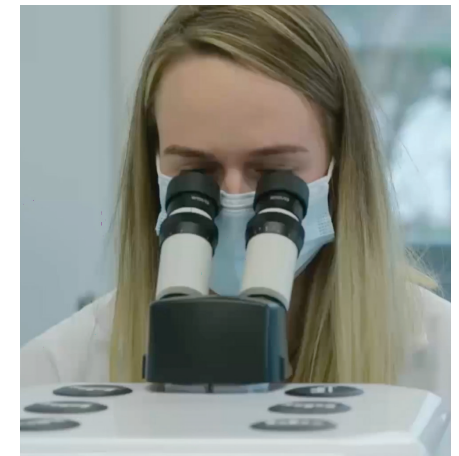
Venari is a spin-out from the Enterprise Ireland supported

Our novel medical device, EnVena, relies on the body's natural healing mechanism to cure symptoms of ineffective circulation in a single office-based procedure. It is suitable for treating the full spectrum of the disease, including the underserved venous leg ulcer patients, while being safer and less invasive than current treatments.

We closed a €4.5m international seed round last year and our first in-human clinical trials are currently underway. A further Series A funding round is planned in 2022 ahead of regulatory submissions.

Link

[Venari Medical](#)





HELEN MCBREEN
Atlantic Bridge

THIRD LEVEL RESEARCH CREATING WORLD- CLASS SPINOUTS

Ireland is the best place in the world for a healthcare-focussed technology startup. Our unique ecosystem of Irish and multinational medtech and pharma companies and our collaborative and integrated network of research centres, clinical leaders and patient advocacy agencies has created a world class research infrastructure and an unrivalled talent pool which is attracting significant investor interest in Irish start-ups. [The Atlantic Bridge University Fund](#) has recently invested in some exciting health tech spinouts from Irish Third Level:

- Dublin-based [OneProjects](#) is a prime example of how this synergy between technology and healthcare expertise can result in revolutionary treatments. This Trinity spinout uses cutting edge, real-time imaging systems to deliver complex treatments for cardiac arrhythmias. They recently closed a Series A funding round of €11m led

IRELAND IS THE BEST
PLACE IN THE WORLD FOR
A HEALTHCARE-FOCUSED
TECHNOLOGY STARTUP.

by our fund, alongside European and Irish investors. OneProjects' novel imaging platform has the potential to transform how Atrial Fibrillation, a common and debilitating heart condition, is treated and significantly improve quality of life for millions of patients.

- Galway-based [Tympany Medical](#) are also using state-of-the-art imaging approaches to improve treatments for people across the globe. Tympany are developing next-generation endoscopic vision technology to enable complex surgeries. The platform was invented in the NUI Galway prior to spinning out and raising a Seed round led by our fund.
- Rather than focussing on disease treatment, [Output Sports](#) and [Spectricity](#) are applying deep technology to optimise overall health and fitness. Output Sports have developed a wearable sensor with data analytics to monitor strength and conditioning and optimise training and recovery programmes. The system, which was developed at UCD's INSIGHT Centre for Data Analytics, is currently being used with some of the largest sporting organisations in the world, including Premier League Football teams, the NBA and numerous national Olympic squads. Spectricity, a Belgian tech company with

researchers in UCD, are building hyperspectral sensor systems to create advanced health monitoring platforms which will shape the future of health wearables.

- Ireland's health tech innovation isn't just confined to the health of humans! Cork-based [ApisProtect](#) are commercialising a data collection and analysis system that was developed in University College Cork to monitor the health of honey bees, maximising the output for producers and supporting the key role these pollinators have on the health of our environment.

Links

[The Atlantic Bridge University Fund](#)

[OneProjects](#) • [Tympany Medical](#) • [Output Sports](#) • [ApisProtect](#)





OVER €40MILLION ANGEL INVESTMENTS INTO IRISH HEALTH-TECH

HEALTH TECH IS A
SECTOR THAT CONTINUES
TO SPAWN NEW HIGH-
TECH ENTREPRENEURS.



COLIN HENEHAN
HBAN



AIDAN O'DRISCOLL
HBAN

The HBAN Medtech Syndicate and The Irrus Investment Syndicate are Ireland's two leading angel investor syndicates. We focus on Seed-stage and Series A investments into indigenous HealthTech companies with global ambition.

Collectively we have invested over €40M in seed capital directly into companies that have gone on to raise over €250M and attract significant European R&D grants. Our investee companies have developed ground-breaking technologies in both therapeutics and diagnostics in the cardiovascular, oncology, ENT, digital pathology, colorectal and connected healthcare spaces. Current portfolio companies include Croivalve, ProVerum, OncoAssure, Aventamed, Ostoform, Bluedrop, Deciphex, Mirai Medical and Signum Surgical.

Most of the Angel investors in health technologies in the HBAN Medtech and Irrus Investments network come from the wider Irish MedTech and healthcare ecosystem. A large proportion of them are successful en-

trepreneurs who have walked the walk already in successfully bringing healthcare technologies and products to market. They bring deep domain knowledge, both commercial and clinical, to help ensure the companies successfully get to market. The syndicate members have strong connections to the industry and contacts established over many years working in Multinationals, with connections to university research and development and later stage med tech investors within and outside Ireland.

Both syndicates are all-Ireland collaborative groups, actively mentoring and investing in innovative entrepreneurial teams and their ideas, focused on helping them to achieve returns and realise their full potential.

Health Tech is a sector that continues to spawn new high-tech entrepreneurs. Many of them initially set up as contract manufacturers, suppliers to the industry. Others start as engineers and scientists working for multinationals who spot an opportunity to set up on their own. And years later, after they have successfully grown their own business, these initial

entrepreneurs are investing in new start-ups. And so the cycle continues to build, with an ever-widening circle of investors and promoters developing new products.

Colin Henehan, Chair of HBAN Medtech Syndicate says, "As an entrepreneur and an investor, I had so much help on my journey, that I in turn will always offer support to start-ups whether I invest or not. This is the rich environment which gives great confidence to new promoters. There are great government supports and angel networks that will provide seed funding, and critical advice and guidance. If a promoter has a good idea, the funding can be found".

Links

[HBAN](#)

[The Irrus Investment Syndicate](#)





DIGITAL WELLBEING START-UP – CHALLENGES AND SUPPORTS

My business, Empeal, is an early stage, award-winning digital health company providing data driven, clinician led health and wellbeing solutions in a gamified way. This journey has been an exciting one for me since I made the career change from equity fund management to health and wellbeing. There is a lack of data driven, clinician-led solutions for effective prevention and management of chronic health conditions. Also, there is a lot of noise around employee wellbeing and companies are spending heavily on wellness programmes, but they have little to show for it by way of tangible results.

Empeal is now operating in several countries, but Ireland was a great place to startup. I received great initial support and mentoring from the LEO, New Frontier (supported by Enterprise Ireland) and Dublin BIC. We were also fortunate to participate in accelerator programs like NDRC and

IRELAND WAS A GREAT PLACE TO STARTUP. I RECEIVED GREAT INITIAL SUPPORT AND MENTORING

Starting Strong, which were invaluable in improving our value proposition, finding product market fit, securing further funding and, most importantly, generating revenues.

More recently, we participated in AlsessorAI, the AI Accelerator Program that is run in Tangent TCD and we were delighted to win the first prize of €250k investment. But even more important than the funding were the practical support provided by Tangent and Altada Technology Solutions – they were critical to enabling us to develop our AI solution.

Empeal is also a High Potential Startup supported by Enterprise Ireland. This is also a great programme if you are accessing international markets.

But it isn't just about government support. Other organisations like the Dublin Chamber are also doing great work supporting female founders and organisations like Nutritional Therapists of Ireland and Network Ireland are supporting the professional and personal development of Irish women entrepreneurs.

Covid has had a significant impact on the sector. Over the past eighteen months we have seen health, and digitization being brought to the forefront of everyone's mind. Wellness technologies such as Empeal now



SOHINI DE
Empeal



have the capabilities to give users access to health and wellbeing solutions when they are needed and in total privacy. Although medical remote patient monitoring and decision support systems are well developed, solutions that integrate medical considerations along with lifestyle interventions, will be in demand. So it seems that we are in the right place at the right time and ready to scale into a wellbeing business which makes money!

Link

[Empeal](#)



NORTHERN IRELAND IS ENJOYING A HEALTH TECH RENAISSANCE



ALAN FOREMAN
B-Secur

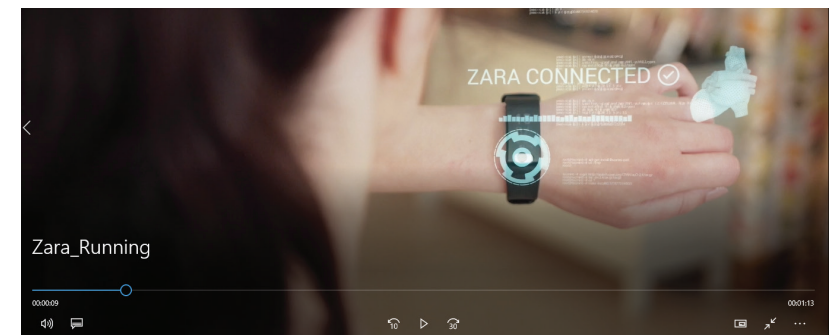
Northern Ireland's health tech sector is experiencing a renaissance, replicating the growth in the rest of Ireland. As we adjust to new ways of living and working post-Covid the tech industry, or at least parts of it including health innovation, is emerging from the crisis stronger than ever. Med-Tech and Consumer IoT are hot places for investors globally.

Early-stage businesses in Northern Ireland are now attracting larger funding rounds. For example, our company B-Secur, health tech software based in Belfast, raised almost £8million in the first half of this year, including \$6million from a US-based fund. And this is just the beginning.

When the virus struck it was clear that some health systems weren't up to scratch and traditional ways of 'serving' patients needed to change. The pandemic has accelerated the existing trend of relying more on technology – and investors are prepared to put money behind new ways of think-

ing. And as people increasingly focus on their health, and visiting hospitals and doctors becomes more challenging, our suite of algorithms enables global technology manufacturers to provide medical-grade wellness and health data from any device and from home.

Earlier this year B-Secur received FDA Clearance for our HeartKey software library, paving the way for us to work with some of the world's biggest tech companies to develop next-generation consumer wearables, taking medical-grade heart monitoring out of the hospital and straight to the consumer, enabling a more proactive, preventative approach to healthcare.



It's an exciting time for Northern Ireland; the calibre of graduates from our world-class universities and colleges is exceptional, making this place an attractive location for tech companies to grow and for graduates to satisfy their ambitions. We're also able to work with the Republic of Ireland's research institutes and to collaborate with the HSE on our model of continuous heart health monitoring.

B-Secur now employs over 45, mostly in Belfast, with staff in the UK and China and an office in San Francisco. This year our focus is on the U.S market, but as our customer base includes everyone on the planet, we are targeting sustained international growth.

Link [B-Secur](#)



IT'S AN EXCITING TIME FOR NORTHERN IRELAND; THE CALIBRE OF GRADUATES FROM OUR WORLD-CLASS UNIVERSITIES AND COLLEGES IS EXCEPTIONAL, MAKING THIS PLACE AN ATTRACTIVE LOCATION FOR TECH COMPANIES TO GROW AND FOR GRADUATES TO SATISFY THEIR AMBITIONS.

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