



# CONNECT FOR A HEALTHY FUTURE

*Understanding the potential and growth opportunities in Sweden's  
booming connected health ecosystem*

# DIGITAL SOLUTIONS FOR GLOBAL HEALTH CHALLENGES

The digital revolution has altered the way society functions, individuals work and socialise, and how business is conducted. It has also created opportunities and changes in traditional ecosystems that were previously not thought possible. Connected health is an area of growth that has gone from science fiction to reality at an unprecedented pace. And Sweden has swiftly emerged as a global disruptor and innovator.

## DIGITAL TECHNOLOGY POWERING LIFE SCIENCE

Sweden is a country of innovation and entrepreneurship, with an extensive tech ecosystem that is playing a significant role in redefining key industries in an environment that supports collaboration between start-ups, established companies, academia, and industry.

And now technology and digital competence is combining with Sweden's world-leading life science, establishing Sweden an early adopter for using digital healthcare tools in society. This has also established a breeding ground for health-tech companies that strive to increase quality of care and patient engagement by using the power of digital tools.

The Swedish population have a history of embracing and testing new digital solutions, and this has been proven even further with figures showing that during the pandemic digital primary care visits reached 11 per cent, with the number of digital consultations doubling in 2020 from 1.2 million to 2.4 million.

While progress is happening fast, Swedish, and global healthcare systems are facing unprecedented pressure, with ageing populations, an increase in NCDs, and the need to deliver more services with less resources. Sweden's booming health-tech sector is looking to solve the most pressing issues facing healthcare today, the need for global collaboration both in Sweden and in international markets is essential to scale up and make a wider impact.

## HARNESSING TECH TO SOLVE CRITICAL HEALTHCARE CHALLENGES

Data, digital tools, and connectivity are changing the way healthcare is being accessed, planned for, and delivered. It is also facilitating research and development that is leading to solutions that are able deliver care when and where people need it, improve outcomes for patients, and alleviate the burden on traditional care pathways.

Telehealth solutions allow patients to receive tailored consultations without having to leave their home. This is challenging the way providers of healthcare view outcomes and assess how effective care has been; number of beds in hospitals is quickly becoming an obsolete way of measuring impact. Digital health consultations give the doctor the ability to access, collect, and write medical notes, triage, and consult the patient, and the patient visibility of their medical data. Patients can avoid hospital visits, both reducing the pressure on hospital resources, but also limiting the risk of infection spread. Additionally, research indicates that accessing services digitally has an overall positive impact on patients' quality of life.



**99%**

E-prescription rate



**80%**

Used electronic health services in 2021



**1177**

1177 Vårdguiden is a digital consumer health guide and phone service, known by 99% of the Swedish population



**#1**

In telemedicine usage in Europe at 11% of the population



**559 m**

Venture capital funding for Swedish digital health start-ups (health platforms and medical devices), 2021

Sources: OECD, Ipsos, CB Insights, Industrifonden, Dealroom

**TELEMEDICINE:  
THE (NOT SO) NEW FRONTIER**

The proliferation of video in our everyday lives seems relatively new, and globally, the use of video consultations in the healthcare sector has taken off since the pandemic restricted person-to-person contact. However, for Swedish medical professionals, video is not new. For over 20 years, Karolinska University Hospital has been using internal video consultations between specialists to triage patients across departments and geographies. They have also been working across time zones to offer x-ray imaging consultations at all times of the day.

Sweden’s vast geographical size and sparsely spread-out population, particularly in the north of Sweden, has been a catalyst for innovative thinking. In the 1990s, the Centre for Rural Medicine was established to understand and meet the needs of isolated communities and individuals, and the Centre conducted Sweden’s first video consultation giving access to specialist care that was previously unavailable.

Today, telemedical care can be offered at local *cottage hospitals*, enabling a patient to have a remote heart ultrasonography with a cardiologist listening to their heartbeat from afar, followed up with post-scan consultation over video-chat.

While video technology has been available and used for some time in some parts of the country, the concept of patients taking primary care visits online is a relatively new one, but it is on the rise in Sweden. The pandemic has been a catalyst for change and in just two years, the number of primary care visits taken online has gone from almost non-existent to 11 per cent

being digital in 2021.\* This digital leapfrog has given both medical professionals and patients the exposure and confidence to use connected health solutions.

**KEY PLAYERS IN A  
FLOURISHING SECTOR**

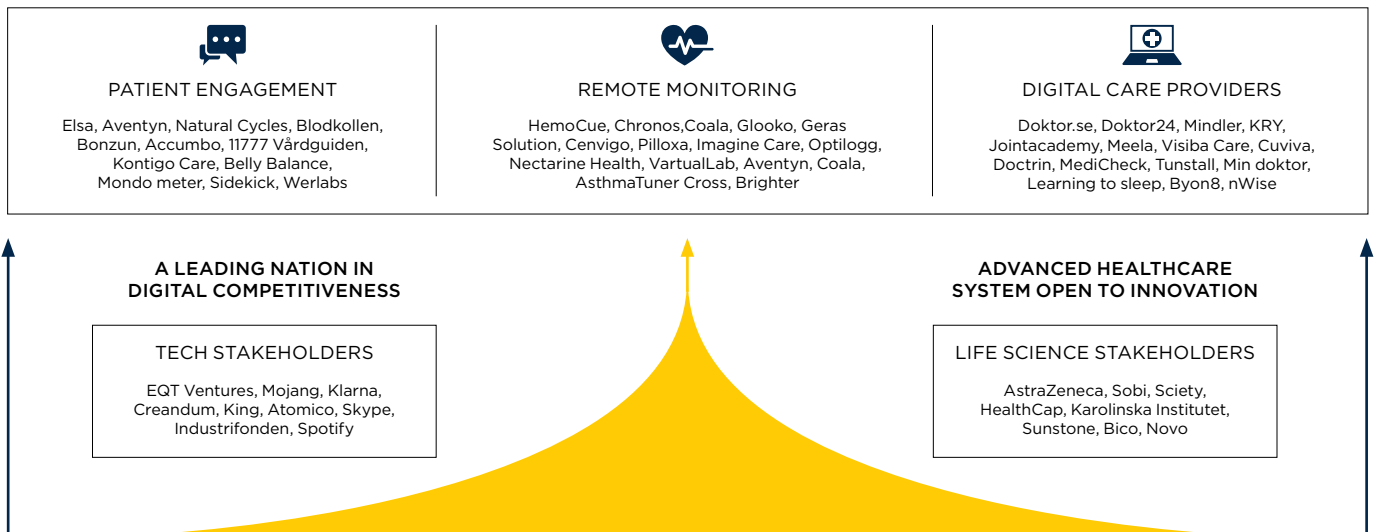
Many of Sweden’s digital care providers have established a strong presence in the domestic market and this has enabled them to grow into other European markets. Leading companies like *Kry*, *Doctrin*, and *Min Doktor* have already made the leap, paving the way for further telehealth providers to expand.

But innovation is still a key driver in the connected health sector with early disruptors now moving away from being exclusive video consultation providers to offering full-platform solutions. Development is seeing full-platform solutions for medical record collection, writing, and access, and triaging patients to the right level of care using AI solutions.

The pioneering technologies have opened the door for other branches of telehealth outside of primary care to develop. Swedish companies are providing access to consultations for specialist care, migraine support, sleep issues, chiropractic, and more. The need to continue delivering services during the pandemic created the perfect testbed for novel solutions that could meet the needs of both the healthcare sector and the public – and that momentum continues to gain traction.

\* SKR, Delredovisning av primärvårdens digitala utbud (2020)

**SWEDISH HEALTH-TECH INNOVATION +300 COMPANIES**



Note: Companies listed are only a selection and do not represent all present in the market

## INNOVATIVE APPROACHES TO CHRONIC DISEASE CHALLENGES

The rise of non-communicable diseases (NCDs) in both developed and emerging countries is significant and globally 85 per cent of all health-care costs are now allocated to chronic disease care.\* An ongoing core challenge facing doctors has been the lack of clarity around patients' health in between visits, but now digital solutions are providing patients with home screening solutions, allowing doctors to monitor their disease from a distance.

Implementing this technology has shown to improve quality of life for patients, removing the need for constant hospital visits and the associated risks of travelling and infection exposure. It also provides doctors real-time data and analysis into patients's health, enabling them to deliver tailored and timely care.

Remote monitoring technology is shifting many aspects of healthcare from reactive to preventative. When patients can measure, visualise, and track their blood pressure, blood sugar, body temperature, and general health on their phone, this creates a positive feedback loop for improvement. It also empowers the patient to become actively involved in the management of their disease, learning how to make lifestyle changes to improve their progress.

Sweden's national approach to this means that all regions across the country are piloting or have fully implemented remote monitoring devices for NCDs. There are also several private services entering the market, offering out-of-pocket services for measuring blood pressure, health failure, and more.

\* Vårdanalys, VIP i vården? Om utmaningar i vården av personer med kronisk sjukdom (2014).

## DATA-DRIVEN TAILORED CARE

In today's world, data is gold, and Sweden has a wealth of it in the National Patient Quality Register and biobanks, and importantly, the tools to mine it. The effective use of data is beneficial for hospital operations and resource allocation, but primarily it is proving most powerful when used for patient engagement and treatment. The region of Halland on Sweden's west coast has changed their operational model to one based on *information driven care*, making it a world leader in the race to effectively use AI in healthcare.

The test bed initiative, *Edge Lab* provided by AI Sweden, uses machine learning algorithms which learn from twin-datasets, overcoming otherwise privacy-related obstacles. This project hopes to identify barriers and enablers for integration and national implementation of AI in healthcare, investigate how privacy-preserving AI and data-driven insights can support current healthcare practices, and evaluate ethical and legal implications and pathways to the successful implementation of AI in healthcare.

But data itself is not the whole answer. The use of data must involve cross-sectional practice, with cross-talent collaboration with engineers and medical practitioners coming together. International collaborations are also imperative to be able to access and compare the right data across various genetic and environmental aspects. The Swedish Public Health Agency (E-hälsomyndigheten) has started this important work, collaborating with the European Health Data Space and data sharing across the Nordic countries. No single country has all the data, but great advancements can be achieved through cross-network working.

## IN THE SPOTLIGHT: IMAGINECARE

### What critical problem for the healthcare system does Imagine Care solve?

ImagineCare is Sweden's market leading remote self-monitoring company, measuring patient's health values in their own home while still guaranteeing the same medical security delivered in hospitals. The platform strives to improve health outcomes with fewer admissions, provide enhanced security, reduce the cost of care, and make better use of healthcare professional resources.

### What patient needs do ImagineCare strive to address?

ImagineCare is primarily used for people with complex medical needs, those living with chronic diseases such as heart disease, diabetes, and asthma. Their solution can also help patients being treated for cancer and respiratory conditions including Covid-19. The full-scale roll out of ImagineCare's solution in two Swedish regions is setting new standards for providing a unique remote monitoring experience both in Sweden. And they now have their sites on international expansion.

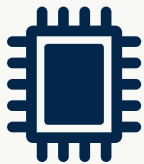
*"We have just begun our international expansion journey and Business Sweden has proven to be an important partner that has already helped us find opportunities for interaction with international decision-makers in both the UAE and Europe. Export coaching combined with our participation at the Connected Health Seminar at Expo2020 was a great opportunity to introduce our solution to the UAE market. We have already signed a cooperation agreement with Founda Health in the Netherlands."*

– Masoud Jadidi, Executive Vice President International, ImagineCare



# WHY SWEDEN?

Sweden's strong digital foundation is key to the booming connected health segment. A digital ready population open to testing and embracing new technology coupled with an innovative and agile research and test-bed environment, Sweden's life science sector has vast potential.



## TECH SECTOR

- 1 – Sweden's EU innovative country ranking (European Innovation Scoreboard, 2021)
- 60% of all new jobs in Sweden are in IT intensive sectors (Tech Sweden, IT-kompetensbristen, 2020)
- Stockholm is the 2nd largest unicorn factory after Silicon Valley (Atomico, State of European Tech 2021)



## LIFE SCIENCE

- Karolinska Institutet ranked sixth globally for medicine in 2020/2021 (2020/2021 QS World University Ranking)
- 2nd highest number of practicing researchers in the world per capita (OECD, 2021)
- 60%+ increase in Sweden's life science GDP export in the past five years (SCB, 2021)



## COMBINED IMPACT

- 99% of all prescriptions in Sweden are digital (E-hälsomyndigheten)
- 11% of all primary care visits are digital (SKR, 2021)
- Vision e-health 2025 goal is to be **best in the world at using the opportunities offered by digitalisation and eHealth**

# OPEN FOR BUSINESS

**The Swedish life science is a dynamic and thriving ecosystem, with an open door for collaborations with global stakeholders.**

To provide solutions to the vast and ongoing global healthcare challenges, to meet the UN Sustainability Development Goals for health, and to improve outcomes for patients, life sciences actors must work together to leverage data and technology.

Sweden's position as digital front-runner, leading innovator, and open and transparent partner set it apart on the global stage. The life science sector is already proving that this combination can accelerate growth in one of the fastest growing sectors in healthcare, connected health.

And now is the time for international actors to ramp up their presence and influence to accelerate the connected health segment.

Our teams in Sweden and around the world can put you at the heart of the booming life science ecosystem .

## CONTACTS



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