A concerted effort for excellence, long-term competitiveness and increased patient benefit

National life sciences strategy

New objectives

Government Offices of Sweden

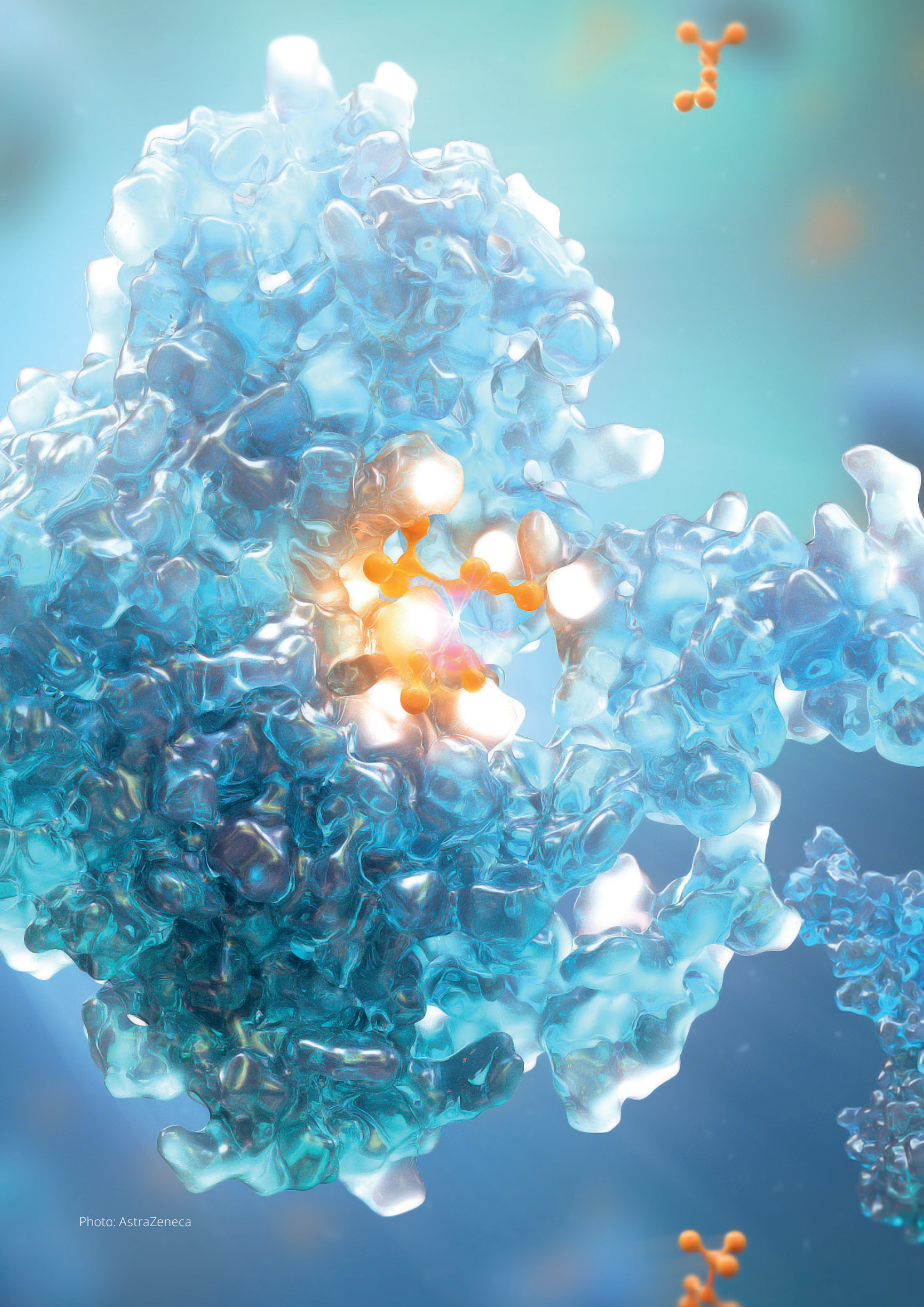


Photo: AstraZeneca

Foreword

Sweden has a proud history of research and development in life sciences. A country where groundbreaking research, higher education and innovation in the life sciences has been driving societal development and welfare while strengthening industry's competitiveness and tackling global societal challenges for some time. Medical breakthroughs and award-winning innovations help save lives and improve health.

As a strong research nation and also highly ranked innovation nation, Sweden has excellent prospects of being world-class in life sciences. But in a time when we are becoming more and more dependent on advanced equipment and infrastructure, geopolitical tensions are intensifying, and global competition for talent and foreign investment in research, innovation and production is rising, we cannot simply rest on our laurels. The Swedish Government has high ambitions for the life sciences area, with the ultimate goal for Sweden to become a leading life sciences nation, thereby giving Sweden access to innovative treatments and health-promoting interventions while strengthening our resilience and competitiveness. Investments in excellent research for groundbreaking technology, along with advanced equipment and infrastructure, lay the foundation for further advances.

The life sciences industry is one of Sweden's largest export industries and includes both small and big companies in pharmaceuticals, biotechnology, medical technology, diagnostics and laboratory technology. The Government holds the view that it should be easy to run a company, attract people with the right skills, and grow as a company in Sweden. Unnecessary red tape that can get in the way of research and development needs to be cut. Regulatory frameworks that support innovation, and also ensure that the innovations introduced do not compromise patient safety, are important.

Sweden has a long tradition of collaboration between higher education institutions, industry and the health care system – a model that has been key to our success in the life sciences and will continue to be a decisive factor moving forward. Today, we face many challenges that affect our health – from climate change, pandemics and antimicrobial resistance to an increase in widespread diseases and mental ill health. A well-developed life sciences ecosystem with good collaboration within and between sectors and disciplines will be crucial.

Access to interoperable data and a robust digital infrastructure for health data for both research and the health care system are priorities for the Government, and fundamental to development in the life sciences sector continuing. Furthermore, resilient digital infrastructure opens doors for continued development in precision medicine as well as more – and more advanced – clinical trials and research.

While the rapid development in groundbreaking technology such as AI, biotechnology and quantum technologies presents great opportunities, it also raises the need for new skills and working practices throughout the sector. In the Government's view, Swedish research into emerging and groundbreaking technologies should be safeguarded.

The Government wishes to stress the importance of a clear aim of excellence characterising both research and education in all areas and strengthening already outstanding environments and strong areas or research while safeguarding the freedom of researchers to initiate their own research. Without its own extensive and high-quality research and innovation, Sweden will not be able to fully exploit its achievements in these areas. Incentives and tools to unlock the potential of this research, and to commercialise it, need to be strengthened. Basic research is also fundamental to being able to manage health challenges in the long term.

Long-range investments in research infrastructure such as SciLifeLab, Max IV and the European Spallation Source (ESS) provide unique opportunities for research in the life sciences area and other areas of importance to life sciences, and are a strength in attracting talent to Sweden. As an attractive country for researchers, entrepreneurs and experts, we can stimulate growth, investment and technological development that promotes Sweden's welfare and competitiveness.

Complex challenges demand close and strategic cooperation and open dialogue – not only within our own borders but also at the Nordic, European and international levels in order to achieve common goals and meet challenges. The Government wants to actively pursue policy within the EU that strengthens competitiveness and makes it advantageous to conduct research into, develop and produce pharmaceuticals and medical devices in Sweden and in the EU.

It is crucial that the results and innovations developed from this research are also implemented in Sweden's health care system. This requires close cooperation between all stakeholders in the sector. As new solutions are implemented and contribute to health care becoming more resource-efficient and safe for patients, it is crucial that long-term sustainability is also taken into account. This is an important aspect of creating the basis for health and well-being throughout life, while the sector's green transition contributes to strengthening Sweden's brand and competitiveness. The green transition requires innovation and new technologies, as well as entrepreneurship and intrapreneurship.

Sweden's National life sciences strategy serves as a long-range framework, and the strategy's eight priority areas remain the starting point for this update. The updated objectives indicate the Government's policy for the development of the sector and aim to encourage a mobilisation at the local, regional and national levels. By being an active partner in both Sweden and the EU, the Government wants to contribute to a sustainable and advantageous development of Sweden's life sciences.

Ebba Busch
Minister for Energy, Business and Industry and Deputy Prime Minister

Johan Pehrson
Minister for Education

Jakob Forssmed
Minister for Social Affairs and Public Health

National life sciences strategy
Updated autumn 2024

In the National strategy and this update, life sciences is about solving the societal challenges linked to human health. The sector comprises research, higher education and innovation, the development of pharmaceuticals, medical devices and treatments, as well as prevention, implementation and monitoring.

In this update, the National strategy's current priority areas (1–8) are given updated introductions and objectives, which can be found below.

Photo: GE Healthcare

Contents — Priority areas

1. Structures for cooperation 7

2. Unlocking the potential of health data for use in research and innovation 9

3. Responsible, secure and ethical policy development 11

4. Integration of research and innovation into health care 14

5. Technology for better health, empowerment and independence 17

6. Research, innovation and research infrastructure 19

7. Supply of skills, talent attraction and lifelong learning 22

8. International attractiveness and competitiveness 24

1. Structures for cooperation

The life sciences sector's stakeholders all have different tasks and priorities. But between them, there is a large measure of interdependence. Cooperation and collaboration are very often fundamental to achieving the goals of the individual stakeholder's own activities. The common endeavour is to improve health. In order to pursue this work as efficiently and effectively as possible, it is crucial to avoid parallel structures. Through cross-sectoral work, Sweden's strengths can be exploited and difficulties overcome. Sweden has excellent prospects for further strengthening the development of its life sciences sector in the regional, national, Nordic and European contexts. Monitoring implemented initiatives will be important so that future work can be regularly aligned.

The stakeholders in the life sciences sector include higher education institutions, government agencies, industry and the health care system. At the centre of all treatment is the patient, and for this reason the role and participation of patient organisations in life sciences is essential. Furthermore, the patient's relatives and other civil society actors also have a contribution to make through harnessing their potential and perspectives. The key to ensuring that renewal occurs, that innovations can be developed, spread and ultimately benefit society and the individual is bridging the gaps between organisational structures and moving closer to each other. As part of this, the Government has established an advisory group with representatives from across the entire sector as an important step in developing cooperation partnerships and establishing a common understanding in the sector, in close dialogue with the sector's stakeholders.

In order to safeguard our welfare, jobs and growth, Swedish stakeholders need to work together nationally, but also with others at the Nordic, European and international levels. It is when these stakeholders' collective knowledge and skills and common priorities come together that positive synergies can arise, for example in the form of new research results, products and services.

One example of an area where the concerted effort of stakeholders is crucial is in the area of clinical trials. Sweden can then continue to develop as an attractive country for clinical trials, and to enable early access to new treatments – for the benefit of patients but also for knowledge development in the health care system.

Photo: SciLifeLab

Objectives

1.1 National coordination in life sciences

The Government's Life Sciences Office was set up within the Government Offices to coordinate the Government's internal work in the area and to act as a point of contact for external stakeholders, including through the Government's advisory group for life sciences. The Government is aware that the sector's stakeholders play an important role in initiating and designing feasible efforts that are useful to Sweden's development in life sciences.

1.2 Partnerships for regional and national mobilisation

International competition for investment and pole position in the development is tough. At the same time, care needs related to chronic diseases and mental ill health, for example, are rising in parallel with being able to treat more and more conditions today. This both increases and alters the needs for cooperation and expertise. The Government assesses that – through collaboration and partnerships, within and outside the life sciences – Sweden's areas of strength can change the sector and lead to new products, services, models and methods for prevention and treatment. Sweden has a strong tradition of partnerships through collaboration and cooperation – regionally, nationally, and across stakeholder boundaries. When regional and national priorities are connected to Nordic, European and other international priorities, positive synergies can arise.

1.3 National partnership for clinical trials

The Government intends to ensure that a clear structure for a national partnership for clinical trials exists, thereby enabling more high-quality clinical trials to be conducted in Sweden. Conditions need to be improved and the quality and implementation capacity need to be enhanced. All stakeholders in the life sciences area need to work in concert, and this work needs to be developed so that excellence, patient safety and sustainability become integral perspectives. Greater cooperation and shared learning through partnership are important means of achieving a well-developed and effective working practice, where the parties set common goals and benefit from the strengths within the Swedish system.

1.4 Nordic region – a world-leading stakeholder in life sciences

The Government assesses that expanding Nordic cooperation in life sciences can enhance Sweden's international competitiveness. Working together for greater harmonisation of processes and working practices facilitates the implementation of new solutions.

2. Unlocking the potential of health data for use in research and innovation

Health data is an essential resource for life sciences research. Sweden already has unusually good conditions for conducting research and innovation based on health data. New digital solutions and new opportunities for using the data, in particular with the aid of artificial intelligence, can radically improve the conditions for providing effective, accessible, personalised and preventive health and medical care through research and innovation. By using more data-driven analyses, efforts can be adapted and monitored to achieve the best possible effect.

In order to expand collaboration and unlock more potential in Sweden's health data, appropriate cooperation structures, innovative technical and methodological solutions, different types of supporting infrastructure as well as the legal basis and funding structures are all needed. Therefore, a national digital infrastructure for health and medical care has been initiated. The work to make health data available to the health care system and research aims to improve the quality of care and patient safety and strengthen the patient's position while reducing the administrative burden for those working in health care.

When used correctly and when privacy protections are included, databases that contain personal data can contribute new knowledge about heredity and the importance of lifestyle in the development of health conditions. We urgently need to enable certain databases to be built, with the aim of creating a data material for various research projects in areas of great scientific value. Similarly, there is great value in being able to follow individuals over time, and to combine different types of data such as register data and biological data, in order to investigate correlations and measure the effects of treatments.

It is crucial that every individual can feel confident that their data are only processed in a way that protects their privacy. This requires that the data be protected from unauthorised access. It is also important to include protections for intellectual property rights and trade secrets.

Photo: SciLifeLab/Karin Nedler

Objectives

2.1 A national digital infrastructure in the health care system

Sweden's health care system was digitised early on, but the basic infrastructure for sharing health data has not been developed as rapidly. The Government has tasked a commission of inquiry with facilitating the introduction of a national digital infrastructure for the entire health care system, for which central government will take a greater share of the responsibility. Health data is to be available throughout the entire health care chain, for all forms of health care. The national digital infrastructure and the European Health Data Space (EHDS) will enable the sharing of health data for the needs of the health care system. The EHDS will also enable the sharing of health data from multiple sectors, including the health and medical care sector and the social care sector, for the purposes of research and innovation, for example. The Government assesses that an effective implementation of the EHDS is important for Sweden's competitiveness in life sciences.

2.2 Increased use of health data in research and innovation

The use of health data is a prerequisite for strengthening Sweden's position in clinical research and innovation. The Government therefore wants the use of health data for research and innovation to increase, while maintaining privacy protections, so that these data can assist in producing high-quality clinical research, thereby improving the conditions for prevention and the treatment of patients, and for the development of cooperation with industry. It is of great importance that infrastructure, legislation, guidance and other support contribute to the effective, safe and ethical use of data from different sources. Register-based research and the possibility of processing personal data in research databases provide unique opportunities to answer urgent research questions in life sciences as well as many other disciplinary domains, and to develop new and innovative solutions.

2.3 Infrastructures for clinical research with interoperable data

In many instances, access to data from registers in the health care system is fundamental to providing good, person-centred care, clinical research and clinical trials. The Government's view is that the infrastructures for collecting biological material for health care and research are important. Sweden's various registers and biobanks constitute a unique resource for conducting research, developing preventive interventions and treatments, and are a prerequisite for the implementation and increased use of precision medicine.

3. Responsible, secure and ethical policy development

Technological development has the potential to provide new solutions to the diagnosis and treatment of various conditions, but also to the development of various forms of preventive interventions. At the same time, it raises important questions that need to be addressed. Climate change is also affecting human health. Its effects on public health are expected to increase globally and in Sweden, primarily by amplifying existing risks and vulnerabilities.

An ethical and responsible approach needs to be applied to the development, use and spread of new technologies, as well as to the development of regulation in this area. The same is true when methods, processes, approaches, working practices and the organisation of work are adapted to new conditions.

This also means being aware that technological development and the implementation of technology and new policies need to contribute to an environmentally, socially and economically sustainable society as well as to strengthening competitiveness.

It is a constant challenge to ensure that development in regulation keeps up with the rapid pace of technological development. It is therefore important that, as far as possible, new legislation and other regulation should be technology-neutral, cater for the future and not just focus on solving today's problems; and that regular sharing of what has been learnt about challenges and opportunities is encouraged. Being actively engaged with the legislative process within the EU is greatly important.

One area experiencing strong development is precision medicine, which is also called individual-based or personalised medicine. Precision medicine aims to provide the patient with medical care and treatment that is tailored to the patient's own circumstances and needs, which can make a big difference for patients with rare health conditions and cancer, for example. A connected and somewhat overlapping area is precision health. Precision health is a broader area that, besides precision medicine, includes preventive interventions at both the individual and group level, which can be categorised as preventive health care and work with public health, for example.

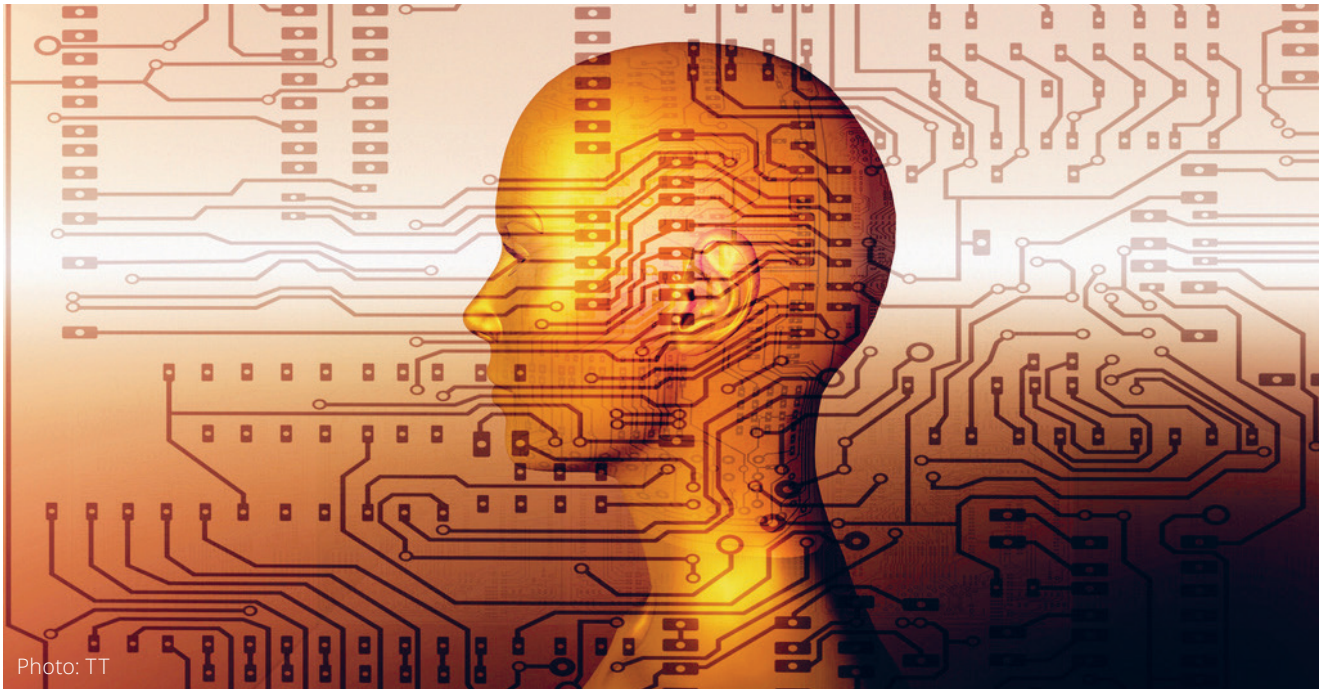


Photo: TT

Objectives

3.1 Continued development and the equitable implementation of precision health and advanced therapies

Sweden aims to be a pioneer in the implementation of precision health and advanced therapies in care delivery. In the Government's view, the implementation of precision health and advanced therapies should be equitable, gender-equal, cost-effective and offered based on the individual's needs and circumstances in all parts of the country. This requires regulatory frameworks and suitable structures that enable the continued development and implementation of, for example, new methods for early detection and diagnostics, as well as bioinformatics and intelligent, digital decision support. Having remuneration systems and risk sharing in place that encourage innovation and the subsequent implementation of new technologies is also of great value.

In the Government's view, technological development and the introduction of new methods and processes require broad cooperation and consensus between all relevant stakeholders. Furthermore, to achieve an effective and equitable implementation, the ethical and legal basis, and the organisational and methodological conditions for the implementation, need to be taken into account. Various forms of cooperation partnerships can be an important tool in this.

The Government also considers that continued development and implementation in this area must be done strategically. To achieve this, there are long-range investments in the area and national coordination that is scalable and thus can be adapted to future developments.

3.2 Preventive health interventions at the individual and system levels

Non-communicable diseases such as cardiovascular disease, diabetes, cancer, and mental illness remain major public health challenges, but it is possible to influence the development of these conditions. In the Government's view, Sweden should promote interventions to prevent the development of ill health and disease as well as initiatives to reduce the disease burden and prevent relapses. Innovations – including new technologies along with effective and appropriate forms of governance and funding – play a crucial role in the development of preventive methods and working practices. Preventive interventions are usually cost-effective over time for both society and the individual.

3.3 Regulatory and technological developments in alignment

The Government notes that the continuous and rapid development in the life sciences area requires a capacity to regularly review the regulatory frameworks governing this area in order to promote the dynamic and safe development of pharmaceuticals and medical devices, and to ensure that patients and service users have access to safe and effective products and services.

3.4 Research in regulatory studies useful in the development of new pharmaceuticals and new medical devices

The Government sees research and knowledge development in the area of regulation as an important tool for creating better conditions for developing, evaluating and improving the regulations and their application. In life sciences, it can contribute to safety in the implementation and use of products and technologies as well as cost-efficiency in processes.

3.5 Better conditions for technology in social services

Uncertainty surrounding the legal basis for the use of digital technology in social services has been identified as a key obstacle to introducing technology into social services' activities. The Government's view is that clear legislation and easily accessible support can help pave the way for stakeholders to develop and introduce technology in social services.

4. Integration of research and innovation into health care

All work in the life sciences ultimately aims to improve human health. Research, development and implementation all contribute to better solutions for preventing and treating diseases, alleviating suffering and making everyday life easier. Clinical research is central to development within the life sciences. But without its implementation in health and social care, this new knowledge does not reach its full value. The road to patient benefit can sometimes be long, and it is important to find ways to overcome the difficulties so that valuable medical discoveries and evidence-based methods reach patients.

It is in the delivery of care that many innovations that improve care and treatment must be tested and developed. This requires cooperation between the health care system and the stakeholders involved in research and development. New solutions and therapies should not just be seen as costs. The benefit they contribute should also be taken into account, while utilising public resources prudently. A well-developed health economics perspective can help to increase opportunities for the health care system to introduce new methods, techniques and therapies. This also requires a willingness to implement new knowledge and new solutions within the health care system and opportunities to do so. Furthermore, the health care system needs expertise to be able to use new and further developed pharmaceuticals, medical devices, diagnostics, AI tools and other innovative treatments so that these things can benefit patients.

Clinical trials are crucial for the development of new pharmaceuticals and medical devices. The declining trend in number of clinical trials in Sweden is therefore worrying. Without knowledge about their efficacy and safety, pharmaceuticals and certain medical devices cannot be approved for use. Clinical trials need to be kept up. More high-quality trials should be conducted and located in Sweden, to attract investment in research and development and to protect our industry, but above all to ensure that effective pharmaceuticals and treatments reach patients with common as well as rare health conditions.

Photo: AstraZeneca

Objectives

4.1 More high-quality clinical trials

High-quality clinical trials are a prerequisite for patients to get early access to innovative pharmaceuticals and medical devices. Clinical trials are also essential for the health care system to be able to contribute to the development of new products, and crucial for developing treatment protocols. The Government's objective is to significantly increase the number of clinical trials in Sweden, and to encourage this through securing partnerships for clinical trials for example. Sweden aims to be a leading international player in research and innovation in the area. Sweden aims to be an attractive country for research collaborations where patients with both common and rare health conditions have the opportunity to contribute to and benefit from progress in medicine. Significantly more patients, regardless of gender, form of care and place of residence, should be offered the opportunity to participate in clinical trials and other clinical studies. It is therefore crucial that the regions and other health care providers create the conditions for this to occur by ensuring that care processes and infrastructure provide scope for clinical research and clinical trials. The Government encourages these conditions.

4.2 More research in everyday clinical practice

It is important that there are good opportunities to combine clinical practice with research in all parts of the health care system, both in primary care and specialised medical care. The combination of, and access to, clinical and research expertise, and forums where these areas of expertise can collaborate, is important for the continued development of Sweden's health care system. The Government welcomes regions and municipalities participating in research within the health and medical care for which they are responsible. It may also be valuable to create equivalent conditions in the activities of social services. Incentives and good options for combining clinical practice and research generate positive effects for those who deliver, and for those who receive, health care. All-important continuing professional development is also achieved through enabling a range of health care professions to contribute to clinical research. Monitoring the research that the health care system participates in assists in acquiring a better picture of its quality.

4.3 Implementation of research findings and innovation in clinical practice

The successful implementation of new knowledge and innovations requires collaboration between higher education institutions, industry and health care authorities, as well as predictable and effective regulatory frameworks. Structures for development in the early phase and later implementation, for example in the form of test beds, can be important steps along the way. In the Government's view, it is crucial that the implementation of new research findings in clinical practice is equitable. Only after an equitable implementation of new research findings and innovations in clinical practice can these findings benefit patients, leading to increased patient benefit. It is also important to monitor their implementation. The existing systems for knowledge management should also provide opportunities to include new innovations and new knowledge without delay.

4.4 Fighting antimicrobial resistance through new working practices and new products

Access to effective antibiotics protects the community from health threats and is a prerequisite for modern health care and saving lives. The work to fight resistance on the human side should also be based on the One Health perspective. New, innovative methods and models for the development of antibiotics and appropriate models for access are all key components in this work. Similarly, prevention – in terms of health care hygiene, vaccinations, diagnostics, awareness of the problems and the rational use of antibiotics – can be strengthened through innovation, product development, technology and methods.

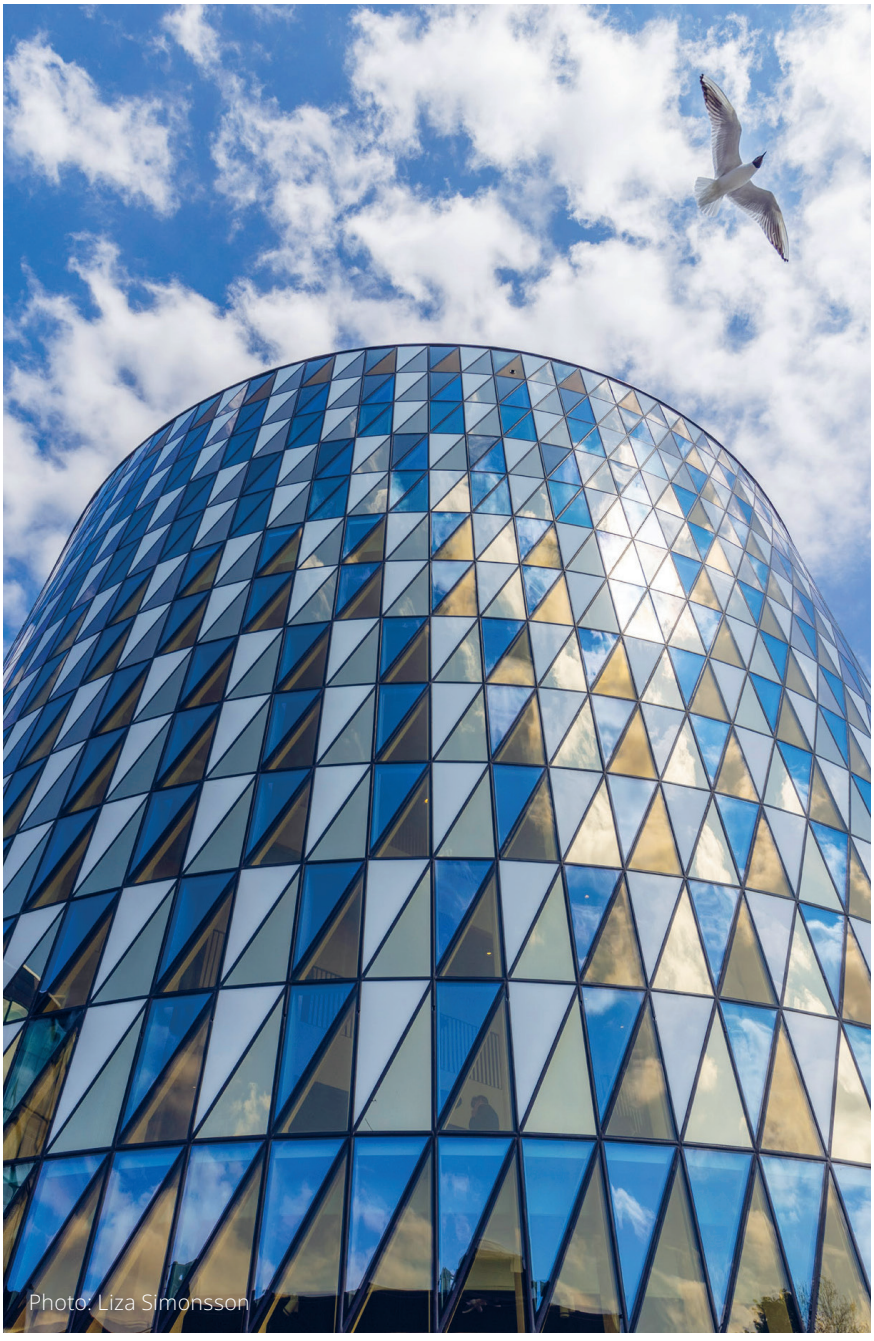


Photo: Liza Simonsson

5. Technology for better health, empowerment and independence

Emerging and strategically important technologies are more and more central for global geopolitical competition, and technological development thus has foreign policy and security policy dimensions. Sweden also needs to take these dimensions into account along with our economic security, especially when it comes to international collaborations and questions related to AI, bio-technology, quantum technology and advanced infrastructure. Today, many countries are acting more and more on the basis of a political agenda when it comes to these questions. The big achievements in strategically important technology are also spilling over into adjacent areas, such as the life sciences in this case. Advances in AI and data processing, for example, have led to fast and effective imaging diagnostics. New materials are important for medical devices. New solutions create opportunities for simplifying everyday life for patients, service users and health care staff, in the health care system, dental care and social services.

With curiosity and courage, the health care system, dental care and social services bear a great responsibility to make the most of new innovations in their activities, taking care with public funds to implement them prudently. A major challenge for many small and large companies' growth is the opportunity to bring innovative solutions and products to market, where being able to get a first customer is central for the continued development of the activity.

Using new products and technologies requires knowledge and skills – to contribute to the development of the products and for the correct handling of the products. The individual patient and service user needs the right information for correct use, but also needs to be able to provide feedback for the future development of new products. Staff in health and social care also need knowledge to be able to support the patient or care recipient in their use of the product.

In the updated strategy, area 5 has been revised and broadened to better suit what may be seen as today's challenges. The area now includes both technology and techniques for health, empowerment and independence, i.e. for health and medical care activities as well as for the social services area.


Photo: LIU

Objectives

5.1 Development and implementation of new medical technology for tomorrow's care needs

Sweden has a prominent role in the area of medical technology and in vitro diagnostics. The new regulatory frameworks governing medical technology and in vitro diagnostics have entailed challenges for the entire sector. For many companies, and especially small companies, it can be difficult to bring their products to market. The Government's view is that the medical technology area is extremely important for the entire sector, and the Government has seen a need to support companies in meeting regulatory requirements through, for example, early stakeholder dialogue, and through directing attention to new technologies through innovation-friendly public procurement. Furthermore, ensuring that there are good options for certifying new products through notified bodies is extremely important.

5.2 Development and implementation of groundbreaking technologies

Sweden has multiple areas of strength in the areas of both technology and its applications. Today, many countries are strengthening their positions through investing in research in groundbreaking technologies. Within the EU too, the level of ambition for innovation in strategic areas of technology has also been raised. The Government welcomes the development and implementation of new groundbreaking technologies in clinical research and care delivery, and is enabling cutting-edge research while promoting the sustainability, the supply of skills and resilience of the health care system. Applied correctly, new technologies such as AI, biotechnology and quantum technology can improve and facilitate diagnostics and treatment while saving time and care resources.

5.3 Technology and technology development for social services

One of the obstacles to introducing more technology into social services' activities is insufficient knowledge of what the technology has to offer for these activities, or what conditions ought to be in place to derive the maximum benefit from the chosen technology. This also constrains technology development and companies' prospects for developing new products. The Government therefore sees it as urgent that technology in social services is monitored and evaluated based on functionality, risks and benefits, as well as the impact it has on these activities, and that this knowledge is communicated.

6. Research, innovation and research infrastructure

When it comes to increased investments in research and development, the Government's focus is on research infrastructure, excellence in research, and research and innovation for groundbreaking technologies. A greater focus on basic research is contributing to the development of the life sciences area. This requires a continued focus on high-quality, excellent and world-class research at Swedish universities and higher education institutions, and strong incentives for collaborating with the surrounding community. In order for Sweden and Swedish industry to benefit from major international investments in research and development, Swedish research and Swedish companies must have opportunities to collaborate within European and global innovation and knowledge initiatives where tomorrow's leading-edge technology is developed.

Research and innovation in the life sciences area are entirely dependent on access to various kinds of research infrastructure. This can range from supporting structures in the health care system to enable clinical studies, to advanced equipment in the form of various measuring instruments or large installations. Advanced infrastructure is vital to Sweden's research in life sciences and constitutes an important platform for cross-sectoral cooperation partnerships. As more and more data are needed and used for research, dependence on computational resources is rising, for example for research and development that uses or produces AI tools. An example of such an initiative is the National Academic Infrastructure for Supercomputing in Sweden (NAISS). Research and development benefit from international cooperation around advanced infrastructures such as the European Spallation Source (ESS) and Max IV, for example for the development of new medicines and more effective antibiotics. For the development of new pharmaceuticals, diagnostic methods and vaccines, research and industry also need access to various infrastructures for translational research. In recent years and in collaboration with industry and other stakeholders, the Government has also invested in innovation hubs such as NorthX Biologics and CCRM Nordic, which can serve as meeting places for stakeholders in their collaborations in research and innovation.

Photo: SciLifeLab


Photo: AstraZeneca

Objectives

6.1 High-quality, excellent and world-class research in the life sciences area

In the long term, basic research is fundamental to being able to address health challenges. Cross-sectoral research and innovation contribute to the sustainable development of health and well-being. In the Government's view, Swedish research in the life sciences area is important and generates opportunities for national and international cooperation, and good access to highly educated staff and research infrastructures.

6.2 Excellent research infrastructure in the life sciences area

Research and development requires access to high-quality research infrastructure in the form of both supportive structures in health care and advanced equipment. As the forefront of research moves forward, in the Government's view it is important that Sweden can meet future infrastructure needs and that Sweden's position as a leading research nation in life sciences is retained and developed.

6.3 Increased and broader use of research infrastructure

National research infrastructures, where advanced technologies can be utilised, need to be coordinated and made widely available. The Government's view is that Swedish research infrastructures – research-supporting infrastructure as well as advanced equipment – should be utilised more. The users should represent a broad range of stakeholders from higher education institutions as well as industry, and the research infrastructures should stimulate cross-sectoral cooperation partnerships.

6.4 Infrastructures for data-driven research and innovation

Research and development in life sciences is dependent on digital infrastructure. This includes computational resources for calculations and analyses, cost-effective data storage, advanced user support and increased capacity in networks for digital communication in order to enable the processing of greater quantities of increasingly complex data. The Government therefore sees the value of infrastructures for research in this area.

Photo: Ann-sofi Rosenkvist/Visit Sweden

Photo: AstraZeneca

7. Supply of skills, talent attraction and lifelong learning

The life sciences sector is knowledge-intensive. In a globalised world, where people are more and more mobile, the labour market and educational institutions are becoming more and more international, with competition intensifying for both students and individuals with specialised competence. There is therefore a growing need for more students studying science, technology, engineering and mathematics (STEM) subjects, as well as lifelong learning in the form of continuing professional development and in-service training for employees, and education for career transitions. The Government has put in place a number of initiatives to ensure that the whole of Sweden will have the right skills to meet society's needs in the future, too. That companies in Sweden can also compete in the international market for the expertise required to be at the forefront of global research and innovation is essential for Sweden's growth and competitiveness.

The health care system's staff are its most important resource, and the national undertaking for the supply of skills needs to be strengthened. This includes implementing initiatives to develop, motivate and retain employees already working in the health care system, to attract staff who have left the sector back to the health care system, and to attract new employees. Health care staff with the right skills also improve the availability of care.

A key question in the transition to the health care of the future is that it is becoming increasingly data-driven. In order to retain its prominence as a research and innovation nation, it is therefore imperative for Sweden to boost young people's interest in technology, mathematics, the natural sciences and other STEM subjects. Student completion rates are currently too low in engineering study programmes, for example. This is a trend that needs to be turned around.

Supporting the supply of skills provides access to a well-educated labour force in pharmaceuticals and medical technology, as well as other sectors and disciplines that are important for life sciences, which attracts international investment. Through investment in research and education, Sweden can develop cutting-edge expertise in key areas such as biotechnology and production, which in turn drive innovation.

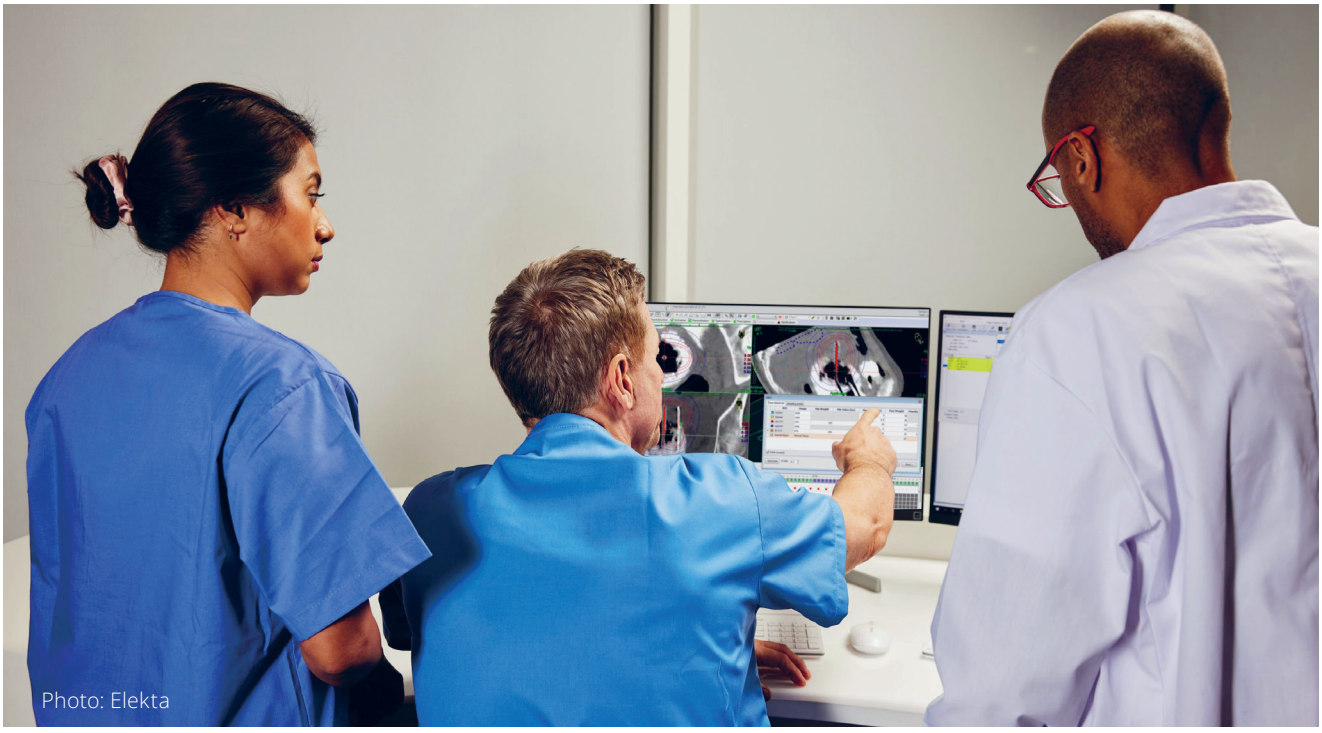


Photo: Elekta

Objectives

7.1 Skills for future health care needs

Clinical research in close cooperation with health care greatly benefits the patient and the society at large. The option for staff to combine clinical practice with research is crucial for the development of the Swedish health care system. The implementation of new working practices, models and methods for care and treatment also leads to an increased need for skilled staff, and changes in the skills needed. The Government's view is that the supply of skills in the health care system is fundamental to an equitable development and implementation of increasingly advanced diagnosis and treatment methods to meet future health care needs. It is important that there is broad cooperation between university healthcare and other health care in order to broaden access to education and research environments.

7.2 Cooperation for the supply of skills and lifelong learning

The life sciences sector is facing challenges that require the skills of existing employees to be strengthened and new skills to be added. The Government's view is that the conditions for the continuing professional development of the skilled workforce in health care needs to be strengthened, for example, through government agency cooperation and government agencies' cooperating with regions and municipalities, in order to assure future competitiveness and growth. Work with analyses on which to base forecasts as well as the dimensioning of education are important components, as are efforts to get more people to undertake study programmes in STEM subjects.

7.3 Attract and retain internationally recruited staff in Sweden

The exchange of experience internationally is crucial for high-quality and competitive research and innovation. International students who have graduated from Swedish higher education institutions are an important resource for satisfying the skills needs in Sweden. The Government wants Swedish employers in the life sciences sector to have good conditions for attracting and retaining international talent in research and development. Processes to promote the recruitment of skilled staff, and to facilitate the establishment of skilled staff from abroad in Swedish society, need to become more effective. Sweden should be a country that welcomes international talent and expertise. Government agency cooperation is an important tool for identifying and addressing problems related to attracting, establishing and retaining highly qualified staff from both Sweden and other countries.

8. International attractiveness and competitiveness

Sweden is well placed to attract investment and increase the value of its exports in the life sciences sector since the sector offers a well-developed ecosystem for cross-border cooperation partnerships in research and innovation. This is also demonstrated by the fact that both the volume and value of exports from Swedish life sciences companies are now higher than ever. But global competition for investment in research, development and production is intensifying. Over a long period of time, the EU has lost ground against comparable economies as a result of relatively weak productivity growth, and the focus should be on strengthening the EU's long-term competitiveness.

For Sweden to be a leading nation in research and innovation in life sciences, and to be able to conduct research and provide education that is internationally competitive, requires both international cooperation and a high degree of internationalisation. Research infrastructures and institutes are crucial for the implementation of high-quality research. Cooperation partnerships between global companies, small and medium-sized enterprises (SMEs), world-class research environments and infrastructures lead to groundbreaking research and new innovations. Being able to retain small companies in Sweden is an important competitive advantage for the ecosystem for research and innovation. The conditions for SMEs to establish themselves, develop and grow here need to be strengthened. An effective innovation support system and access to capital are therefore key prerequisites for these companies' global competitiveness.

Attracting international talent and skills to Swedish higher education institutions and companies is crucial to strengthening Sweden's competitiveness and capacity for innovation in life sciences. By welcoming researchers, students and professional expertise, we can promote knowledge exchange, drive technology development, and create conditions favourable to investment and economic growth. It is therefore vital to make it easier for individuals from abroad to study, work and establish themselves in Sweden.

Life sciences are a powerful growth engine. Life sciences companies can help to realise the Government's ambitions to achieve higher productivity and growth. The pharmaceutical industry today has the highest productivity of all industries in Sweden[1]. For companies to choose to conduct research, and then develop and produce products and services in Sweden, competitive framework terms and conditions and predictable and effective regulatory frameworks are vitally important, for all companies in the sector. Other factors such as access to skills, digital and physical infrastructures, and leadership in sustainability, are also crucial[2]. The fact that Sweden can offer a strong and world-leading ecosystem weighs in particularly heavily.

Close cooperation within the EU and with our Nordic neighbours constitutes an important platform in a European, and even in a wider international context. Greater Nordic cooperation gives Sweden a stronger voice in international contexts. Sweden and the Nordic countries can also be a region that shows leadership in health care and industry, and is pioneering in the sustainable and green transition in life sciences.

---

1 Measured as value added per employee divided by the number of hours worked, source Lif

2 Strategy for Sweden's trade, investment and global competitiveness

Objectives

8.1 Attractive and competitive investment climate

International exchanges are necessary to promote new thinking, stimulate the exchange of research ideas, and increase innovative capacity and competitiveness. Sweden's strengths therefore need to be highlighted more, internationally. The Government's view is that the investment climate for both Swedish and foreign companies should be attractive and competitive throughout Sweden. Foreign direct investments are to increase in terms of number, size and strategic relevance.

The Government's view is that the life sciences sector should strengthen its strategic cooperation with stakeholders in the EU and with other leading life sciences nations in order to exchange knowledge, resources and best practices. Nordic cooperation helps to create a larger market, increasing Sweden's and the Nordic countries' chances of attracting investment.

8.2 Better regulation and good framework terms and conditions for research, development and production

Swedish life sciences companies should be given the best possible conditions to conduct research, develop and manufacture in Sweden and to take prominent positions in tomorrow's global markets. This facilitates industry's investments in high-quality research, advanced technology, innovation, and production with a high knowledge content, which enables companies to continue to grow in Sweden, rather than abroad. The Government intends to continue to improve the tax conditions that support these companies in pursuing research and development, including by inquiring into a new tax incentive in this area.

The Government's view is that it should be easy to run and own companies in Sweden. The rules governing entrepreneurship need to be proportionate, transparent and well-motivated. It should be easy for companies to do the right thing and comply with the rules. Sweden is to be active in the EU in this area and work to ensure that regulatory frameworks are designed to create good conditions while assuring sustainability, which includes good patient benefit and patient safety.

8.3 Sharing knowledge and cooperation to strengthen companies' development journeys

Smaller companies and businesses in the development phase are more agile, can lie at the forefront of the research and possess cutting-edge expertise that larger companies can benefit from. In turn, larger companies can contribute experiences from their own development journeys, and an understanding of what the market is demanding, which can facilitate market access. The Government supports a research and innovation system that offers environments and infrastructures that facilitate early collaboration and knowledge exchange between small and large companies, both within the sector and cross-sectorally, and that additionally enable cooperation with other stakeholders in the sector. This is a critical aspect of an ecosystem where innovations can thrive and grow into global success stories.

8.4 More initiatives for the climate transition, climate adaptation and reducing environmental impact

Sweden's long-term climate objective means that the country should have net zero greenhouse gas emissions by 2045, and subsequently achieve negative emissions. Sweden has a strong reputation in life sciences and green technology, and has developed unique innovation models across stakeholder and industry boundaries. The Government therefore considers that cross-sectoral cooperation around industrial sustainability needs – as well as infrastructure and expertise – between the life sciences sector, innovative companies in green technologies and research institutes, can contribute to the development of innovative green solutions and society's adaptation to a changed climate. The green transition can also reduce costs, improve health and increase the attractiveness of cooperation partnerships and investments. A milestone target regarding medical products in the environment has been adopted within Sweden's environmental objectives system, and extended and enhanced cooperation can contribute to achieving these objectives.

8.5 Participation in EU life sciences programmes and initiatives

There are several areas in life sciences where participation in European programmes and similar initiatives are of particular importance. The Government's view is that Sweden's participation in European initiatives in the area such as Horizon Europe, EU4Health and the Digital Europe Programme as well as other research and innovation programmes should be strengthened and be strategic. Initiatives within the context of the European Regional Development Fund (ERDF) programmes can enable strategic participation in research and innovation programmes[1]. Swedish stakeholders should work actively to influence the design and implementation of current and upcoming programmes so that they respond to Sweden's needs, priorities and areas of strength, thereby enabling greater participation from Sweden.

---

1 A national strategy for Swedish participation in Horizon Europe 2021–2027 (in Swedish only)

Photo: Business Sweden

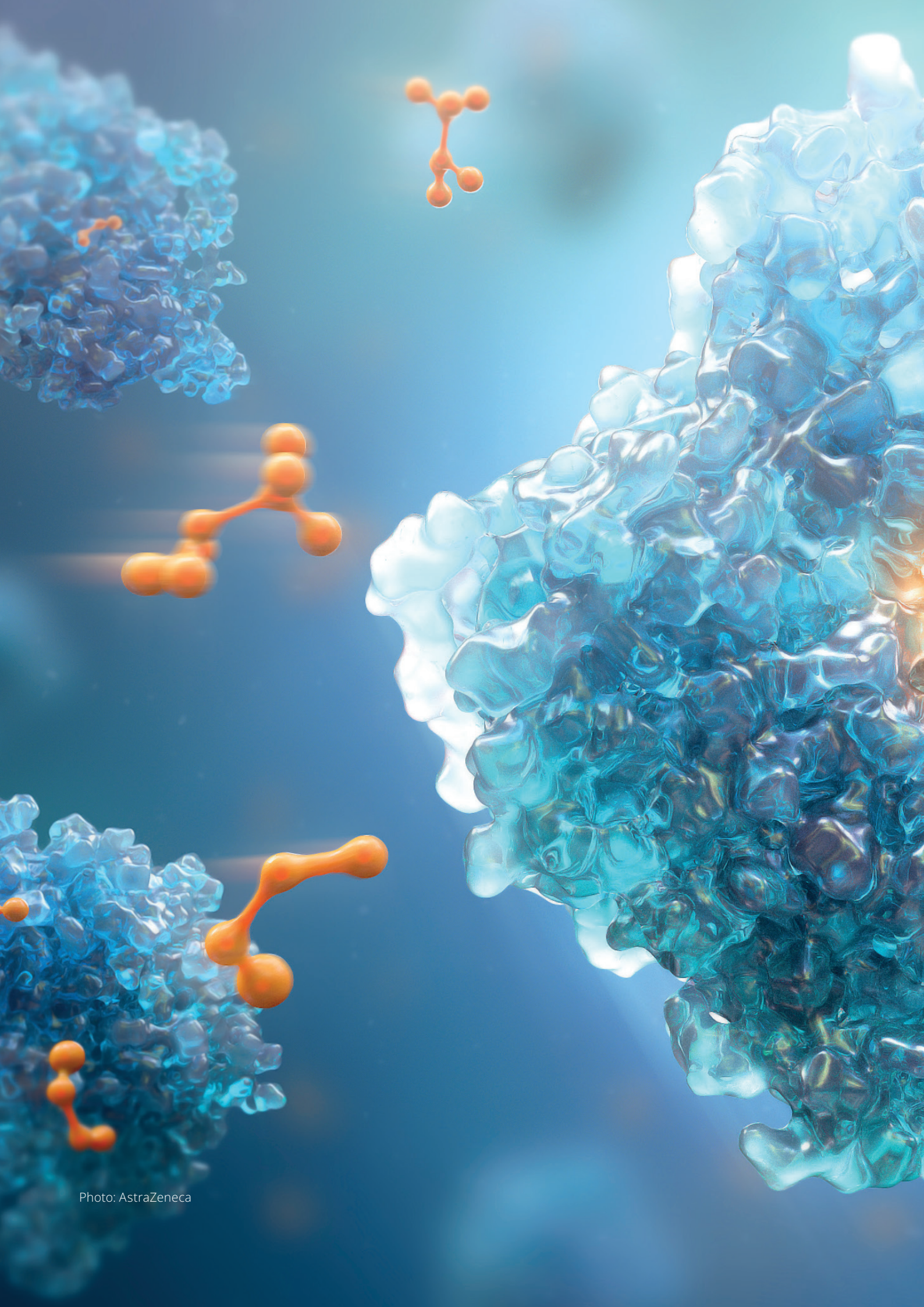
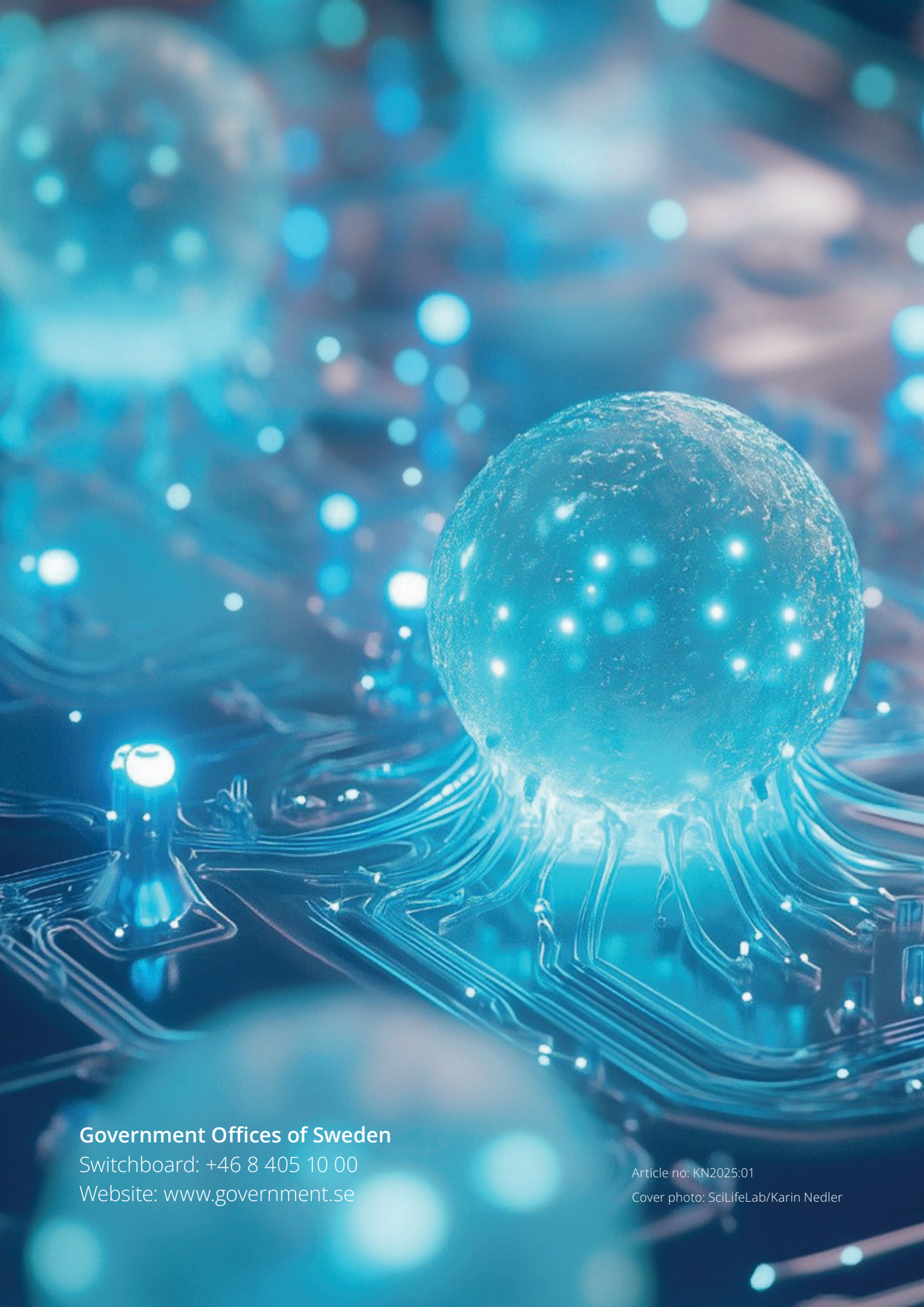


Photo: AstraZeneca



Government Offices of Sweden
Switchboard: +46 8 405 10 00
Website: www.government.se

Article no: KN2025:01

Cover photo: SciLifeLab/Karin Nedler