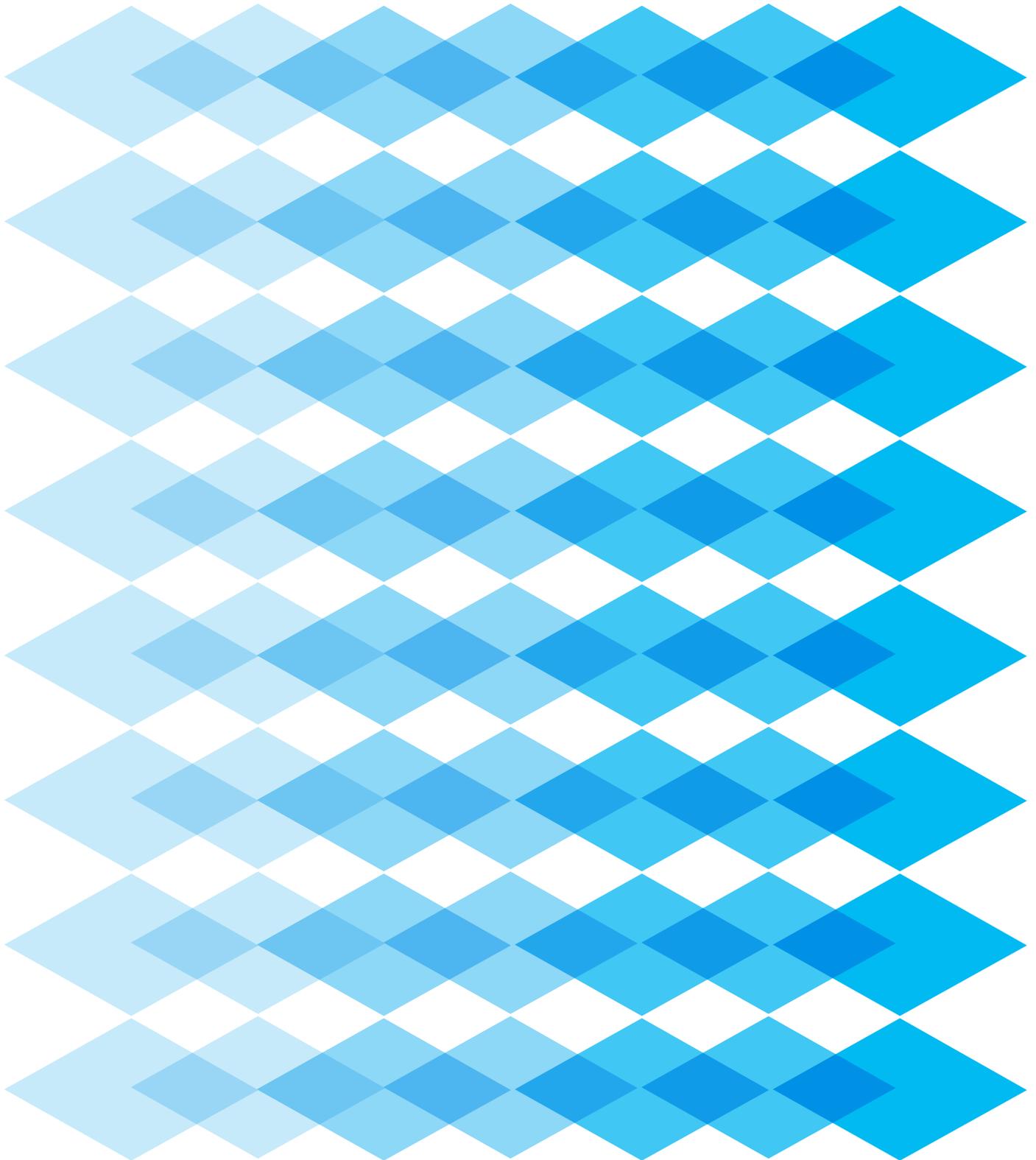


Strategy for research, development and education for healthcare, dental care and public transport in the Stockholm County Council

Applies for all operations funded by the County Council during 2015-2019



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1 Research, development and education in the Stockholm County Council

The County Council's investments in research, development and education form the basis for tomorrow's healthcare, dental care and public transport.¹ This requires collaboration between universities, trade and industry and other knowledge-based organisations that help fulfil the needs of the residents of a multicultural society. The aim is to generate and spread knowledge that will benefit residents. Research, development and education are to permeate all of the County Council's operations. Therefore, all decisions that influence the shaping of healthcare must imply opportunities for clinical research, development and education. By actively focusing on research and development, the residents of the Stockholm County will have access to effective medicines, safer methods of treatment and smarter technology. The County Council shall exploit to the full the advantages of digitalisation with flexible and supportive e-health services and public transport, and provide an appropriate information system that supports operations. A proactive approach to research, development and education is an important part of the implementation of the future plans for healthcare that were decided by the County Council Assembly, which implies that care is to be closer to the patient with an enhanced focus on personal precision in order to generate improved health.

1.1 Regional, national and international development of knowledge

As the accountable authority for healthcare and public transport, the Stockholm County Council shall contribute to the development of core operations from the perspective of patients and travellers. The Stockholm region is to be a knowledge and development centre of world class with close links between universities, trade and industry, municipalities and government. Therefore, the County Council must deepen and strengthen its collaboration with the academic community, trade and industry, regional players and patient organisations. In an increasingly globalised world, it is important that the Stockholm County Council increases its involvement and participation in the EU's programmes and funds, for example, the EU research and innovation framework programme Horisont 2020 and the EU's regional funds. The possibility of transferring data reported by patients to care providers' quality registers is to be extended. The investment in Stockholm's medical biobank is an important step to

improving the quality of research even further. Integration between Stockholm's medical biobank and the County Council's clinical trials operations, Karolinska Trial Alliance, together with making encrypted data from quality registers and medical files available, will facilitate development of healthcare and improve care for patients. The Stockholm County Council will continually support research that aims to contribute to more equal healthcare. The Stockholm region aims to be a forerunner within interprofessional education, both at undergraduate level and throughout working life, both nationally and internationally. Work-integrated learning² is to be the County Council's preferred pedagogical model.

1.2 Clinical research

The County Council collaborates closely with the Karolinska Institutet which is one of the world's leading medical universities. The collaboration with universities on research and development has been extended in recent years through agreements with KTH (Royal

¹ The Traffic Committee has decided a vision for public transport in the Stockholm County Council. Because of that, only the vision for research, development and education in healthcare is described in this chapter.

² Work-integrated learning is a collective term for the pedagogical models that are based on collaboration and integration between higher education and working life. Operations-integrated learning can be in the form of a placement, study visit, auscultation, site visit or field studies within outpatient and inpatient healthcare, care or some other relevant activity.

Institute of Technology) and Stockholm University. The collaboration extends over several faculties shall lead to greater opportunities for groundbreaking research. The basic principle for the County Council's research funds is that they are to be announced in a competitive context and be reviewed by experts.

Together with the Karolinska Institutet, the Stockholm County Council shall improve the quality of healthcare and create good prerequisites for the Karolinska Institutet to make important progress in research. The creation of a university healthcare system, as established in the new ALF agreement¹, implies that clinical research on healthcare shall gradually be restructured so that it embraces the entire care process of the patient. Within the care context, there must be distinct academic leadership that is responsible for developing the quality of healthcare and creating the best prerequisites for clinical and translational research as well as education.

In order for the clinical research performed within the Stockholm County Council to be at a high level, it is essential that some of the County Council's employees are able to divide their working hours between research, education and care. It must be ensured that sufficient time is reserved for research performed close to the patients so as to enable a continuous development of healthcare.

The Stockholm County Council's resources for clinical research shall be used to bridge knowledge gaps and promote the prevention, treatment and curing of disease, in particular, common diseases. The focus shall be on research that is close to the patient and on research findings being implemented faster in healthcare. The clinical research that is done primarily at the Karolinska Institutet must contribute to the introduction of new methods and the rejection of old processes that are not based on evidence. The County Council shall ensure that clinical research is based on residents' need for healthcare and must be given scope for both excellence and breadth. The results must be evaluated regularly from the perspective of clinical benefit in the form of improved health through new methods, treatments or preventative measures. All operations that are funded by the County Council are to take part in research, development and education.

¹ Agreement between the Swedish government and some counties regarding cooperation in the education of medical students, clinical research and development of health care.

1.2.1 The role of the university hospital

Research at the Karolinska University Hospital will be linked more closely to the daily activities of other care services. The purpose of making this change is to create better prerequisites for education and research in the modern healthcare network that is designed to attain person-orientated healthcare. In its research, the University Hospital is to collaborate with all emergency and specialist hospitals and with primary care, pre-hospital care, psychiatry and geriatrics, and thereby ensure that a value-based and process-driven healthcare system can be implemented. The hospital shall collaborate and be strongly integrated with the rest of the County Council's healthcare and with clinical research, development and education that takes places in the entire healthcare network. This collaboration shall develop the healthcare system to make it an international leader within predictive, preventive and individualised diagnostics and treatment. The foundations for this task is based on the availability of a bank of patient data, a shared biobank - Stockholm's medical biobank (SMB) - organisation and quality registers that include large, longitudinal collections of samples and data.

1.2.2 The creation of a university healthcare

The aim with a university healthcare system encompasses that the university hospital's operations shall be seamlessly integrated with other parts of healthcare. This is regulated in national and regional (the County Council and the Karolinska Institutet) ALF agreements and embraces the part of the healthcare that is designed specifically for the needs of research and education. Thus, the launch of university healthcare is a common concern for both the Karolinska Institutet and the County Council.

University healthcare's three main tasks are the following:

- Healthcare
- Clinical research
- Education (including the spreading of knowledge or the application of knowledge for the development of healthcare)

The goal is that:

- Healthcare shall be of high quality and include systems for the continuous development of care.
- Research must be competitive, both in Sweden and abroad.
- Education and research programmes must be of a high quality. The quality must be evaluated on a regular basis.

1.2.3 Individual-orientated research

The research, development and education of the future will increasingly be based on access to large amounts of well-defined patient material. Groundbreaking progress within genomic and proteomic analyses at, for example, SciLifeLab will create completely new possibilities for investigating inherited and lifestyle-related diseases. Large amounts of patient material are needed since common and widespread diseases like cancer and inflammatory diseases will be divided up into several different sub-categories which will improve prognostics and increase knowledge about the causes of disease and individually adapted treatment. It will be even more important for clinical research to be able to follow the patient's journey through the entire care chain. Observational studies and studies of individual patients' treatment (where the patient constitutes his/her own control group) are expected to become increasingly important.

By combining unique patient material that is gathered in Stockholm's medical biobank with data collected from medical records and quality registers, research groups will have the ability to map complex causes of diseases and develop individualised therapy and new diagnostics. This will form the basis of the process-driven care planning of healthcare and the future building of knowl-

edge in healthcare. Having access to collections of samples in biobanks combined with adequate patient phenotyping is an important component which is expected to become increasingly important from a medical point of view for the study and prevention of both common diseases and more unusual diseases and the development of medicines. To achieve this, there must be strategic investments to bring about more collaboration with patients, individuals and the Life Science industry. The Stockholm medical biobank creates systems for making samples and data available for patients, care providers, researchers, trade and industry. Clinical samples are to be available for both the care and treatment of the patient (in the form of diagnostics and target-oriented treatment and follow-up) and for researchers who need samples and data in order to study the cause and progression of diseases. Increased patient safety is an important aspect. Patient sample collections are also very useful for the Life Science companies working with the development of new diagnostics and new methods of treatment.

Effort should be put into marketing the competitive advantages that the Stockholm County Council has with regards to testing operations (e-Health, quality registers, biobank, healthcare data, an unbroken care chain and value-based care.) In this spirit, the County



A virtual picture that illustrates the patient's choices and journey through the healthcare system of the future. Primary care is to the left (grey circles) with its academic care centres (red cogs), in the middle there are the specialist and local hospitals, to the right, the emergency and university hospitals. There are also many organisations involved in this system, including all the operations that comprise the medical care area of the Stockholm County and the private medical care players. Shared information links up the progression of the disease.

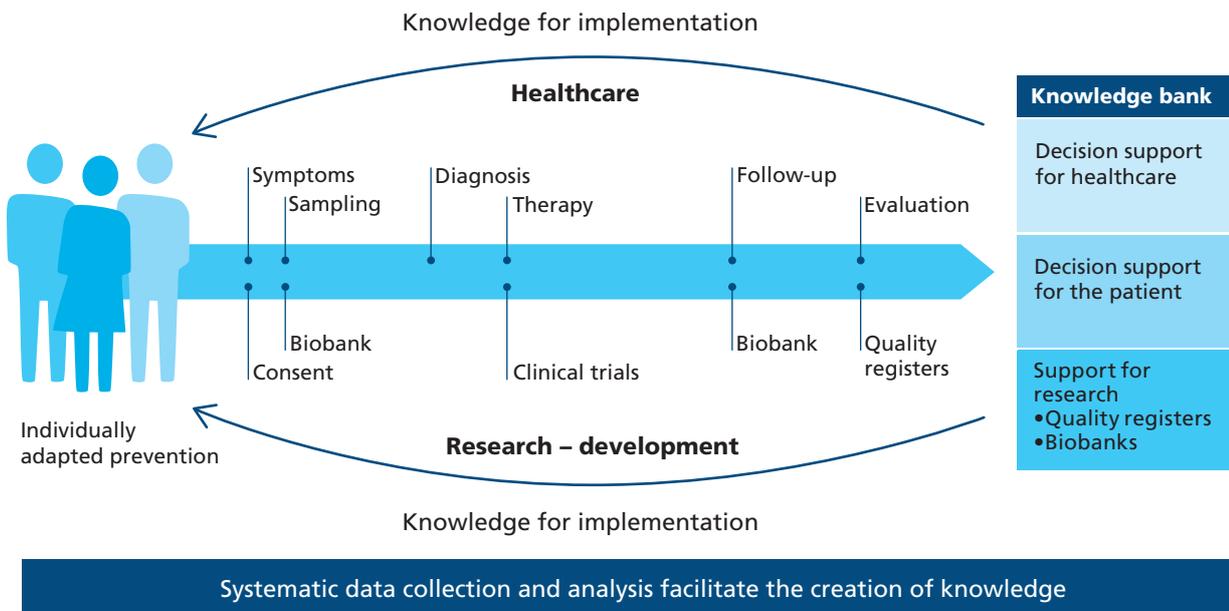
Council will continue its work on the 4D programme (diabetes, heart failure, breast cancer and rheumatism) and develop knowledge and results further so that the lessons learnt from the programme will create prerequisites for the improvement and development of more areas of research in healthcare. The 4D Programme is a collaborative programme between the Karolinska Institutet and the Stockholm County Council with the aim to create better prerequisites for care, research and collaboration with trade and industry. Through the massive development of sensors, there are now completely new prerequisites for the gathering of health data which is created by individuals themselves. The sensors not only imply huge opportunities for better health through the development of individually adapted prevention, early diagnostics and treatment; they also constitute a base for research where several individuals are able to contribute with their own data for research purposes.

1.2.4 Healthcare information system - a common IT system for the collection of data

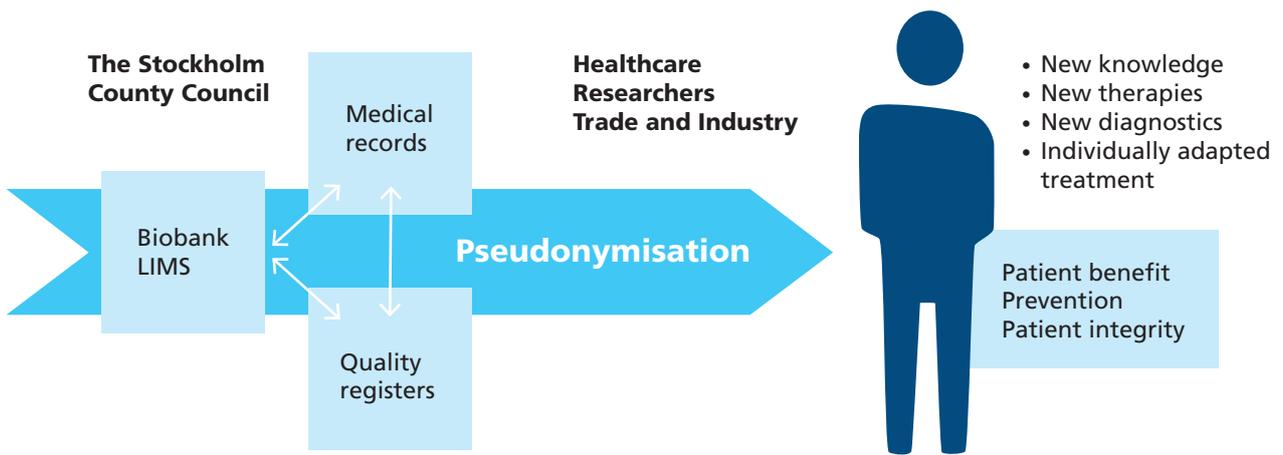
Information is collected, divided up, refined and integrated in order to create more precision in healthcare. The process for building up knowledge is thereby continuously developed. The key to success is that all players in a specific healthcare process collaborate. The individual patients, the care services, research, education and industry are players and collaborative partners who

participate in and strive towards the same objectives, namely, better health for residents and societal value.

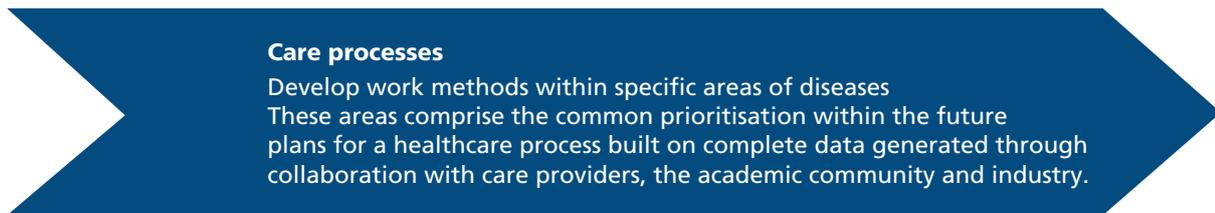
All sources that contain information about the patient (for example, quality registers, medical record systems, sample results and medication) are integrated with the knowledge that research and care can contribute. This will be done without any violation of the patient's integrity. The information is also used to develop technical systems for improved data accessibility for patients and employees. This developmental work is done in collaboration with both the care services and the patients. The technical tools are intended to be used by care providers, patients and researchers who will then have access to the evidence-based knowledge that is integrated with the information. In order for the transfer of information to be converted into knowledge and generalisable models, patient participation, structured care data and a systematic approach are required when collecting and analysing data. This will be achieved by having one unbroken informatics source as regards to all patient data. It will enable an efficient informatics systems to be created for all the interested parties concerned. Accessibility and safety is regulated by applying different levels of authorisation to different bodies. The aim is to establish a tool that will support the operational development of the entire healthcare service.



The picture illustrates how the County Council and the Karolinska Institutet are creating a new knowledge base through the collaboration between the patients and the healthcare service throughout the entire care chain. Complete information about the disease history of individual patients is created at the same time as the quality of the care given is evaluated and communicated and research is provided access to essential data and samples through collaboration with the entire medical care network.



The picture illustrates how the linking of data between medical records, e-Health, quality registers and biobank samples shall lead to a comprehensive development of healthcare. The prerequisite for this is safe data processing through the coding of patient data and effective IT systems that the general public feels comfortable and safe with.



| | | |
|--|---|--|
| <p>Medical Advisory Board, MAB "Library" Knowledge support and base</p> | <p>Support functions Research and Innovation Support from the academic community and collaboration with industry Coordination Practical supervision</p> | <p>IT Informatics is developed into defined care processes</p> |
|--|---|--|

Examples of collaboration, other areas

The Stockholm County Medical Advisory Board makes decisions concerning the care process and appoints a person to be responsible for the process. Systematic data collection from the entire care process will form the basis for the quality assurance and patient safety of each diagnosis. To achieve this, all care providers involved must collaborate with both the collection and analysis of data. This organisational change creates opportunities for improvements. Research and development resources shall contribute to the introduction of health outcome measures that are specific for each diagnosis.

1.2.5 The 3R Programme, the health care information system of the future

The Stockholm County Council is working together with Region Skåne and the Region Västra Götaland on the 3R care information system. The aim of this collaboration is to create a modern and sustainable care information system with a supportive function that can meet the needs of residents, the care services, research and quality assurance. The aims of 3R are to establish a standardised information technology and create prerequisites for more active patient participation, simpler communication with the healthcare services for the residents and provide the IT support needed for the network of medical care of the future.

The documentation of results and treatment of the patients in the County Council that comprises 16 million care visits per year (2014) generates huge amounts of data. The data consist of anything from information about blood tests, genetic analyses and protein patterns, diagnosis, treatment and follow-up, to the patients' own reporting and quality registry. The care information system of the future will meet research's need for data of high quality and will make it possible to collect patient-generated data via different e-health services, sensors and online surveys from all care providers.

The development of the care information tools of the future is crucial in order to achieve better patient safety and increased opportunities for patient participation in accordance with the new Patient Act (2014:821). The 3R collaboration will also improve the prerequisites for the development of the care services' work methods and make the IT system more user-friendly for employees. All players in each individual care chain is to actively contribute to the safe collection of adequate information and samples. This is a prerequisite for the development of patient safety, care quality, efficiency, ethics and a good research climate.

1.3 The goals for clinical research in the Stockholm County Council

- It must be possible for research to follow the entire care chain of each patient.
- The quality shall be improved and external funding increased.
- Resources for clinical research shall be prioritised

and contribute to improved health for the county's residents.

- Research grants from the Stockholm County Council are to be subjected to competition as well as follow-up demands.

1.3.1 International development of knowledge

The vast investments being made at the moment in the region are attracting international interest. The goals of the EU programme and funds match very well the aims of the County Council's investments in research and development in healthcare and public transport. The overall strategy for the EU's current programme period 2014-2020 entails a smart, sustainable and inclusive growth. An important part of the development funds, that are to support the strategy, include the funds that shall strengthen research and innovation in Europe, among others, Horizon 2020 and the European Regional Fund.

The total budget for Horizon 2020 is about EUR 80 billion and for the European Regional Fund in Stockholm about SEK 370 million. The prioritised areas for the Stockholm County Council should embrace the region's unique capacity for longitudinal follow up of each individual case that should facilitate evaluation of outcome measures and societal value. Participation in the Regional Fund and Horizon 2020 are prioritised collaboration areas.

2 Clinical education

Alongside new achievements in treating and curing patients, the Stockholm County Council must also implement educational initiatives to equip employees so they can take on the challenges associated with the patients' lifestyle and our ageing population. The healthcare staff must have skills that match the healthcare that is a modern network-based system, efficient and safe, that focuses on the individual.

Clinical education is an integrated part of the healthcare. In the Stockholm County, every year about 90,000 pupil and student weeks are scheduled in healthcare (2014). If undergraduate and postgraduate medical training is included, in total there are 150,000 scheduled training weeks and therefore the need for allocation of students must be taken into account when healthcare is being organised and administrated. This presupposes a well-functioning pedagogical structure that facilitates the implementation of the educational task and skills development.

In order for tomorrow's healthcare staff to learn how to meet the challenges of the future, more interprofessional education will be needed and new forms of educational collaboration. One example is the ongoing rapid development of technology within healthcare which does not correspond to the technical skills provided by care education. This means that the Stockholm County Council must be proactive and participate in the drawing up of course syllabi as part of its collaboration with universities and university colleges. This also means that the Stockholm County Council shall ensure it can influence, for instance, the content of the curriculum and the dimensioning of the allocated number of students at each care provider.

2.1 Educational responsibilities

The Stockholm County Council has a far-reaching responsibility to participate in the education of pupils and

students at both basic and specialist level. The Karolinska Institutet, other universities and individual university colleges have the main responsibility for the curriculum. The allocated number of students for health professions at universities and university colleges in the county is continually being increased. The role of the County Council with regard to the education of health professionals³ is to ensure that the content, quality and dimensioning of the study programmes correspond to the skills requirements of healthcare and to provide appropriate learning environments within all parts of healthcare. All care providers are obligated to take part in education and provide clinical training for pupils and students in the health professions. Employees shall participate in the education of tomorrow's staff by being supervisors for students and pupils.

Under point 2.1.6, there is a list of all the healthcare study programmes currently given in the Stockholm County Council, sub divided into undergraduate and postgraduate education and other study programmes.

2.1.1 Educational responsibilities for the County Councilfunded healthcare

The Stockholm County Council shall provide appropriate learning environments of high quality for work-integrated learning in clinical environments.

The Stockholm County Council's educational responsibilities for care funded and run by the County Council are:

1. Provide appropriate clinical training places for those parts of the study programmes that are done at healthcare facilities.
2. Contribute to the achievement of the qualitative targets of each study programme.
3. Ensure educational responsibilities are organised at local level and provide skilled pedagogical

³ Health professions means the care professions which require a licence and other professions in the field of healthcare which require education at upper secondary school or a vocational college.

supervisors.

4. Contribute to an increased use of ICT (information and communication technology) for e-learning.
5. Provide interprofessional teaching sites.
6. Provide higher education study environments where students can integrate theory and practice, develop a critical, reflective and problem-solving approach, follow the development of knowledge within their field and test, evaluate and analyse their knowledge, skills and approach.
7. Ensure that learning is based on students' intended learning outcomes and the care needs of the patient.
8. Create jointly funded postdoctoral positions that combine clinical care, research and education.

2.1.2 E-learning as part of employees' skills development

The rapid development of knowledge in healthcare and an increased rate of production place high demands on education and skills development for both students and employees. More use of information and communication technology (ICT) for e-learning will contribute to skills development and lifelong learning. ICT and e-learning make skills development available to large target groups in a cost and time effective way and also bring about increased patient safety. ICT skills are also a prerequisite for the development of e-health methods within network medical care and for individual patients.

2.1.3 Interprofessional education

Interprofessional education is when two or more professions learn from, about and with each other. Healthcare requires staff to be able to work in teams in order to facilitate efficient collaboration and improved health outcomes.⁴ To meet people's diverse care needs and to offer good and safe care, the professions involved must have knowledge about each other's areas of competence and be able to work together. This means the education of health professionals must include interprofessional group assignments. Obligatory interprofessional course items are now included in health profession study programmes and the students' interprofessional learning and training⁵ can be done in different ways.

The Stockholm Region is to be a forerunner in this field, both nationally and internationally, by developing and providing interprofessional learning sites for students in all care sectors.

2.1.4 Learning environments

Students and employees shall have the opportunity to practise and develop their professional roles in authentic situations as part of a care team. The pedagogical structure for work-integrated learning is based on three components: student-orientated learning, person-orientated learning and interprofessional learning. Learning environments are important for students' and employees' skills development based on the need to practise and develop a diverse professional role that includes the following aspects:

- being updated with new knowledge within medicine, technology, processes, care and rehabilitation,
- being able to explain recent research findings to the patient,
- training in a simulated environment in order to improve technical, problem-solving, decision-making, communication and team-based skills,
- communication and feedback between colleagues in order to learn from each situation,
- an approach making the patient the beneficiary of knowledge and skills.

The parts of the study programme that are done in clinics should be integrated in the clinical everyday life of healthcare. In order to be able to give students and employees clinical education of high quality, there must be a basic infrastructure for education in healthcare. There are different types of clinical training sites in enterprises that are owned by the County Council, but having access to these is a basic prerequisite for all clinical education, no matter whether it is done in healthcare that is run or funded by the County Council. In addition to this type of fixed infrastructure for education, there is also mobile infrastructure in the form of ICT, libraries, etcetera.

⁴ The WHO Study Group was formed in 2007 to draw up guidelines for the member states regarding interprofessional education, to create more flexible healthcare systems that can both meet care needs and maximise resources. In 2010, WHO's Framework for Action on Interprofessional Education and Collaborative Practice was published. The framework describes interprofessional education around the world, identifies the mechanisms that create successful team work, and suggests a number of measures that can be used in local healthcare systems.

⁵ A learning environment means a clinical setting where there are patients. A training environment covers different types of environments where professionals practise with the help of simulated situations. One example of training environments that already exist are the clinical training centres.

2.1.5 Clinical training centres for students and employees

The Stockholm County Council is to ensure that the emergency hospitals have educational competence where supervisors can provide clinical education of high quality and ensure that students have sufficient time, feel secure and can learn how to handle patients in an ethical and practical way. Simulation is a pedagogical method which enables both students and employees to practise and update their knowledge in a safe and realistic environment. Clinical training centres give students and employees the opportunity to practise clinical skills and theoretical knowledge prior to meeting patients. A clinical training centre is a meeting place for all professional categories where experiences can be shared and collaboration between different professional groups can be developed. Through self-directed learning, employees and students can practise clinical skills so as to gain competence and become confident when meeting patients. A clinical training centre is equipped with simulators so realistic situations can be practised in such a way that clinical methods are intertwined with leadership and teamwork.

2.1.6 Healthcare education in the Stockholm County Council

Undergraduate study programmes

- Medicine (doctor)
- Nurses
- Audiologists
- Biomedical analysts
- Occupational therapists
- Radiology nurses
- Physiotherapists
- Psychologists
- Dieticians
- Pharmacists
- Social workers
- Hospital physicists
- Speech therapists
- Opticians

Postgraduate study programmes

- Doctor, general training
- Doctor, specialist training
- Midwife
- Specialist nursing education
- Research studies
- Psychotherapist programme

Other study programmes

- Upper secondary school education

- Higher vocational education programmes
- Continuing professional development for employees
- Degree projects

2.2 Goals for clinical education in the Stockholm County Council

- The Stockholm County Council shall participate in the design of the care study programmes so as to ensure the content and dimensions of the programmes correspond to the healthcare services' skills requirements.
- Practical training is to be done close to patients and in high-quality care.
- The Stockholm County Council shall collaborate with the universities and university colleges that embrace the common vision that study programmes are to be designed to meet the needs of healthcare.
- The Stockholm County Council shall strengthen and increase the capacity of the clinical training sites.
- The County Council's employees are to be given the opportunity to continuously learn and improve their knowledge and skills so as to meet the needs of care operations. Every care provider is responsible for the skills development of its health profession employees.
- The Stockholm County Council shall extend the use of a common electronic learning platform for care providers that are funded by the County Council in order to assure the quality of e-learning. This requires secured access to ICT for all target groups and a well-defined organisation and administration that are responsible for content, pedagogical design and methods for follow-up.
- Undergraduate study programmes are to include interprofessional course components that prepare students for the everyday clinical work that awaits them.

- The Stockholm Region is to be a forerunner both nationally and internationally within interprofessional education.
- The Stockholm County Council shall ensure that the emergency hospitals have teaching facilities where supervisors can provide clinical education of high quality and ensure that students have sufficient time, feel secure and can learn how to care for patients in an ethical and practical way.

3 Dental care

The County Council has a special responsibility to provide and fund dental care for children and young people and for adults who have special dental care needs because of disease or functional impairment.

The County Council's responsibilities for dental care are stated in the Dental Care Act (1985:125). Much of the Dental Care Act is the same as the Healthcare Act (1982:763). One difference is that the Dental Care Act does not stipulate that the County Council must contribute to the funding, planning and implementation of clinical research. Through the regional ALF agreement from 2004, the Karolinska Institutet and the Stockholm County Council have an agreement to deepen and broaden their collaboration. This collaboration embraces both the medicine (doctor) study programme and all care study programmes at the Karolinska Institutet and as of 2010, the Stockholm County Council decided that the collaboration with the Karolinska Institutet would also include dental care. Dental care in the Stockholm County Council is provided by Folkandvården Stockholms län AB, which is owned by the County Council, and by private care providers. Some dental care is also given at the Department of Odontology at the Karolinska Institutet.

3.1 Odontological research

Swedish dental care and odontological research have a good reputation abroad and the quality of the research is generally viewed as being very good. However, in several reports, the Swedish Agency for Health Technology

Assessment and Assessment of Social Services (SBU) has reported that there are major knowledge gaps in odontology and many treatments lack evidence. The following are prioritised areas for the collaboration between the Karolinska Institutet and the Stockholm County Council as regards odontological research: orofacial health, the link between orofacial health and general health, epidemiology, dental care for the elderly, and research on treatment. One reason for the lack of evidence in certain areas of dental care in Sweden today is that fewer clinical studies are done compared with healthcare. From a national perspective, the Stockholm County Council has the largest patient cohorts and other advantageous prerequisites for becoming a leading region for clinical studies within dental care.

3.1.1 Academic centre for dental care for the elderly

The academic centre for dental care for the elderly is a form of collaboration between the Stockholm County Council, the Karolinska Institutet and Stiftelsen Stockholms Sjukhem. Through clinical research, education and care, the academic centre is to increase knowledge about oral health and improve dental care for the elderly in the county of Stockholm. The centre will also be a source of knowledge and information about elderly people's oral health and will contribute to the implementation of new knowledge. The ambition is that the centre will gain national status.

Together with the Karolinska Institutet, the Stockholm County Council has initiated collaboration on research and development within dental care for children and young people. The intention is to establish an academic child dental care centre for research, development and education in dental care for children and young people. Here too, the ambition is that this centre, which will be organised as a virtual knowledge centre, will gain national status.

3.2 Dental care education

In order to provide residents with good dental care, there must be a good supply of well-educated staff, primarily specialist and generalist dentists and dental hygienists. As of 2013, the Dental Care Act states that county councils must offer enough positions for dentists to do their specialist training so it corresponds to the planned future need for specialist dentists. The Stockholm County Council has done regular surveys of specialist dental care in the county, most recently in 2012. About half of all specialist dental care is given at Folk tandvården (public dental service) and half by the private sector. Some care is given at the Department of Odontology. Access to specialist dental care in the county is good but because of retirements, the allocated number of students should be increased.

The clinical part of the generalist dentist study programme is done entirely at the Department of Odontology, (the Karolinska Institutet) where the government runs a dental care centre.

3.3 Goals for odontological research and education in dental care in the Stockholm County Council

- The Stockholm County Council shall actively strive to strengthen prerequisites and increase the number of clinical studies in dental care within the county.
- Through research and development in collaboration with the Karolinska Institutet and private dental care providers, the Stockholm County Council shall improve dental health in the county and develop cost-effective methods of treatment, primarily within dental care for children and young people and the elderly, which are areas for which the County Council has special responsibility.
- The Stockholm County Council shall actively contribute to the improvement of the clinical part of dental care education.

4 Research strategy for public transport in the Stockholm County

Through research and development, the County Council shall meet the rapidly increasing demand for public transport and develop a longterm, sustainable and environmentally friendly transport system that is free from fossil fuels. Close collaboration with universities, trade and industry and other players gives the prerequisites to meet the need for a high rate of renewal and a development of the transport system. The County Council shall provide test beds within a number of sub-areas such as infrastructure, vehicles, fuels, traffic safety, environment, availability, road user behavioural patterns, control means, regulations etcetera.

The Traffic Department has drawn up six different strategies and a vision for public transport in the county which the Traffic Committee established.

The vision for public transport in the county:
“Attractive public transport in a sustainable transport system will help to make Stockholm the most attractive metropolitan region in Europe.”

The Traffic Committee in the Stockholm County Council has established six strategies for public transport.

- Traffic strategy
- Infrastructure strategy
- Business strategy
- Strategy for sustainable development
- Communication strategy
- Customer service strategy

To some extent, the Traffic Department has already established collaboration with external partners that is based on the above-mentioned strategies.

4.1 Development of sustainable, efficient and environmentally friendly public transport

Public transport plays a crucial role for accessibility in the county and helps to ensure that growth in the region is sustainable. During the next five years alone, billions will be invested in public transport.

The capacity of public transport must be increased at least as fast as the population grows. An advanced and sustainable public transport system is a prerequisite for embracing strong growth while at the same time ensuring that this region continues to be an environment that is good for both people and business operations. For example, developments in the environmental performance of public transport are satisfactory but there is a need to improve energy consumption within waterborne public transport services. Considering the increasingly ageing population, accessibility is an important aspect that must be taken into account when developing public transport.

It can also be an instrument by which one can stimulate improved health for commuters. Means of transport should be continually evaluated from an environmental and accessibility point of view. A variety of testbeds focusing on this should therefore be set up in the county.