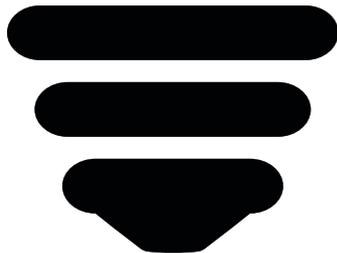


2008 2022 | CENTER FOR
PRIMARY HEALTH
CARE RESEARCH

From idea to clinical **practice.**

FOLLO

THE
OURNEY



LUNDS
UNIVERSITET



O

04 Introduction

12 Academic Healthcare Centers, AVC

O

16 Research groups

20 Examples of our work (also pages 32-41)

N

28 Stronger together

42 In media (also pages 46-49 & 52-53)

E

44 Experimental laboratory

50 Courses in research methodology

E

51 Research support in primary care

N

54 Research contributions

62 CPF's open days a hit

T

64 Economic perspective

67 Front foot forward

S

70 References



Primary
Care
Research!

The Center for Primary Health Care Research (CPF) is a successful initiative from Lund University and Region Skåne.

This publication covers the journey from the outset in 2008 to today where CPF is regarded as one of the Nordic region's foremost family medicine research centers.

Take part in ideas, initiatives and examples of our work that have contributed to raising the quality of primary care to promote and improve the health of the people of Skåne.





For the benefit of **many**

What started on a small scale back in 2008 has today developed into a unit that has a depth of knowledge and resources that operates at speed in primary care research within Skåne. Everything from small development projects close to clinical practice to extensive epidemiological projects on large and important public health diseases as well as experimental research.

To increase the spread of research-based knowledge, what it achieves and what benefits it can have is incredibly important. That's why we at CPF have taken the initiative to tell you about it, where you as a reader get a chance to relive some of the most interesting research results and events since CPF's inception.

Since the start, CPF has worked as an important bridge between academia and clinical

practice. Thanks to CPF, many researchers have got better opportunities to succeed in the search for decisive breakthroughs, which is work that in the long-run creates better and more efficient primary care and public health.

In this book we meet people who with their competence and skill, continue to make a difference in their daily work. You also get an overview of CPF's major milestones from the outset in this publication.

It has been a pleasure that next to my managerial responsibilities to also get to produce a publication with a focus on how primary care research has developed in Skåne over the years. Enjoy the book!

Kristina Sundquist
Professor and Director,
CPF & KCP

To increase the spread of research based knowledge is incredibly important.



At the cutting edge from idea to clinical practice

The Center for Primary Health Care Research (CPF) has existed since October 2008. During these years, the center has developed into one of the most successful research units in primary care regionally, nationally and internationally.

With primary care as a base, research is conducted through an active exchange of knowledge between basic research, epidemiology and patient-centered, clinical research. The unit also includes academic healthcare centers, education, supervision, seminars and the Nordic region's first experimental laboratory with primary care as its anchor.

The successes have been made possible through a unique collaboration between Region Skåne and Lund University and by the committed staff and clinical researchers at CPF and in the region's primary care system.

Rooted in primary care

In general, it can be said that the Region Skåne employees at the CPF work directly with the healthcare centers and their staff. On the university side, the mission is to conduct ground-breaking primary care research, also with the ultimate goal of improving primary care and promoting public health.

A large proportion of CPF's employees are also clinically active themselves within primary care.



VISION

To conduct ground-breaking clinical research for a primary care of the highest quality and consequently a healthier population.

Umbrella organisation

CPF's director Kristina Sundquist is also the director for the Competence Center for Primary Care (KCP) which comprises the Primary Care Education Unit (PUE), including the Family Medicine Consultant Coordinators (AKO).

Together, CPF and KCP form a cohesive knowledge platform supporting both private as well as public primary care.

Board

CPF has a board that leads the work on a strategic and overall level. The board draws up an administrative plan and is responsible for following up operations and managing financial resources.

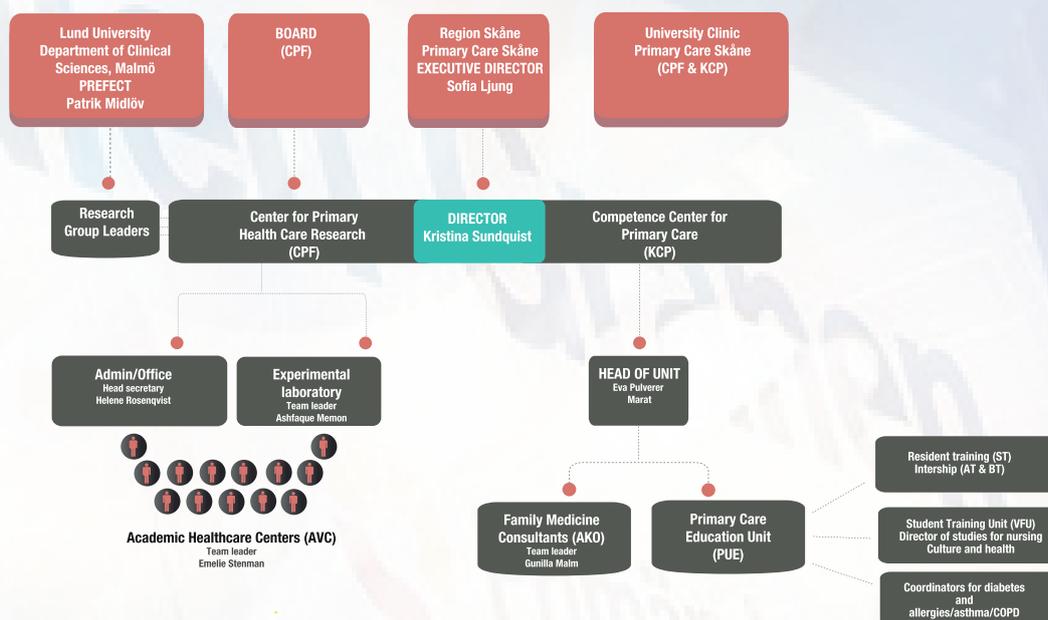
The board consists of:

Three members appointed by Region Skåne:

- ▶ Professor Carl Johan Östgren
- ▶ Professor Anders Gottsäter
- ▶ Maria Ohlson Andersson, Primary Health Care Manager, Malmö/central Skåne

Three members appointed by Lund University:

- ▶ Professor Karin Jirström, Chairperson of the board
- ▶ Professor Jonas Ludvigsson
- ▶ Professor Anna Blom



From tiny acorns 2008

The background to CPF's establishment was a 2004 international committee, chaired by Professor Karen Luker from Manchester University, that did a review of primary health care research in Skåne. The report concluded, among other things, that "Primary Health Care is an important area in terms of healthcare provision but in academic terms is a relatively new and under developed area."

Following the review, it was recommended to start an institute for primary care research affiliated with Lund University. Hence, this was the origin of Region Skåne and Lund University jointly establishing the Center for Primary Health Care Research (CPF) – a collaboration that since the start has been a key success factor.

Synergy

The regional grant lays the entire foundation for knowledge development and clinical evaluations, while external research funds have synergy effects in further increasing scientific competence within primary care. Professor Jan Sundquist was recruited from Stockholm to lead the work of building up the unit from scratch. To provide support for projects in primary care, new researchers and biostatisticians were hired. A network with ten academic healthcare centers around Skåne was also attached to CPF.

Prestigious grants

Over the years, CPF has, in international competition, been awarded several large prestigious grants, which is a good endorsement for the center that has led to Region Skåne being at the forefront of international cutting edge and clinically relevant primary care research today.

Some examples are grants from National Institutes of Health (NIH) in the USA, European Research Council (ERC), Kamprad Family Foundation for Entrepreneurship, Research & Charity and many more.



International collaborations.

International collaborations were created early on with the highly ranked universities in Stanford and Virginia, Mount Sinai, New York, German Cancer Research Center and Shimane and Kyoto universities in Japan, and the collaborations have expanded further over the years. In recent years, there have also been collaborations established with the University of Fudan and Shanghai Jiaotong University in China.

Staff in primary care often participate in these large international research projects and thus have the opportunity to receive a PhD and expand their research experience.

Powerful growth!



It started on a small scale with just a handful of employees that has over the years expanded to include one of the largest family medicine research units in the Nordics with:

113
doctoral students

61
dissertations

A large number of senior lecturers, associate professors and postdocs, most of whom are clinically active within Skåne's primary care system

More than
1500
scientific articles published in respected medical journals since CPF started

10
professors
(including two emeriti)

6
research groups

1
research lab with a focus on primary care issues

World class university healthcare!

In 2015, the concept of university healthcare was introduced in the national ALF agreement. According to the agreement, university health care shall be provided by university health care units (USVE) in order to create good conditions for research and education and to promote the development of health care.

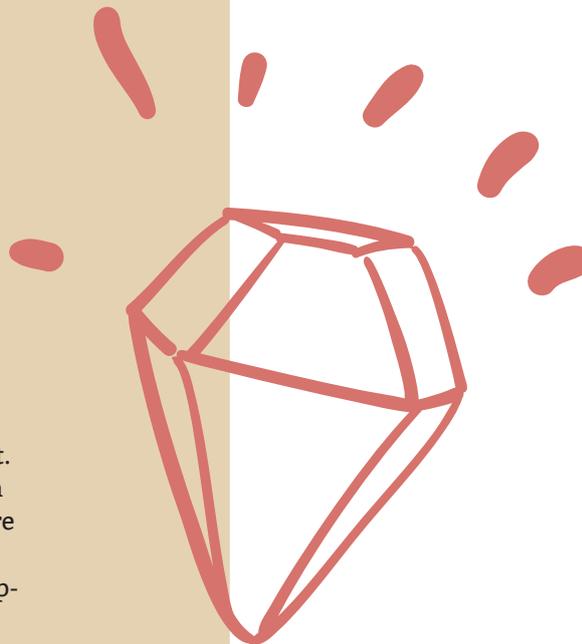
The Swedish National Board of Health and Welfare and the Swedish Research Council are tasked with evaluating USVE. The first review was conducted in 2016 when CPF was approved as a USVE together with the Competence Center for Primary Care (KCP) under the name 'University Clinic Primary Care Skåne'.

An evaluation took place in 2018 with "site visits" where the reviewers appointed by the Swedish National Board of Health and Welfare, Professor Lars Borgquist and Professor Birgitta Hovellius, Lund University, reviewed matters in detail.

They concluded that all established requirements were met and summarised in their report:

GROUNDS

"University Clinic Primary Care Skåne is an extremely extensive research and educational activity that is unparalleled in Sweden and can be a model for university units in general medicine/ primary care in Sweden."



CRITERIA

The concept of university healthcare is a national definition in the central ALF agreement that, among other things, means that CPF/ KCP must fulfil the following criteria:

- ▶ Conduct research of high national and international quality.
- ▶ Conduct in-service training of high quality.
- ▶ Follow international developments within medical research, education and healthcare.
- ▶ Contribute to an evidence based healthcare system by transferring own and others' research results to practical care and evaluate methods.
- ▶ Communicate the results of the unit to other parts of the healthcare service.
- ▶ Collaborate with the industry and patient organisations.

Significant initiatives

Here we present some significant clinical studies and evaluations that CPF carries out/carried out in Skåne primary care. In the coming pages you can discover more about these and many more initiatives.

GROUP MINDFULNESS FOR PATIENTS WITH DEPRESSION AND ANXIETY, see page 24.

MINDFULNESS IN SCHOOLS, see page 25.

EVALUATION OF SWEDEN'S FIRST DIAGNOSTIC CENTER IN KRISTIANSTAD, see page 22.

NATIONAL TONSILLITIS STUDY, see page 22.

PERSON-CENTERED CARE USING IT IN HYPERTENSION (PERHIT), see page 32.

ATRIAL FIBRILLATION IN REGION SKÅNE, THROMBOSIS PREVENTION (FIRST), see page 21.

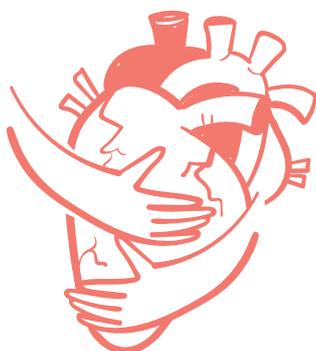
CONGESTIVE HEART FAILURE (HISS), see page 41.

SAFER DRUG USE (SÄKLÄK), see page 34.

EVALUATION OF MEDICATIONS MANAGEMENT, see page 35.



THE SIGNIFICANCE OF MIGRATION AND ETHNICITY FOR DIABETES (MEDIM), see page 26.



Academic Healthcare Centers

hub for development

Academic Healthcare Centers (AVC) are a network of healthcare centers dotted across Skåne with a research mission from CPF. AVC's mission is to build a bridge between the academic world and primary care. An example being to supervise research projects and student work and increase scientific competence in primary care. AVC is open for all professional groups in primary care.



AVC PROJECTS

- ▶ Grain Exercise Trial (lifestyle study)
- ▶ Studies about antibiotic resistance and venous thromboembolism
- ▶ PUSH-ME
- ▶ HEFESTOS (heart failure study)
- ▶ SHADES
- ▶ SMARTEST

Academic Healthcare Centers have been an important part of CPF since its inception in 2008.

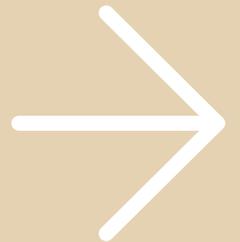
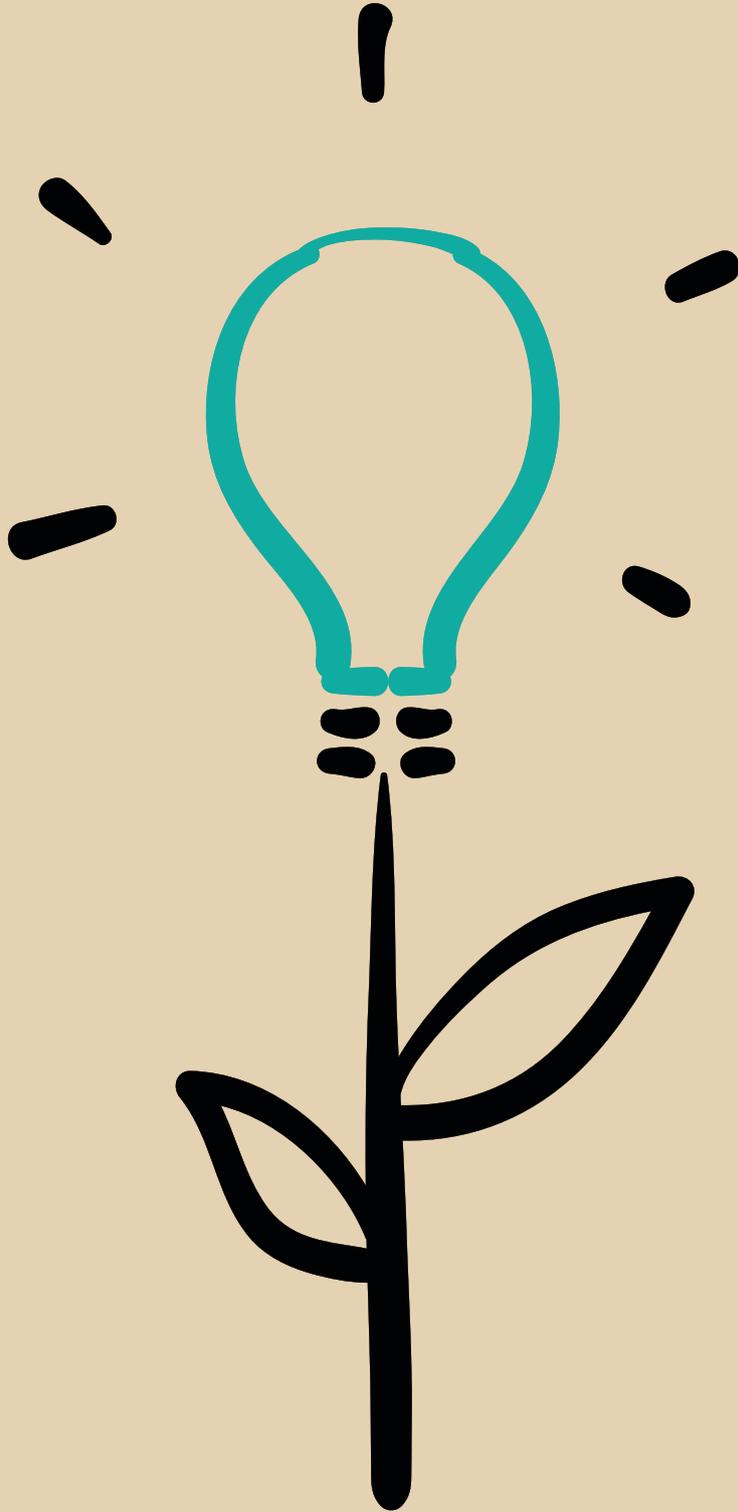
The AVC network has the task, through AVC coordinators that hold a PhD, to supervise research projects and student work and increase scientific competence in primary care.

The number of AVCs has always been around 10 and today there are 12 AVCs spread across Skåne. Attached to these are 14 AVC coordinators, including nine general practitioners, two residents in family medicine, a district nurse, a statistician, and a team leader (see page 14).

Since the start, four AVC coordinators have received associate professorships and three have received professorships at Lund University.

From student to associate professor

AVC provides support for primary care research. In addition, it functions as a development opportunity for young researchers to gain extra research experience. The initiative "From student to associate professor" helps to attract new PhD students and boosts scientific competence in primary care.



Catch up on ideas and provide support

At every AVC there is a PhD certified coordinator who coordinates clinical studies, education and supervision and acts as a sounding board for research matters.

The tasks of the AVC coordinators include:

- ▶ Supervise resident physicians, students and doctoral students in their scientific work.
- ▶ Arrange group supervision/research seminars.
- ▶ Teach primary care staff scientific methods.
- ▶ Work as a sounding board for everyone who does research projects or other scientific work in primary care, it can be about study design, statistics, regulatory issues and more.
- ▶ Spread knowledge about new research findings and evidence-based methods.
- ▶ Drive research projects.
- ▶ Take care of study visits.



● Laröd
● Husensjö
HELSINGBORG
● Tåbelund
ESLÖV
● Norra Fälåden
LUND
● Nöbbelöv
● Måsen
MALMÖ
● Bokskogen
● Granen
● Fosietorp
● Södervärn
● Näset

Veronica Milos Nymberg

 Miriam Pikkemaat

 Moa Wolff

 Emelie Stenman

 Disa Dahlman

 Mirnabi Pirouzifard

2010: Full-day scientific course for residents in family medicine (ST). Biostatistics, literature search, scientific writing and group discussions. The prelude to the 'Introductory course in medical science and quality improvement work for ST doctors which started in 2011.

2010: Information meeting about physical activity on prescription (PAP) for PAP coordinators in primary care.

AVC SKÅNE

GEOGRAPHIC LOCATION
OF AVC CENTERS
AS WELL AS COORDINATORS

Näsby
KRISTIANSTAD



Henning Stenberg



Tommy Jönsson



Ulf Jakobsson



Annika Brorsson



Anders Halling



Beata Borgström Bolmsjö



Sara Modig



Bengt Zöller

Examples of supervision

A project idea, a methodological question, an ST thesis in progress or just curious about evaluations and scientific research? Below we present some of the activities.

Group supervision

The number of resident physicians (ST) in family medicine has increased significantly in recent years (from about 175 ST doctors in 2011 to about 490 ST doctors in 2021). And an effective method of having time to supervise everyone is through group supervision. The AVC coordinators have organised about 15 group tutorials each semester around Skåne and during the pandemic these tutorials were conducted online. The group supervision is open to everyone who works in primary care, but the need has been greatest for ST doctors in recent years. AVC coordinators also offer individual supervision if needed.

Order a seminar

AVC has a concept called "Order a seminar". This means that staff in primary care can order seminars on the latest findings in various topics. Examples include: Journal club, Asthma-COPD clinic, Addiction in primary care, Drug safety, Spirometry, Formulating a scientific question and Validity and reliability.

Try out research

AVC coordinator, Professor Ulf Jakobsson, has in recent years led 'try-out research' for nurses, physiotherapists and occupational therapists. The courses were fully booked and resulted in reports, abstracts to scientific conferences and articles in scientific journals.

2010: AVC supervises 18 ST projects, 18 students, 6 doctoral students and 19 other projects in primary care.

2010: 89 scientific (peer-reviewed) publications.

research groups

6



1 FAMILY MEDICINE AND CLINICAL EPIDEMIOLOGY

Research leader: Kristina Sundquist, Professor, Family physician and CPF's director

The research group works with clinical, experimental and epidemiological matters. Its main focus is to answer questions relevant to primary care.

Important research areas are mental ill-health, cancer and cardiovascular diseases and their risk factors with a clear focus on how socioeconomic lifestyle conditions affect human health.

2 FAMILY MEDICINE AND COMMUNITY MEDICINE

Research leader: Patrik Midlöv, Prefect, Professor, Family physician

The research is about health and illnesses at different levels, from individual to group and the entire population. Special focus is on multi-morbid elderly patients but also healthcare inequality.

An important research area is e-health with studies in telemedicine and various forms of digital decision support. There are also several studies underway in common conditions in primary care (infectious diseases, diabetes, cardiovascular disease). All research areas have their basis in primary care.



Kristina Sundquist in 2019 was the most cited medical researcher at Lund University. In addition, she was also the seventh most cited researcher among Sweden's medical researchers.



MILESTONES
CPF

2011: CPF's family medicine experimental research laboratory was established as Sweden's first and only of its kind.



3 CARDIOVASCULAR MEDICINE AND GENETICS

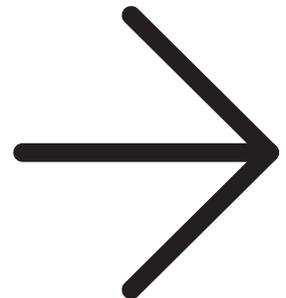
**Research leader: Bengt Zöller,
Professor, Family physician (also
has a background within clinical
and internal medicine)**

The research concerns cardiovascular diseases that are common in primary care such as coronary heart disease, stroke and blood clots in the legs and lungs. The purpose of the research is to find new knowledge that can lead to better diagnosis, prevention and treatment.

Much of the heritability of cardiovascular disease is still unknown. One methodology used is to analyse all our genes (genome wide associations study, whole exome sequencing and whole genome sequencing) in patients with and without cardiovascular disease to identify new unknown pathogenic gene changes. This can lead to better screening and risk prevention and to identifying new disease mechanisms and treatment principles.



Both lifestyle and hereditary factors are important. Cardiovascular diseases can affect the body's arteries as well as veins.





4 SOCIAL EPIDEMIOLOGY

Research leader: Juan Merlo, Professor, Chief Physician in social medicine

The research group gathers expertise from medicine, pharmaceuticals, epidemiology, statistics, social sciences and anthropology. The team studies how health, risks for ill-health, and care utilisation are distributed geographically and among different socio-economic and demographic groups in society. The purpose is to identify the factors that condition this distribution and develop new methods to meet this objective.

The research group conducts research in drug epidemiology and healthcare epidemiology to investigate the use and effect of various drugs in society outside clinical trials, and to evaluate the quality of health care based on the principle of equality and care on equal terms as needed.



The team studies health, risks for ill-health, health related obstacles, demographics and socioeconomics.

2011: AVC supervises 31 resident physician projects and 10 student/other projects.

2011: 2 dissertations.



MILESTONES
CPF



5 SOCIAL MEDICINE AND HEALTH POLICY

Research leader:
**Martin Lindström, Professor,
Chief Physician**

Martin Lindström has been studying the connections between social capital and health for several decades. Social capital can affect health through, among other things, influences on psychological and psychosocial mechanisms, norms that govern health-related lifestyle habits, access to healthcare services and other social services.

The research group uses quantitative methods to analyse both cross-sectional data and longitudinal data (prospective cohort studies).

A current project analyses the links between sexual identity, social capital and health. The COVID-19 pandemic and the Swedish strategy are analysed from a theoretical and epidemiological perspective.

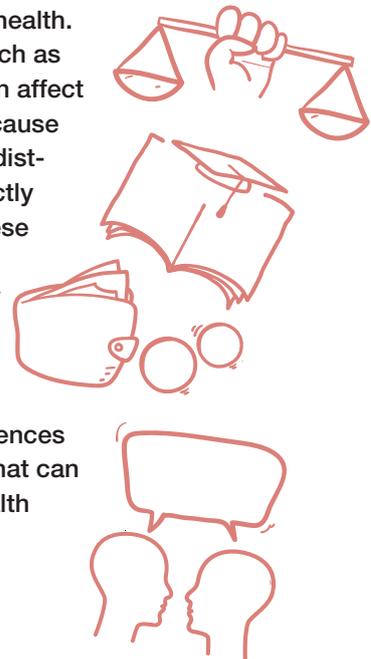


6 HEALTH ECONOMICS

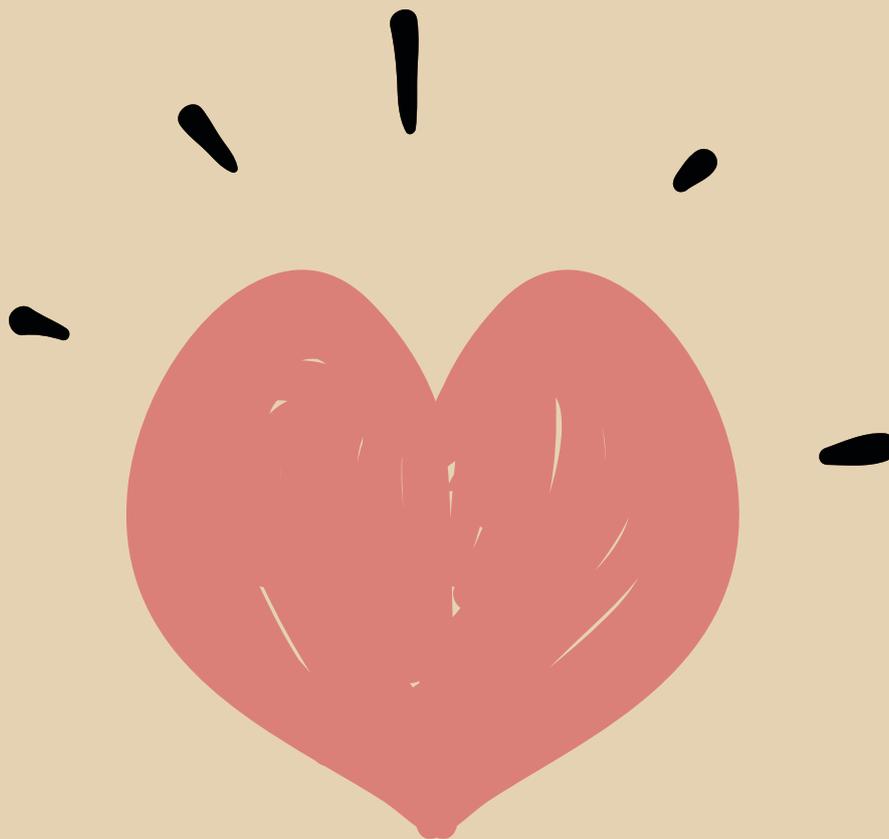
Research leader:
**Ulf Gerdtham,
Professor**

The research group studies the complex relationships between economic-related factors and health. Effects of economic factors such as education and employment can affect health, which is interesting because this means that health and its distribution can be affected indirectly through initiatives aimed at these economic factors.

It is also interesting to study the effects of health on the abovementioned economic factors in order to increase knowledge about the consequences of different health conditions that can show the value of different health initiatives.



2012: An article by Jianguang Ji and colleagues showing that people with Huntington's disease had a lower risk of developing cancer [37] is published in the prestigious *The Lancet Oncology* and attracts a lot of attention internationally. Jianguang Ji is interviewed by the BBC, among others.



Good examples

Here we display concrete examples of how CPF's research and development works – from idea to the clinical benefit for primary care and the improvement of public health.

FIRST can help prevent stroke with better drug treatment

A study with 5,000 patients in Skåne at 25 healthcare centres has led to more people receiving better treatment for atrial fibrillation and thus helps to reduce the risk of stroke.

If more patients with atrial fibrillation get the correct medication, then approx. 300-400 cases of stroke per year in Skåne can be prevented. However, only 42 percent of them receive blood thinning medication.

That was the starting point for the project FIRST (Atrial fibrillation in Region Skåne, thrombosis prevention) that took place from 2013–2016 at 25 health care centers in the region.

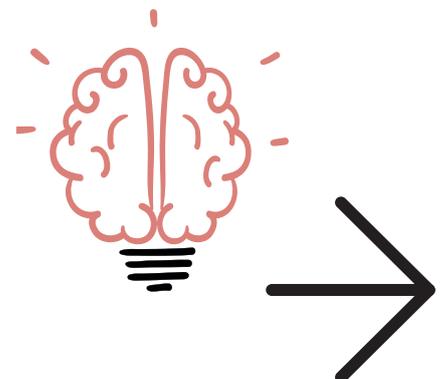
The project was a collaboration where CPF, primary health-care centers, the regional cardiology clinics, the pharmaceutical unit in Malmö, and the research based pharmaceutical industry (LIF) participated.

In the project, an intervention was conducted at 25 health-care centers (both private and public) including education, medical records review and follow-up medical visits to investigate if the degree of treatment with anticoagulants increased among patients with atrial fibrillation and thus decreased the risk of falling ill with stroke. The study resulted in that 116 new patients received treatment with anticoagulants, and thus had 76% of the patients at the 25 health got proper treatment after the study. The FIRST project was also experienced as being positive by the participating GPs'. Of those who answered a survey, 79% responded that they had gained an improvement in knowledge of drug treatment of atrial fibrillation and could consider participating in similar studies.

– Thanks to this project, where we recruited patients with atrial fibrillation and checked if they received treatment, we have raised the figure to close to 80%, which is the maximum level because some cannot manage the treatment. This initiative will save lives and prevent human suffering, and I am very happy to have been able to lead the work, says Professor Kristina Sundquist.



This initiative will save lives and prevent human suffering.



Halved penicillin dose for pharyngotonsillitis gave equal effect

A penicillin course of five days for treating pharyngotonsillitis did not give a worse effect than the usual recommended 10-day treatment. This was shown in a study done in collaboration with The Swedish Public Health Agency.

Pharyngotonsillitis is a common infection caused by group A streptococci and in Sweden is usually treated with penicillin for ten days. Between 2015 and 2018, a randomized controlled trial was carried out in collaboration with The Swedish Public Health Agency where treatment with penicillin for five days was compared with treatment as usual for ten days. The project leader was Professor Sigvard Mölsted.

The study was conducted at 17 healthcare centers in Sweden, of which seven were located in Skåne. The patients, both children and adults, had clear symptoms of pharyngotonsillitis and streptococci in the throat. They were randomly assigned to either take penicillin four times a day for five days (total 16 g per treatment) or the usually recommended treatment with penicillin three times per day for ten days (a total of 30 g per treatment).

The results showed that the 5-day regimen did not have a worse effect against pharyngotonsillitis in the study compared with the 10-day treatment. In half of the patients, the sore throat symptoms disappeared completely within four days in both groups. About 90% of the patients were healthy one week after the end of treatment, regardless of the duration of treatment length. The number of patients who became ill again within a month and the number of patients who developed complications were, as expected, few and there were no differences between the groups.

The study contributes with increased knowledge that is important when new treatment recommendations are developed. [30].

Good rating for fast track for cancer patients

Shorter waiting times, more efficient investigations and faster referrals for patients with diffuse and suspected severe symptoms of cancer. These are some of the results from an evaluation of a diagnostic center that CPF carried out.

The Diagnostic Center (DC) at the Central Hospital Kristianstad was Sweden's first fast track service for patients with suspicion of serious illness without organ-specific symptoms. Patients were referred to the DC after an initial investigation in primary care. The Regional Cancer Center South commissioned CPF to scientifically evaluate the project.

The catchment area was all healthcare centres in the then Kryh administration that were offered to refer patients with diffuse, severe symptoms and suspected cancer to the DC for a faster and more thorough investigation. The evaluation showed that both patients and medics were pleased with the project that has now become a permanent activity within Region Skåne.

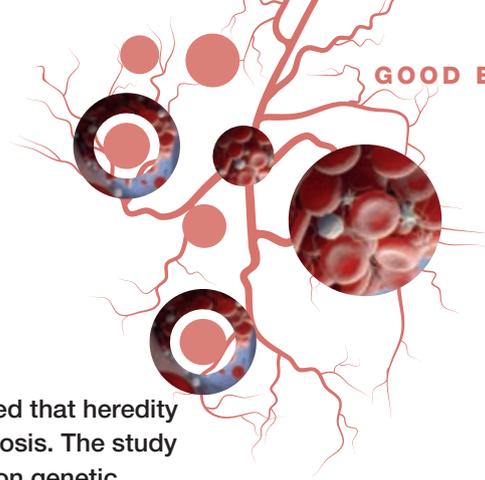
The three sub-studies also showed that the set time targets were largely met and that the time to information on cancer diagnosis and start of treatment was shorter compared to a matched control group. However, the workflow in primary care needs to be reviewed to ease compliance to the process. That work has begun at the Regional Cancer Center South [20-22].



Heredity for varicose veins – new risk factor for venous thrombosis

A study by Professor Bengt Zöller and colleagues showed that heredity for varicose veins is a new risk factor for venous thrombosis. The study suggests that there is a shared heredity and also common genetic factors that predispose to both varicose veins and venous blood clots.

- This is new knowledge of great importance for primary care. The study suggests that there may be unknown common genetic risk factors for varicose veins and venous blood clots, says Bengt Zöller.



New discovery of genetic variants

In an innovative way Bengt Zöller's research team has found genetic variants in several different genes that encodes proteins that are necessary for the blood to coagulate properly.

The genetic variants give rise to proteins that function worse or not at all, something which can reduce coagulation and protect against blood clots.

- Finding new gene variants means that in the future we can treat based on the individual's genetic changes. If a patient has had blood clots then we can, for example, see the genes' impact of a relapse and adapt the treatment accordingly, says Bengt Zöller, who emphasises that the researchers' findings shed light on the complex balance present in the blood between the conditions for blood clots and bleeding.

INCREASED RISK OF THROMBOSIS IF FAMILY ARE AFFECTED

Another of Bengt Zöller's research team's studies showed that when young men suffer from thrombosis, it is often hereditary factors behind it. Hereditary factors are most important at ages 10–50 years and the highest risk is among young people between 10 and 19 years. The risk is greatest if you have one or more siblings who have previously had thrombosis. If the sibling was affected at the age of 10–19, then the risk is increased five times and if more than one sibling was affected, then the risk increased by as much as 50 times. After the age of 50, it seems to be other factors that have more influence than heredity. For the period 1987–2007 a total of 45,362 people suffered from venous thrombosis. Of these, 4,865 (just over 10%) had hereditary predisposition for the disease.

- Blood clots are one of our most common diseases and have previously been linked to risk factors such as birth control pills, smoking, obesity and physical inactivity. We have shown that the family's medical history is at least as great a risk factor that should be measured in the clinical medical history and the investigation, says Bengt Zöller.



Group mindfulness treatment just as effective as CBT for depression and anxiety

The need for psychotherapy, for the treatment of depression and anxiety, in primary care is substantial but in many parts of the country there is a shortage of psycho-therapists. A CPF study involving patients at 16 Skåne healthcare centers showed that group therapy with mindfulness is just as effective as individual Cognitive Behavioural Therapy (CBT) for patients with depression and anxiety.

The study, published in British Journal of Psychiatry, was the first randomised study that compared group therapy with mindfulness with individual cognitive behavioural therapy of patients with depression and anxiety in primary care.

The researchers, led by Professor Jan Sundquist at CPF, completed the study at 16 healthcare centers in Skåne, both private and public.

Two mindfulness instructors from different professional groups were trained at each healthcare centre. A total of 215 patients with depression, anxiety or crisis issues were then randomised to structured mindfulness group therapy or as normal regular treatment – mainly individual CBT.

Before and after the treatment the patients in both groups completed questionnaires regarding the grade of severity of their depression and anxiety. The patients also received one training program and kept a diary about their mindfulness practice. The treatment period was eight weeks.

The results showed that self-reported symptoms of depression and anxiety decreased in both the treatment and control groups. There was no statistical difference between both treatments.

– Our results show that mindfulness can be a good complement and an alternative to individual psychotherapy, says Jan Sundquist.

At the one-year follow-up the effect on depression and anxiety remained [18] and the method also proved to be cost effective [19]. Molecular analyses showed a possible role for MIF (macrophage migration inhibitory factor), telomere length, mitochondrial DNA, certain inflammatory proteins and microRNAs in mental illness [2-5],

– This knowledge can be used to understand different mechanisms that in turn can lead to new methods of prevention and treatment, says Jan Sundquist.

– Mindfulness can be a good complement and alternative to individual therapy.



Mindfulness can be a good complement and alternative to individual therapy.



School project

School children in Skåne try out mindfulness to prevent stress

Stress, depression and anxiety are becoming more common among young people. In a large-scale study researchers at CPF are investigating if mindfulness during school hours can reduce children's stress.

A journey of discovery in a fantasy forest, relaxation with teddy bears and a breathing exercise. A new subject has been added to the curriculum in the classrooms in School children in Skåne .

In a project involving around 1,000 school children aged 6 to 16 years at 12 schools, researchers at CPF have investigated if mindfulness training can lead to reductions in stress, depression as well as better health.

In the project that started in 2016, half of the students practiced mindfulness five to ten minutes a day during ten weeks under the guidance of a teacher who had undergone instructor training. The other half are the control group.

The effect on depression, stress and anxiety is evaluated with a survey

filled out by the students before and after the intervention. The results are compared with the control classes that have not done mindfulness.

Surveys have been sent out once a year to all participating students for long-term follow-up of depression, anxiety and other factors that may be involved in the development of mental illness.

Analyses of the results are ongoing. There are many indications that mental illness is increasing among school children, including the demand for child and adolescent psychiatry. For example, it can be about poor self-esteem, anxiety and depression.

– An important point of the study is also to map the children's mental health, says Jan Sundquist, senior professor at CPF.



Twice as high risk for type 2 diabetes for people born in Iraq

The risk of developing type 2 diabetes is twice as high in Malmö residents born in Iraq as for Swedish-born. In addition, those of Iraqi origin also fall ill almost seven years earlier. Two risk factors of several stand out – overweight/obesity and strong hereditary burden for the disease. These are some of the results of the MEDIM study in Malmö.

The MEDIM study (The importance of migration and ethnicity for diabetes development in Malmö). started in 2010. The first phase was a population study in Malmö, where a total of 1,400 Malmö residents born in Iraq and just over 700 born in Sweden participated in health surveys.

The reason why the researchers wanted to look at the risk of diabetes among immigrants from Iraq in Sweden is the fact that the Middle East is a high-risk area for diabetes, and that Iraqis are the largest non-European group in Sweden.

The results showed that the differences between the groups were large. It showed that diabetes was twice as common in the Iraqi group. A partial study also showed that the incidence of diabetes was higher compared to Iraqis in their home country. The project has

also included one intervention with culturally adapted lifestyle advice.

– The program is unique because it is culturally adapted both in terms of diet and exercise, and also that you take obstacles to lifestyle change into consideration, such as cultural causes, says research leader Louise Bennet.

– More targeted and structured preventive work and increased knowledge about cultural and structural barriers could lead to health economic benefits for healthcare, not least for better health and quality of life for the individual, adds Louise.

MEDIM is done in collaboration with researchers at CPF and has resulted in several publications on incidence of diabetes, molecular mechanisms and self-rated health. [23-29].



More targeted and preventive work around cultural obstacles and differences are needed according to Associate professor Louise Bennet.



Neighbourhood area can influence health in diabetes

Where we live plays a role in our health. People with diabetes in deprived residential areas more often have cardiovascular disease and an increased risk of premature death.

It is already known that both depression and cardiovascular disease are associated with diabetes. But researchers at CPF have for the first time measured the importance of residential area influence in a number of sub-studies. The results build on a comprehensive basis from population, pharmaceutical, and patient registers and information from a large number of health-care centers.

The results show, among other things, that diabetes was more often associated with coronary heart disease in neighbourhoods with low socioeconomic status than in other residential areas. Even when it comes to mortality among residents with diabetes, there was a link, which showed increased risk of premature death when the person lived in a residential area with low socioeconomic status. The risk for women with diabetes to suffer from coronary heart disease was 20% higher if they lived in deprived neighbourhoods compared with in affluent residential areas. One of the studies also showed that depression and living in a deprived neighbourhood were associated with diabetes.

The differences in health between different neighbourhood areas are likely for several reasons that not only have to do with the accommodation itself, such as personal circumstances like education level and income. But even when the results were adjusted for these type of individual conditions, differences remained between different residential areas.





**We are
stronger
together**

With CPF and KCP there is a cohesive platform for research, education and skills development for many occupational categories in primary. This develops a cross-border approach that is positive for both KCP and CPF where knowledge and ideas ‘spill over’ into each other's activities. Eva Pulverer Marat and Kristina Sundquist tell more.

That academia, development work, education and internships together develop different activities is nothing new. But the way it is done in Skåne is unique. For starters, there is the clinical interconnection established via the Academic Healthcare Centers (AVC), and the link between the Competence Center for Primary Care (KCP) and CPF. In addition, there is the tandem group management, which involves representatives from Region Skåne and Lund University. All of this ensures that CPF and KCP together provides a unified platform.

So says Professor Kristina Sundquist, director for both CPF and KCP and Eva Pulverer Marat, unit manager for KCP.

Stroke of luck

KCP was linked to CPF in 2013 and became a very important part in the collaboration of this cohesive platform for education and skills development for occupational categories in primary care.

– It was a stroke of luck. Previously we had no one to discuss research and to share ideas with, which is an important ingredient. Primary care was a bit in the backwater in terms of research; there was no platform for research before CPF.

Together we have developed cross-border working methods that are positive for both KCP and CPF where knowledge and ideas ‘spill over’ into each other's activities, says Eva Pulverer Marat.

– The collaboration creates inspiration and innovation that is necessary to be able to implement new research in primary care, says Kristina Sundquist.

Hand in hand

For example, in common teaching activities, the CPF supports to develop education based on a scientific basis, and also in how to interpret science and disseminate knowledge. This can in turn be done via the KCP's webinars and films, and where CPF participated in current topics. KCP and CPF also work together to help the resident physicians (ST) who will perform mandatory scientific ST projects. KCP coordinates the initiative and CPF supports with courses in scientific methodology, scientific supervision and reviews of ST projects.

Another example is the initiative with culture on prescription where people with mental ill health are given a ‘cultural prescription’ via their healthcare centre. It started as a development project within KCP that has now also become a

From left:
director Kristina
Sundquist and
unit manager
Eva Pulverer
Marat.

It was a stroke of luck. Previously we had no one to discuss research with.



research project with support from CPF in the form of expertise in quantitative methods and statistics. Targeted health dialogues is another initiative where the administrations go hand in hand.

– KCP got an initiative from the health unit on disseminating information on health conversations for 40-year-olds, where we, among other things made films about which evidence that is available for the health dialogue method and where CPF participated, says Eva.

Kristina Sundquist, adds:

– In connection with that, we asked the health unit if we could evaluate the health dialogue scientifically, which has now resulted in a great project.

Reduce tunnel vision thinking

Kristina and Eva both think that it is good that large parts of the organisation are housed under the same roof.

– Through KCP and AVC we get the entire contact patch in primary care and a good picture of what knowledge that needs to be developed. It would not work if we did not sit together. It also becomes easier to remove tunnel vision thinking and simplifies contact with groups, universities and colleges and other partners, says Kristina.

There is a lot to be proud of but there are areas for improvement.

– We need to strengthen skills development in more occupational groups in primary care. And additional research services for resident physicians is also high on the wish list, says Eva Pulverer Marat.

Link to primary care

Keeping an ear to the ground towards healthcare is also important for all



Via KCP and AVC we get the entire contact patch in primary care and a good picture of what knowledge needs to develop.



COMPETENCE CENTER PRIMARY CARE, KCP

The competence center includes:

PRIMARY CARE EDUCATION UNIT, PUE

The area of responsibility includes issues concerning AT, ST and BT, in-service training, coordinators in diabetes and asthma/COPD/allergies, administration-based education, director of studies for nurses as well as culture and health.

FAMILY MEDICINE CONSULTANTS SKÅNE – AKO

A resource for all of Hälsovalet's doctors. AKO offers skills development for primary care physicians and standardises care guidelines for primary care based on the national clinical knowledge support. All for the sake of ease and easily accessible way to facilitate the everyday work life of GPs'.

employees at KCP and CPF, not least for the managers themselves. Both Eva and Kristina work clinically one day a week at the Eden and Granen healthcare centers, respectively, where they thrive.

– I think it's good that us as managers work clinically to keep track of what is going on and not to lose sight of how it looks like right now in primary care, says Eva Pulverer Marat.

According to Kristina Sundquist, it is also in the meetings with individual patients where questions are raised and ideas are born that can then be studied scientifically to increase knowledge and improve care.

– It is a perfect combination that both improves research and clinical activities, concludes Kristina Sundquist.



Support via mobile phone in blood pressure treatment evaluated in large patient study

In a large collaborative study, we evaluate if person-centered care along with a web-based IT solution, where the participants themselves monitor their blood pressure on their phone, contributes to more people reaching their target blood pressure and decreasing the risk of contracting other illnesses.

High blood pressure is one of the most important risk factors for myocardial infarction and stroke. In Sweden, it is estimated that more than one in four adults has high blood pressure. Even though there are effective drugs, it is only a smaller proportion of the medicated who reach their target value for blood pressure.

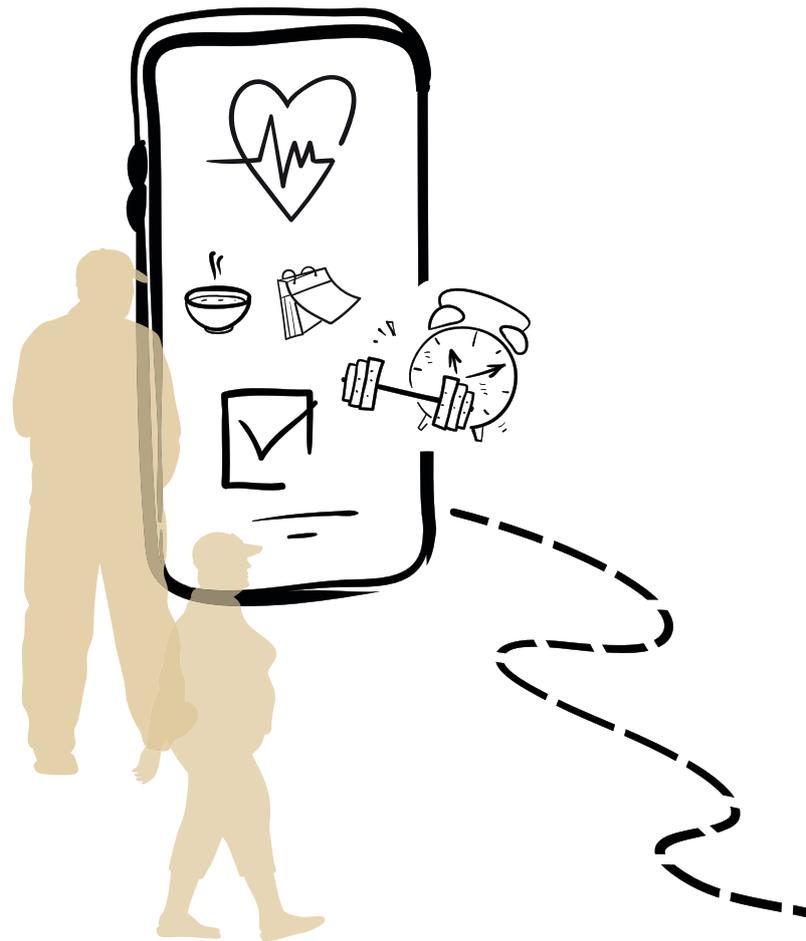
In the collaborative project PERHIT, which started in 2018, a total of 900 patients at 36 healthcare centers in Skåne and other parts of Sweden will be included.

It's done via an interactive web-based mobile phone system monitoring and reporting participants' blood pressure, symptoms, side effects, mood and lifestyle for eight weeks. The values are followed up by staff at the healthcare centers as a basis for continued treatment, health talks and medical follow-up with the patients.

A previous pilot study has shown good results. Both patients and healthcare personnel were very positive about the technical solution and considered that it worked well. In addition, the results also

showed that patients after eight weeks had lowered their blood pressure significantly and that they were more active in their own treatment and care.

– We want to increase the awareness of patients in a new way by mixing person-centered primary care with e-health. We hope to achieve increased motivation for treatment and that we influence the results in a positive way, says Professor Patrik Midlöv.



Can a text message with health advice lower blood pressure?

Simple and regular text messages sent via mobile that encourage healthy behaviour should motivate people to improve their health, lower blood pressure and prevent cardiovascular disease. That's the hope of a research group at CPF in the e-health project PUSH ME.

In another blood pressure project called PUSH ME, a research team at CPF is giving lifestyle advice via sms text messages, hoping that it can have an effect.

– Preventive work is a big mission for us in primary care. But sometimes we have a hard time reaching our patients and increase their motivation for healthier behaviours. It needs complementary working methods, says Susanna Calling, project manager and Associate professor.

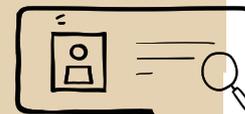
The study is underway at seven healthcare centers in Skåne, Västra Götaland and Kronoberg, with so far around 200 patients with high blood pressure recruited, aged between 40 and 80 years. A total of 400 patients from nine healthcare centers in four regions will be included.

The treatment group can try a program that consists of a total of 104 text messages with lifestyle advice that the participants receive on their mobile phones four times a week. All questions and advice are based on different Swedish recommendations on healthy living

At the start and after six months, the participants go through a health examination where they assess their health, monitor blood pressure, take blood tests and measure waist circumference and weight.

The text messages consist of both reminders and lifestyle advice to quit smoking, increase physical activity, drink less alcohol, eat healthier and reduce stress.

– The purpose is to strengthen the patients to take command of their own health. And there the mobile phone is an excellent and simple tool. Most people in Sweden own one and usually carry it with them. The information can be individualised and delivered quickly without the hassle of a login to a website and is a low cost for primary care, says Susanna Calling.



From left: Moa Wolff, Veronica Milos Nymberg and Susanna Calling who hope that more scientific evaluations of eHealth services can be introduced.



Safe drug use in primary care – a method that works

Improper drug use is one of the most common reasons why patients suffer problems in healthcare. In the project SÄKLÄK, an interprofessional approach to reduce the incidence of drug-related problems has been tested with good results.

SAFE MEDICINE (Safe drug use in primary care) means that the administrative unit at the healthcare center do their own evaluation of their working practice. The method is interprofessional and also includes an external review, feedback and agreement on measures.

– The focus is on the patient's use of drugs and conditions to follow the prescription, says Associate professor Sara Modig who is leading the project.

The method has been tested in two steps. The result from the first round, where five healthcare centers and five control centers were included, showed that there were shortcomings around drug reconciliation (correct updated drug list), information to the patient about indication for treatment and training in geriatrics and pharmacotherapy. After completion, SÄKLÄK decreased

the prescription of potentially inappropriate drugs by, on average, 22% compared to 9% in the comparison group. The participants in SÄKLÄK were positive about working interprofessionally, but considered at the same time that the method was too time consuming [31-33].

As a result of the first study, a new study is now underway where SÄKLÄK has been adapted and simplified. A total of 14 healthcare centers participates and both administrative units and reviewers believe that the method is suitable to implement on a broad basis [34, 35].

Region Skåne has experience from the model utilised in its so called self-monitoring of drug use for the healthcare centers, above all the self-assessment, question content, feedback from reviewers and follow-up of proposed measures.



Differences between what is on the medication list and what is prescribed

Researchers at the CPF are investigating if the introduction of a new medical record system with a common medication list for specialised and primary care has led to the proportion of drug errors being decreased. The first sub-study indicated a certain improvement compared to 2018, but that many serious differences remain, for example, that the patient used a drug that was missing from the list of medicines in the current medical record system.

Drug-related problems cause unnecessary suffering for many patients, and high costs to society. In many cases the problems can be linked back to lack of information management and drug reconciliation. For example, differences are seen between the healthcare lists of medicines and what is prescribed in three out of four patients in Region Skåne healthcare.

A new medical record system in Region Skåne, is intended to link care throughout Skåne with common working methods, including common drug lists thereby reducing the risk of incorrect and incomplete treatments as well as health-related issues for the patient.

But has the occurrence of drug errors become fewer? That's what researchers at CPF are investigating in several studies. What is being studied is a description of the current situation, outcome of improvement work, if the amount of drug defects is affected by the introduction of the new

medical record system, what factors affect the amount of discrepancies in a common record system, and users' perceptions of the new system.

Results from the first sub-study where 400 journal drug lists (primary care, inpatient care and specialist clinics) were reviewed showed, among other findings, that 72% of drug lists contained at least one discrepancy, despite the fact that patients had recently had a healthcare visit.

The most common type of discrepancy was that the patient was using a drug, which was missing from the list of medicines in the current medical record system, followed by that drugs were on the drug list in the current medical record system despite the patient not using the drug.

– Even if the numbers indicate some improvement compared to 2018, it's still a clear patient safety problem that 2.5% of the discrepancies were assessed as very serious, says Associate professor Sara Modig who is leading the project.



The effect of health talks among 40-year-olds examined

Children in deprived areas run an increased risk of mental illness

Children in deprived neighbourhood areas run a significantly greater risk of suffering from mental illness compared with affluent neighbourhoods. This was shown in research from CPF and Stanford and Virginia Commonwealth University where both the family's (genetics and family environment) and the neighbourhood area's role for the mental health of children and adolescents were studied.

Researchers followed 500,000 Swedish children over an eleven-year period. The results also showed that the risk of a behavioural disorder is twice as large in deprived areas.

According to the research team at CPF, the research results can be used when planning preventive measures within municipalities and housing.

Through targeted health dialogues for 40-year-olds, Region Skåne hopes it can improve public health. CPF supports the project with scientific expertise and evaluation such as examining the short and long-term effects of targeted health talks as well as identifying important risk and health factors.

During the autumn of 2020, 40-year-olds in Regions Skåne were offered free health checks, sampling and health talks at a large number of healthcare centers. This was to review the target group's lifestyle habits and help prevent cardiovascular diseases.

CPF supports the project with scientific expertise and evaluation by examining the short and long-term effects of the targeted health talks regarding risk factors for cardiovascular diseases as well as examining the importance of social and molecular factors.

– The overall purpose is to optimise the method of targeted health dialogues and to improve public health through identification of important risk and health factors, says Professor Kristina Sundquist, project manager.

Factors that are tracked are lifestyle (physical activity, eating habits, alcohol use, tobacco use), biological risk factors (blood pressure, blood lipids, blood sugar, weight, abdominal obesity), psychosocial factors and heredity.

A biobank will also be established for identifying undetected molecular risk markers based on analyses of genes, gene regulation, proteins and metabolism.

The information is collected in a research database and linked to population registers for at least 10 years continuous follow-up of health outcomes.

A separate research project at CPF is also investigating the effects of health dialogues in patients with mental illness.



Content with health talk

Magnus Wasberger is one of the Landskrona residents who participated in the targeted health dialogues for 40-year-olds project, and his experiences are only positive.

I came to the health talk with the attitude that they will not find anything wrong with me, says Magnus Wasberger.

– The results were, for the most part, good. But I found out that my cholesterol level was not great, and that I should do something about this. I wouldn't have thought this before. To find out that you have poor levels in something and get guidance in how to improve this is very good.

Have you changed anything in your everyday life since the health talk?

– I got confirmation of some of the changes I started with two years ago; that was good and something I will continue with. A little strength training every day. Short, at home, nothing advanced. I have completely skipped sweets, cakes and soft drinks for weeks and replaced white bread with more high-fibre bread. It was difficult in the beginning, but if you persist over the weeks then it starts to flow.

– After the health talk, I drink more water and have started to

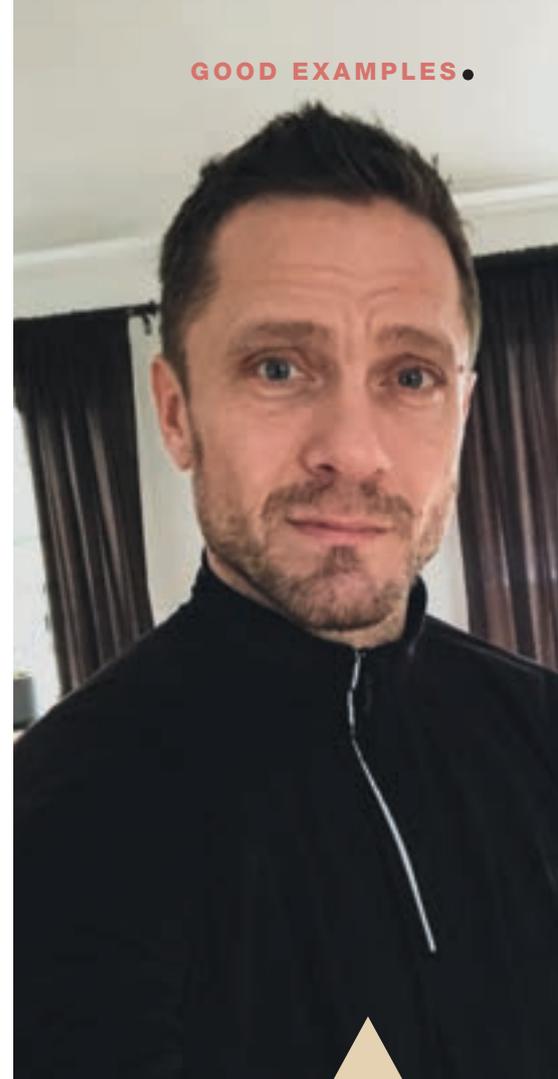
buy dairy products that have lower fat levels.

– I now understand how important it is to do a health check once in a while so that you feel healthy. There are things that can happen in the body that can't be felt or seen. And yes the longer you wait, the tougher it will be to correct and manage the eventual problem.

How are you today?

– I feel very good actually! I recommend everyone to do this. There is nothing to lose; just another chance to improve. You can really, with small means, help the body to feel better, and thus live a longer and more prosperous life. Perhaps it would have been good to have this type of conversation already at 30 years old, so you can in time put the brakes on any issues that start pointing in the wrong direction.

– I really hope there will be a new health talk in ten years so that I can check how things will be compared to now, when you have got all the good tips and helpful information.



To find out that you have poor levels in something and get guidance in how one can improve this is very good!



For those born prematurely – what happens in adulthood?

Important findings

Premature birth has been associated with cardiometabolic, respiratory and neuropsychiatric disorders among adults. However, the presence of comorbidities among adults that were born prematurely has been unknown.

Professor Kristina Sundquist and researchers at CPF and Mount Sinai have, in several articles in medical journals such as JAMA, BMJ, JAMA Pediatrics, Lancet Child and Adolescent Health, increased the understanding for health and multimorbidity in the growing group of those born prematurely of different ages and who require improved and more active treatment within healthcare services.

Results promote increased understanding for long-term health

The results of our research will boost our understanding of the long-term health of the growing population of survivors among those born prematurely and will improve the support for these patients and their families.



Lipid disorders and respiration problems

As a result of improved survival rates for premature born infants, clinicians to a higher degree are meeting patients born prematurely and need to understand the long-term health risks for these individuals.

We identified the long-term risks for several comorbidities in those hitherto largest and most comprehensive studies done. Our discovery of increased cardiovascular risk (CVD) suggests that adults that were born prematurely need early preventive evaluation and long-term clinical follow-up to reduce the risk of CVD.

We also identified the underlying causes of these risks, including lipid disorders, which will assist in screening and prevention. In addition, respiratory problems caused by sleep disorders are an important cause of cardiometabolic diseases and mortality.

Our results indicate that prematurely born children and adults need long-term follow-up that should be able to quickly detect and treat respiratory problems caused by sleep disorders.

The results of these studies will facilitate development of more effective clinical guidelines for long-term care of people born prematurely.

Increased risk of diabetes

In an article published in *Diabetology* in December 2019, with results from a large national cohort, being born prematurely was associated with type 1 diabetes risk and type 2 diabetes from childhood to early, or mid-adult age. Prematurely born children and adults may need early preventive evaluation and long-term monitoring of diabetes risk.



Mental illness increases the risk of dying in an accident

People suffering from a mental illness run a significantly higher risk of dying in accidents than the rest of the population. Contrary to what one expects, and what healthcare focuses on, it is deaths due to accidents that are more common than suicide among the mentally ill.

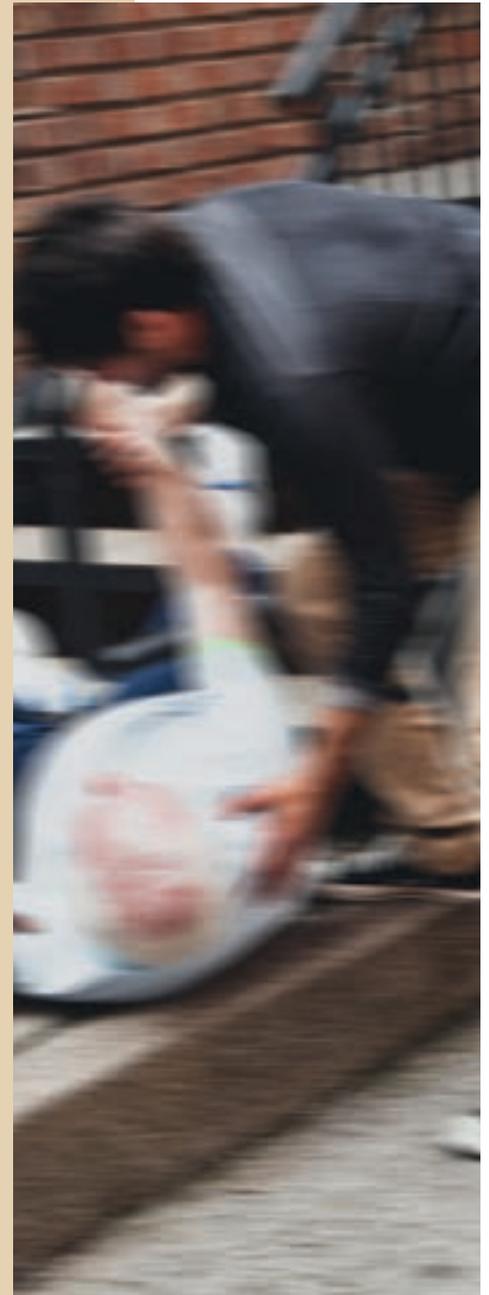
In an extensive study, CPF investigated the cause of death among the entire adult population in Sweden during the years 2001 to 2008.

Of the nearly seven million people studied, just over 22,000 died due to accidents. Of the researchers' results, it appears that just over a quarter of those who died were people with some form of mental illness.

The most common causes of death were accidental poisoning or falls. The risk of dying in a traffic accident was also elevated. The most vulnerable were those who abused alcohol but also other drugs.

Professor Jan Sundquist stresses that it is important that both primary care but also hospitals and psychiatric services are paying attention to this.

– In principle, staff in primary care meet the entire population and therefore have good opportunities to identify persons at risk. Often, only the risk of suicide is assessed in people who are mentally ill, but the risk of accidents with a fatal outcome is actually larger according to our study, he says.



Goal: improved care for congestive heart failure patients

HISS (Congestive heart failure in southern Sweden) is a project that aims to improve diagnostics and treatment of patients with congestive heart failure within Skåne primary care.

– The goal is for patients to receive adequate support and care and as a result increased quality of life and avoid life-threatening complications and unnecessary hospitalisation, says Professor Kristina Sundquist and Associate professor Veronica Milos Nymberg who are leading the project.

About 30,000 people in Skåne are suffering from the serious condition congestive heart failure which is, at the same time, the most common reason why people over 65 years of age are hospitalised. Despite the existence of good medication and treatment, the Swedish National Board of Health and Welfare has shown alarming figures that only about 55% of patients in Skåne receive adequate treatment, a combination of RAAS inhibitors and beta blockers, which is below the national target goal by 10%.

HISS (Congestive heart failure in southern Sweden) hopes to change that. The project, which is a collaboration between CPF, primary care and cardiology care, started in 2021 at seven healthcare centers in Skåne. A total of 17 healthcare centers

within different geographical areas in the region are included.

– The goal is to improve diagnostics and the treatment for congestive heart failure patients, and thus raise their quality of life, decrease the mortality rate and consequently have fewer hospital visits, says Professor Kristina Sundquist who is leading the project.

In addition to mapping diagnostics, treatment and prescribing, the purpose is to increase knowledge about congestive heart failure in primary care through targeted interventions and increase registrations into the Swedish Heart Failure registry.



Furthermore, researchers will establish a biobank and a cohort (surveys that follow the patients with congestive heart failure for a longer period of time for future follow-up studies). Researchers also

want to check if there are socioeconomic differences in how to survive cardiac arrest outside hospitals.

– We already know that socioeconomically vulnerable people have a particularly increased risk to suffer from congestive heart failure. Sharpened and early diagnosis and treatment is of utmost importance with regard to differences in both the aetiology and clinical framework, says Kristina.



Sharpened and early diagnosis and treatment is of utmost importance with regard to differences in both the aetiology and clinical framework.



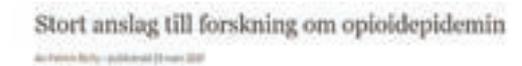
Media attention.



Postdoc Disa Dahlman's research about the LARO project gets attention (Läkartidningen – Swedish Medical Newspaper 2021)



Doctoral student Kenta Okuyama and colleagues showed that proximity to fast food outlets and exercise facilities do not matter much for the development of obesity (Science and Health 2020).



Professor Jan Sundquist is awarded more than SEK 28 million for research on opioid epidemiology (Lund University 2021).



A high-profile study led by Associate professor Jianguang Ji showed that the potency-enhancing drugs phosphodiesterase type 5, PDE5 inhibitors, where Viagra is the most known, has a cancer-inhibiting potential with the ability to improve the prognosis in men with colorectal cancer (Svenska Dagbladet 2020).



Susanna Dzamic and Associate professor Susanna Calling from CPF answer questions about corona on Swedish Radio P4 (Swedish Radio 2020).



MILESTONES
CPF

2012: 3 dissertations.

2012: AVC supervises 35 resident physician projects and 22 student/other projects.

Sverige valde önsketänkande i stället för kunskap



Covidpatient på Norrlands universitetssjukhus. Foto: Pontus ÖrnéTT Olof Ehrenkrona

olof.ehrenkrona@svd.se

Utförandet av ländernas arbete med Covid-19 blir allt fler. Nyligen kom det britiska parlamentets vidrörning med regeringen Johnsons missgrepp. I Norge har biträdande hälsöverdirektören Espen Nakstad i en nyutkommen bok om de norska erfarenheterna tuffat skarp kritik mot de svenska myndigheterna.

Dagens Nyheter publicerade i veckan en genomgång som visade att dödligheten på privata äldreboenden inte var högre än i de offentliga. Därmed fanns ett signifikant samband mellan smittans samhällspridning och den höga dödligheten generellt på äldreboenden. Coronakommissionen har tidigare redovisat samma koppling mellan stor samhällspridning och hög dödlighet i äldreomsorgen.

Statsvetenskaplig tidskrift utkom under sommaren med ett fjöd specialnummer om hur Sverige har agerat under pandemin. Någon större uppmärksamhet har artiklarna inte fått. Kanske står för att kritiken av Sveriges prestationer innebär en ned negativt omvärlden om medbegreppningen och särskilt public service-medieras insatser under krisen.

En pandemi är ett skarp test av folkhälsoarbetet. Har väl ett samhälle har lyckats ta till vara sina kunskaper och förtigheter i ett framgångsrikt smittskydd för att begränsa smittans spridning och effektivt omhändertara dem som insjuknar.

På så vis prövas både den rent medicinska och den socialmedicinska förmågan att lösa utvärder och begränsa de kollektiva

Professor Martin Lindström wrote an article on the Swedish covid strategy that was published in SSM Population Health, had a large international impact and was commented on in the op-ed pages of major newspapers in different countries. In Sweden, an extended version of the article was published in Statsvetenskaplig magazine and was reviewed in an editorial by Olof Ehrenkrona in Svenska Dagbladet on October 17, 2021 (SVD 2021).



Ökad risk för patienter vid vårdstrejk

En studie från en brittisk sjukhusvård visar att patienter som vårdades under en vårdstrejk hade en ökad dödlighet jämfört med patienter som vårdades under normala förhållanden. Studien visar att patienter som vårdades under en vårdstrejk hade en ökad dödlighet jämfört med patienter som vårdades under normala förhållanden. Studien visar att patienter som vårdades under en vårdstrejk hade en ökad dödlighet jämfört med patienter som vårdades under normala förhållanden.

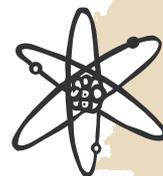
Associate professor Filip Jansåker and colleagues showed an increased mortality rate in patients when nursing staff went on strike (forskning.se 2020).



Filip Jansåker also profiled by Kristianstadbladet in 2020.

2012: The evaluation of the Diagnostic Center (DC) for primary care patients with diffuse symptoms of cancer begins.

2012: 143 scientific (peer-reviewed) publications.



Experimental laboratory



CPF is the only family medicine research unit in Sweden that has its own molecular medicine laboratory and also a separate biobank department with a large amount of samples collected in clinical studies at Skåne's healthcare centers.

In the laboratory, clinically active researchers and molecular medicine researchers collaborate.



Here we get new knowledge on molecular mechanisms linked to clinical studies and primary care matters.

In the project on group-based mindfulness for anxiety and depression patients, we could see, for example, that the levels of epidermal growth factor (EGF) decreased in connection with successful treatment, something that can be the basis for further studies on the role of the EGF with mental illness.

Additional molecular analyses showed that even macrophage migration inhibitory factor, telomere length, mitochondrial DNA, inflammatory proteins and microRNAs can be involved in mental illness [2-7].

Linked to the evaluation of the Diagnostic Center (DC), we found that the levels of circulating mitochondrial DNA were significantly lower in patients with tumours and other diseases compared to healthy controls, regardless of age and sex [8].

However, the level of circulating nuclear DNA can be elevated in patients with cancer compared to other diseases and also be associated with increased mortality [9]. This finding can form the basis for the development of new diagnostic and prognostic biomarkers.

Other new important publications from the laboratory include studies about venous thromboembolism [10-12], diabetes [13], cancer [14] and aortic aneurysm.



Two new biobank sample collections

In the heart failure study HISS and the evaluation of targeted health dialogues, we are building up two new biobank sample collections that both offer unique opportunities for clinically relevant research.

The HISS study creates a newly created primary care cohort of samples from mostly elderly, multi-morbid patients with congestive heart failure. The purpose is to identify new prognostic markers for heart failure, comorbidity and survival.

In targeted health dialogues, samples are collected from participants in age cohorts: 40-year-olds to start with and also 50-, 60- and 70-year-olds in a later stage of the project. With relatively young participants there exists the opportunity to identify biomarkers for serious diseases later in life including cardiovascular disease, diabetes, cancer etc, which opens up the path for early preventative measures.



Media attention.

20 miljoner till forskning om arvets och miljöfaktorernas betydelse vid alkoholmissbruk

Publicerat 23 februari 2020



Professor Kristina Sundquists forskargrupp vid Centrum för primärförebyggande har tilldelats en miljon kronor av National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health (NIH), USA.

Kristina Sundquist ska tillsammans med professor Kenneth Sundberg, forskargrupp vid Virginia Commonwealth University fortsätta sina studier om hur en miljö påverkar, bland annat den sociala miljöns betydelse vid utvecklingen av alkoholmissbruk. Projektet kommer att använda nationella och regionala data för att identifiera och utvärdera analytiska metoder för att förstå hur miljöerna i vår detta samhälle fungerar.

Kristina Sundquist har under tidigare år startat pågående projekt till National Heart, Lung, and Blood Institute, NIH för studier av ett värd för något blod och dess överlevnad vid hjärt-kärlsjukdomar. Ett annat pågående projekt, finansierat från National Institute on Alcohol Abuse and Alcoholism, tillämpar nya tekniker för identifiering av drog- och alkoholorganer.

– Jag känner mig mycket nöjd över det fortsatta förhållandet som vi har till Center för primärförebyggande och den analytiska kompetens som finns i forskargruppen vid Centrum för primärförebyggande, säger Kristina Sundquist.

– Forskningen kommer att ge viktig kunskap om orsaker, prevention och behandling av alkoholmissbruk.

Centrum för primärförebyggande (CPF) är ett samarbete mellan Region Skåne och Lund universitet. CPF:s mål är att minska sjukdom och dödsfall och förbättra hälsan.

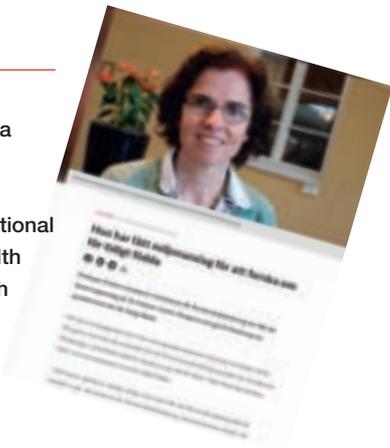
Senaste nyheter

- 2020-02-23 Trafikförsäkringens här: Europeiska unionens utvärderade drivkraft
- 2020-02-23 COP26: tilldelning i fokus för utvärdering på klimatförändring
- 2020-02-23 Blommar i blod: förstapå ett 2-årigt försök är över
- 2020-02-23 Diabetesforskningens samarbete kan vara väg för ny behandling
- 2020-02-23 EU's stora framtidsbilder

Professor Kristina Sundquist was awarded SEK 20 million by the National Institutes of Health for research on heredity and the significance of the environment for alcohol abuse (Lund University 2020).



The magazine Fokus reports that Professor Kristina Sundquist is the most cited medical researcher at Lund University in international journals (Sydsvenskan 2019).



Professor Kristina Sundquist was awarded SEK 26 million by the National Institutes of Health (NIH) for research on those born prematurely (Region Skåne's news site 2018).

2013: Atrial fibrillation project FIRST starts at 25 health centers in Skåne under the direction of Professor Kristina Sundquist.



MILESTONES
CPF

2013: A scientific article by Susanna Calling and colleagues on 'Heredity of atherosclerosis' [38] gets national media coverage and once again sheds light on CPF's pioneering research.

2 miljoner dollar till forskning om bostadsområdets inverkan på hjärt-kärlsjukdomar

2014-08-19

En forskargrupp vid Centrum för Primärvårdsforskning, ett samarbete mellan Lunds Universitet och Region Skåne, har tilldelats två miljoner dollar (cirka 14 miljoner svenska kronor) för att fördjupa kunskaperna i det välkända samband som finns mellan bostadsområdets socioekonomiska struktur och hjärt-kärlsjukdomar.

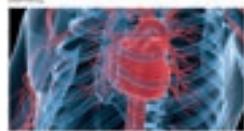
Forskargruppen, som leds av professor Kristina Sundquist, kommer bland annat att studera sjukdomsframkallande mekanismer, orsakssamband samt gen-miljö interaktioner.

Det fyraåriga projektet finansieras av National Heart, Lung, and Blood Institute, National Institutes of Health, USA, och kommer att utföras i samarbete med Stanford University och samarbetspartners vid Lunds Universitet och Region Skåne.

Ett flertal faktorer såsom arv, ålder, kön, levnadsvanor, och social miljö har betydelse vid uppkomsten av hjärt-kärlsjukdomar. Det är dock inte känt hur olika faktorer samverkar vid uppkomsten av sjukdom. Projektet kommer att använda nationella och regionala data från olika källor och avancerade analytiska metoder.

Professor Kristina Sundquist was awarded SEK 14 million for research on the significance of neighbourhood area for cardiovascular risk (Lund University 2014).

Kranskärslsjukdom beror på generna – ej på familjevänor



Peris (Helsingborgs Dagblad)
 Ett stort antal studier har tydligt visat på sambandet mellan ärftligt medveten släkt. Det som däremot varit svårt är att förstå hur sjukdomen överförs via generna eller via en så kallad familjevänor. En ny studie från Centrum för primärvårdsforskning, profilerad i American Heart Journal, visar att generna överförer en viktig del av sjukdomen, inte enbart familjevänor, utan även sjukdomen. Detta är professor Kristina Sundquist, studerade sjukdomen.

A study by Professor Kristina Sundquist and colleagues pointed out the importance of heredity for coronary heart disease (Vetenskap och Hälsa 2011).

2013: AVC arranges 31 group tutorials around Skåne and supervises 40 projects (resident physician projects, students, other projects) individually.



Article on the atrial fibrillation study FIRST led by Professor Kristina Sundquist (Sydsvenskan 2017).

Skåne

Ny studie har förhindrat stroke bland skånska patienter

28 maj 2017 12:00

En studie av 5 000 skånska patienter har lett till att fler får behandling mot förmaksflimmer och minskad risk för stroke. Men mörkertalet är stort och sjukvården har svårt att fånga upp människor i riskzonen, säger Kristina Sundquist, professor vid Centrum för primärvårdsforskning i Malmö.

The FIRST study was noted also by Helsingborgs Dagblad in 2017.





Media attention.



Professor Jan Sundquist was awarded the prestigious ERC Advanced Grant that is given to Europe's most established and world leading research leaders. The research is about factors that can protect from mental illness and addiction issues experienced by first and second generation immigrants (Lund University 2018).



Dagens Nyheter draws attention to research by researchers at CPF who showed that neighbourhood area affects children's mental health (DN 2015).



Elsevier paid attention to the research on the connections between deprived neighbourhood area and risk of mental illness (Elsevier 2015).



2014: The first results from the randomised controlled study of group-based mindfulness is published in the prestigious journal British Journal of Psychiatry.



MILESTONES
CPF

2014: Professor Kristina Sundquist is awarded SEK 14 million by the National Institutes of Health (NIH) for research on the correlation between the residential area's vulnerability and cardiovascular disease.



Swedish Radio highlights research from CPF that showed that medication for ADHD does not increase the risk for drug abuse (Swedish Radio 2014).



Sydsvenska Dagbladet draws attention to a research project at CPF which examines the effect of mindfulness in schools (Sydsvenskan 2017).



Svenska Dagbladet profiles CPF's research project on mindfulness (SVD 2014).

2014: A study showing that ADHD medicine does not increase the risk of drug abuse attracts a lot of attention and is named the article of the month at LU's Faculty of Medicine [39].

2014: 6 dissertations.

2014: AVC arranges 27 group tutorials and supervises 27 resident physician projects and 16 other projects individually.

2014: 132 scientific (peer-reviewed) publications.

Courses in research methods

Introductory course in medical science for resident physicians

CPF arranges an eight-day course in research methodology and quality improvement work for resident physicians. The course is given on behalf of Region Skåne and the idea is that the participants should meet the Swedish National Board of Health and Welfare's course requirements in the scientific sub-goal after the training review.

The course is usually given four times per year with 25 participants per course, but due to long reserve lists extra courses were held in 2020/21. The course engages the majority of researchers and the AVC coordinators at that contribute to teaching and supervision. By summer 2022 CPF has arranged 47 introductory courses with approximately 1,000 participants.



Basic research methodology for family medicine: 30 higher education credits

CPF co-finances and participates in the course 'Basic research methodology for family medicine' which has been given by the Department of Clinical Sciences in Malmö ever since 1989. The course, which runs over three semesters, is ideal for all professional groups within primary care. Resident physicians also receive support here in carrying out all parts of the compulsory ST thesis. The course includes several of the compulsory doctoral courses and is often used as a basis for continued research in primary care.



2015: 110 scientific (peer-reviewed) publications.

MILESTONES
CPF

Research support in primary care

In addition to the scientific guidance offered by CPF's researchers on both the regional and university side, CPF's unit has a group of employees who work with direct support to primary care in research and development issues.



Statistics and databases.

We have five statisticians (of which two are associate professors) at CPF that provide supervision and education in study design, statistics and analysis.

In addition to individual guidance, two 'statistics open houses' are arranged every semester where everyone in primary care with different types of design and analysis questions are welcome.

Two database managers provide extra support.

Research coordinator.

A research coordinator (associate professor) who is also an AVC team leader helps in coordinating clinical studies, education and guidance, and acts as a sounding board in regulatory issues (such as ethical applications) and study design.

There is also a project assistant that supports in all practical parts of clinical projects.

Support with writing and translations.

Our native English speaking science editor edits scientific manuscripts, helps with translations from Swedish to English and is responsible for the CPF newsletters that are sent out to primary healthcare centers several times a year.

2015: AVC arranges two half-day courses in research methodology for clinical resident physician supervisors to increase their competence to supervise scientific projects.

2015: AVC arranges 25 group tutorials and supervises 28 resident physician projects and 24 doctoral students individually.



Media attention.

Avslöjar anlag för blodpropp

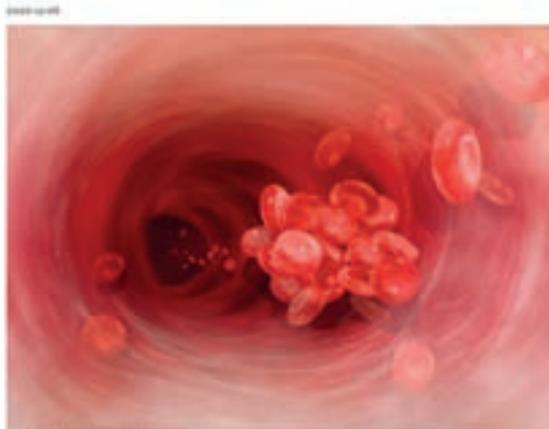


Bild: Shutterstock.com

Ny teknik inom den genetiska forskningen har gjort det möjligt att kartlägga och analysera arvs massa billigare och snabbare. Ärfylliga sjukdomar kan påverkas med skräddarsydda behandlingar, så kallad precision medicin.



Bengt Zöller Foto: Hanna Riutta

Bengt Zöller, distriktsläkare och professor i allmänmedicin vid Lunds universitet, har tillsammans med forskarkollegor upptäckt en ny mekanism som bidrar till blodproppar, venös tromboembolism (VTE). På ett nytt innovativt sätt har de analyserat data från Malmö Thrombophilia Study. De fann genetiska varianter i flera olika gener som kodar för proteiner som är nödvändiga för att blodet ska koagulera på rätt sätt. Dessa genetiska varianter ger uppbav till proteiner som fungerar sämre eller inte alls, något som kan minska koagulationen och skydda mot VTE. Varianterna var därför vanligare bland friska individer än bland individer med VTE.

– Vanligtvis hittar man mutationer som är vanligare bland patienter än bland friska, och i detta fall var det tvärtom. Det beror på att mutationerna skadar

Professor Bengt Zöller gets attention for his research on the genetics behind venous thromboembolism (Vetenskap och Hälsa 2020).

Större risk att drabbas av blodpropp om man är lång

UPPDATERAD 6 SEPTEMBER 2017 PUBLICERAD 6 SEPTEMBER 2017

En ny studie visar att ju längre man är desto större är risken för att drabbas av blodpropp.

– När flödet är för långsamt kan man drabbas av blodpropp, säger Bengt Zöller en av forskarna bakom studien.

För 60-åriga män över 190 centimeter är risken att drabbas för blodpropp 7 procent. För kvinnor över 185 centimeter i samma ålder är risken 6 procent. Samtidigt understryker Bengt Zöller, en av forskarna bakom studien, att det är en av flera riskfaktorer.

– Man kan väl säga att man ska vill inte vara så orolig, utan det är en av alla riskfaktorer. Man får ofta lägga samman flera riskfaktorer för att man ska drabbas av blodpropp.

LÄS MER: [Släckades till anstekt med blodrosor i benet](#)

Förklaringen tros vara att med längre ben och därmed längre blodkärl blir det svårare för blodet att flyta tillbaka till hjärtat.

SVT highlights Professor Bengt Zöller's research showing that the risk of venous thrombosis increases if you are tall (SVT 2017).



A study by Senior lecturer Jianguang Ji shows that lactose intolerance can have a protective effect against cancer (Science Nordic 2014).

2015: Ulf Jakobsson becomes Skåne's first district nurse to be appointed as a professor.

Ärftlighet vid åderförkalkning

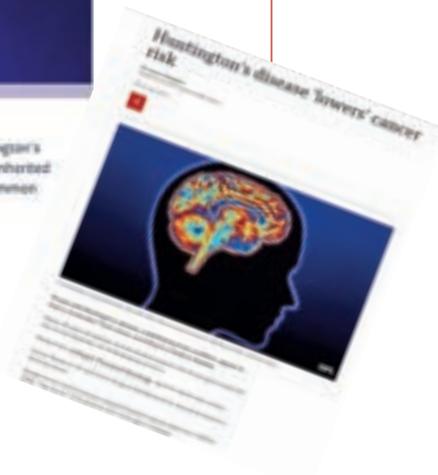
Risken att drabbas av åderförkalkning i stora kroppspulsådern i tidig ålder ökar kraftigt om ens föräldrar eller syskon drabbats av det. Den är nio gånger högre, visar forskning vid Lunds universitet där fyra former av åderförkalkningssjukdomar undersöks.

Svenska Dagbladet draws attention to the study by Associate professor Susanna Calling and colleagues concerning heredity of atherosclerosis (SVD 2013).



WEDNESDAY, April 11, 2012 (HealthDay News) -- People who have Huntington's disease are much less likely to develop cancer than people without the inherited disorder, according to a new study that suggests the diseases share a common genetic mechanism.

Senior lecturer Jianguang Ji's research on the link between Huntington's disease and reduced cancer risk (Healthday 2012) got attention. The study was also picked up by the BBC (BBC News 2012).



Höjd lön förlänger livet

Intervjuvärd utan plösslipper noggs rik att stå i linje, enligt forskare
 Få löneförhöjning och lev längre.
 Det är sant – åtminstone för dem som haft en hjärtinfarkt. Det visar en studie vid Lunds universitet, skriver Sydsvenska Dagbladet.



Professor Juan Merlo's research showed that increased pay prolongs life expectancy (Aftonbladet 2011).

Our most important research contributions

...if we may say so ourselves

All change requires people with desire and commitment. Many such people have been involved in the improvement of primary care research. Without them we would not be where we are today. We invited researchers and doctoral students at CPF to rank what their most important research contribution to primary care and public health has been since they started at CPF. Presented here are some examples (in no particular order).



Jianguang Ji
Physician, Senior lecturer

– We have an ageing population in Sweden and thus we can expect an increasing incidence of colorectal cancer in the near future. Effective primary prevention measures are therefore needed to a greater extent. We have identified substances, such as PDE5 inhibitors (e.g. Viagra), melatonin etc, which have been shown to reduce the risk of colorectal cancer and which may be used if the effects can be confirmed in randomised controlled trials [61-63].



Sara Larsson Lönn
Statistician, PhD

– Through a number of different articles based on our Swedish registers, we have contributed to the increased understanding of the importance of genetics for our behaviour, especially with regard to addictive disorders. Knowledge that our conditions are individual is an important piece of the puzzle, both to be able to identify at risk individuals, and also for an increased understanding of why individuals react differently to the same exposure [93, 94].



2016: CPF arranges a national one-day conference: "The primary care of the future". Among the lecturers are Göran Stiemstedt, state investigator, Magne Nylenna, professor of social medicine at the University of Oslo and director of the National Knowledge Center for the Health Service, the Norwegian equivalent of SBU and Petter Brélin, chairman of the Norwegian Association for General Practice.



Filip Jansåker
Resident physician,
Associate professor

– Through Swedish register research with CPF, we have identified risk factors for, and connections between, common and serious diseases in women in Sweden [51, 57].

In collaboration with Copenhagen University Hospital, we have identified that ill patients with blood infections have a 5% increased risk of dying during a healthcare personnel strike (data from a strike in Denmark 2008) [58]. These findings may lead to better prevention strategies in the future. I have disseminated my results in the media as part of the so called 'third task' assignment.



Per-Ola Forsberg
Family physician,
PhD

– We have done a study that shows that there is a causal relationship that exists between the residential area's socioeconomic status and the individual's risk of developing cardiovascular disease [101]. I have highlighted my results through presentations at meetings, for example a poster presentation at The Future of Primary Care conference at the Clinical Research Center in Malmö, where the general public was invited.



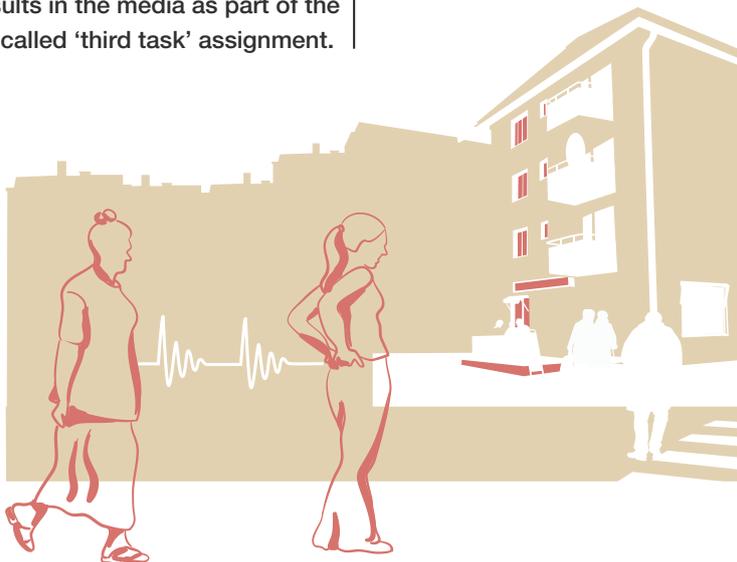
Susanna Calling
Family physician, Associate professor,
Research Manager in Primary Care

– PUSH ME is a study where hypertension patients receive SMS with lifestyle advice for six months and are compared with a control group regarding changes in blood pressure, blood lipids, weight, quality of life, etc. [48].

I am also involved in conducting eHealth studies – studies of digital visits which, among other things, have shown that antibiotics are not prescribed to a greater extent during digital visits than physical visits, in contact with common infections in outpatient care [49].

We have seen an important trend change in the population of different lifestyles and risk factors for cardiovascular disease via Statistics Sweden's 'Survey of lifestyles'. For example, self-rated health of young people deteriorated between 1980 and 2004, while self-rated health improved among older people during the same period. At the same time, self-reported anxiety increased in young people [50].

Other important contributions are my participation in two collaboration initiatives; eHealth@LU and early diagnosis of Alzheimer's disease.



2016: 3 dissertations.

2016: AVC arranges 34 group tutorials and supervises resident physician projects and 17 other projects individually.

2016: 124 scientific (peer-reviewed publications).



Ashfaque Memon

Physician, University lecturer

– In the lab, we have identified new biomarkers for deep vein thrombosis and showed that the combination of osteopontin and activated protein C inhibitor complex was best at distinguishing people with deep vein thrombosis (sensitivity 89% and specificity 84%, which is higher than current tests (D-dimer) for deep vein thrombosis have shown) [11].

In collaboration with cardiologists at Skåne University Hospital, we have identified multiple proteins that are associated with aortic aneurysm diameter and growth. We were able to show that higher plasma levels of myeloperoxidase protein were associated with faster growth regardless of diameter at baseline measurement [15].

Another important finding we made by using a new ‘droplet digital PCR’ technique was that we could show that mitochondrial dysfunction can be a molecular risk factor for type 2 diabetes, regardless of other clinical risk factors [13].

To support molecular research in primary care, we are developing an introductory course in laboratory science. Its purpose is to inspire primary care staff to combine clinical activities with experimental research.



Tommy Jönsson

Family physician, PhD, AVC coordinator

– One of my most important research findings for primary care/public health is that primary care patients with type 2 diabetes had better glycaemic control, blood lipids, blood pressure and greater weight loss, reduction of waist measurements and satiety per calorie with a Paleolithic diet compared to a diabetes diet [54].

We have also found that gluten proteins block the body’s saturation regulatory system [55] and that chronic low-grade systemic inflammation was lower among residents of Kitava, Papua New Guinea, compared to Swedish controls, thus indicating a lower cardiovascular risk for these populations [56].

An important contribution to primary care research is that I was the initiator of and participated in the project group that in 2013–2019 introduced REDCap at the Library and ICT at the Faculty of Medicine at Lund University and since 2018 I am also a member of REDCap’s steering group. REDCap is a tool that enables all medical researchers (free of charge) to collect data in research studies in a secure manner in accordance with GDPR.



Beata Borgström Bolmsjö

Family physician, PhD, AVC coordinator

– I have been involved in showing that medication reviews can reduce time for hospitalisation for patients living at socially supported housing for the elderly (SÄBO) [64]. I have also explored older Swedes’ experience of e-health [65].



Anders Halling

Family physician, Professor, AVC coordinator

– I have for several years worked with measuring multi-multimorbidity and social differences as important parts of primary care. I have also worked with ACG Case-Mix before it began to be used for resource distribution in Swedish primary care [95-99].



MILESTONES
CPF

2017: The PUSH ME project starts. Evaluation of health advice via SMS.

2017: Course anniversary for "Introductory course in medical science and quality improvement work" for residents in family medicine had been arranged 25 times.



Disa Dahlman

Resident physician, Associate professor, AVC coordinator

– We have shown an excess mortality rate in breast cancer [41] and prostate cancer [42] in women/men with drug problems, as well as morbidity in cervical cancer in women with drug problems [43].

We have also shown links between opioid overdose with/without fatal outcome and socioeconomic factors in Sweden [44]. And we have found a low health competence and large care barriers in the form of stigma in patients in drug-assisted rehabilitation with opioid treatment (LARO) [45, 46].

I work with outpatient primary care for severely mentally ill patients in LARO treatment and in treatment homes. The project (it is called PRIO = primary care in LARO) is regularly presented within the framework of the "third task" and was recently noticed in *Läkartidningen* (Swedish medical newspaper).



Xinjun Li

Physician, Senior Lecturer

– Through several studies, we have gained new knowledge about the associations between sociodemographics, origin, living environment and health. In the long-run, the results can be used to provide a more equal and better primary care.

One of our recent studies demonstrates a link between sociodemographic factors and uncomplicated cystitis in young women [51].

Another important study found an increased risk of congestive heart failure in diabetic patients if they lived in deprived areas. The results can be significant when planning the distribution of resources in primary care and also for doctors and other primary staff who meet this patient group [52].

An earlier study showed an increased risk of diabetes in people who moved to Sweden and live in deprived areas [53].



Veronica Milos Nymberg

Family physician, Associate professor, AVC coordinator

– I have participated in the establishment of a research network consisting of different professions with a focus on e-health.

We conduct studies on broad issues, such as adherence to treatment guidelines, care consumption and the impact on the staff's work environment [65].

I conduct both registry and intervention studies in primary care with a focus on prevention and treatment of cardiovascular disease, all with the support of CPF's expertise and resources [80].

I have also contributed to raising the evidence level in primary care by holding regular seminars on evidence-based medicine for different professional groups.



2017: 8 dissertations.

2017: AVC arranges 32 group tutorials and supervises 55 resident physician projects and 36 other projects individually.

2017: 135 scientific (peer-reviewed) publications.

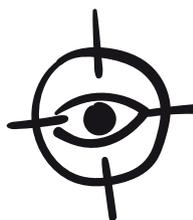


Juan Merlo

Chief physician in social medicine,
Professor

– Our research strives to understand the underlying factors that lead to geographical and socioeconomic injustice, as well as gender differences, in health and care utilisation. We conduct research in drug epidemiology and healthcare epidemiology to investigate the use and effect of various drugs, as well as the quality of healthcare. This is often done through doctoral student projects. We have published about 200 publications in the field, here are some examples [66-79].

Our research group has been successful in receiving continuous support from the Swedish Research Council (SEK 14.5 million during the period 2011–2021). A main principle in the research I lead is to study issues that are of high relevance to Region Skåne's interest in delivering good care that is knowledge-based, equal, safe etc.



Martin Lindström

Chief physician in social medicine,
Professor

– I have done longitudinal studies of social capital and mental health and health-related lifestyles that have also been analysed with multi-level analyses [85, 86].

I have also done longitudinal prospective cohort studies, funded with support from the Swedish Research Council, that are based on a database from the public health survey 2008 in the adult population (18–80 years) in Region Skåne as baseline [87,88].

I have recently received a grant from the Swedish Research Council to study sexual identity where the bisexual group, in particular, has been shown to have more health risks [89, 90].

There has been a great deal of national and international attention regarding my review of the Swedish strategy for dealing with the pandemic during the first wave in the spring of 2020 as well as my article in SSM Population Health [91, 92].

I have regularly been the course coordinator of the course "Epidemiology and biostatistics" at the Master of Public Health (MPH) program and I have taught the international program ESPMIC in family medicine in the autumn of 2021 where specialists and resident physicians in family medicine from all over the world participated.



Lars Garpenhag

Postdoc

– In a mixed-methods study, we found that patients in drug-assisted rehabilitation in opioid treatment (LARO) in Malmö, as a group, show a lack of health competence, and that there are strong experiences of stigma in their encounters with healthcare. Both results are important for us to be able to improve the group's access to primary care through clinical interventions [45, 46].



Anita Jensen

PhD, Team leader for Culture and Health, PUE

– I belong to CPF's sister unit, the primary care education unit, PUE, but have also received research funding to evaluate the effect of culture on prescriptions in primary care, which is done with the CPF's support.

I have previously mapped the importance of culture for mental health in Scandinavia [100]. I arrange the course Art, Culture and Health (7.5 credits) that is aimed at healthcare staff.

2018: Professor Jan Sundquist is awarded the prestigious ERC Advanced Grant awarded to Europe's most established and world-leading research leaders.

2018: Professor Kristina Sundquist is awarded SEK 26 million for research on disease risk in prematurely born people.



Anders Beckman

Family physician,
Senior lecturer

– My research has shown inequality in healthcare utilisation after the implementation of choice of care, which was included in the National Audit Office's report RIR 2014: 22 [59].

I have also shown reduced antibiotic prescribing in primary care [60]. I have had a major educational responsibility regarding the training of doctors, via the 30-credit course 'Basic research methodology for general medicine'.



2018: AVC arranges 26 group tutorials and supervises 45 resident physician projects individually.



Peter Nymberg

District nurse,
PhD

– I defended my dissertation in 2021 in the area of primary care/ public health with a focus on li- festyle change. This included stu- dies on the association between self-rated health and venous thrombosis in women [82] and an evaluation of a lifestyle clinic at a healthcare center [83].

I also did a pilot project with a randomised controlled trial in primary care that examined the effect of mindfulness to stimulate motivation for physical activity [84].

I have been involved in the National Board of Health and Welfare's investment in preven- tion and lifestyle work in people with mental illness (2-year grant 2019 and 2020). This has now been transferred to a research project.



2018: Family physician Anders Halling becomes professor in general medicine.



Ulf Jakobsson

District nurse, Professor,
AVC coordinator

– Right now I'm coordinating an interesting project concerning "Screening for atrial fibrillation in primary care". It is a project that has a clear clinical connection and focuses on prevention, such as what primary care should work more with.

My medical history research regarding 'District nurse history & professional development' has resulted in several publications and the research project on 'Long-term pain in the elderly' is important.

I have arranged 'Try out research' for nurses, physiothera- pists and occupational therapists on many occasions. The project has resulted in reports, confe- rence abstracts and scientific publications.

I also have several tasks which in various ways benefit primary care and research. For example, I am a member of the Ethical Review Authority as well as a teacher and primarily responsible for the district nurse education at Lund University where I have carried out a major overhaul and revision of the entire education program.

2018: 12 dissertations.

2018: 134 scientific (peer-reviewed) publications.



Jan Sundquist
Family physician,
Senior Professor

– My most important contribution to CPF is clinical, experimental and epidemiological studies focusing on mental illness in primary care, which we have seen an alarming increase in. There I have had a special focus on how mental illness starts at a young age and how more patients with mental ill-health (depression, anxiety, stress-related problems) should have access to primary care without the costs rising.

I also have an ongoing project with funding from the European Research Council (ERC) where the focus is on social factors and how they are linked to mental illness and substance abuse in vulnerable groups in society.



Xiao Wang
Physician, Associate professor in
experimental family medicine

– In a project on mental illness, we have found that circulating microRNA, miR-144-5p, plays an important role. Plasma levels of miR-144-5p were associated with depressive symptoms and may be a potential biomarker for pathological processes involved in the development of mental illness [7].

We also found that higher levels of macrophage migration inhibitory factor (MIF) in baseline measurements predicted better long-term outcomes of psychotherapeutic treatment for depression and anxiety. MIF is thus a possible biomarker in the choice of treatment for mental illness [81].

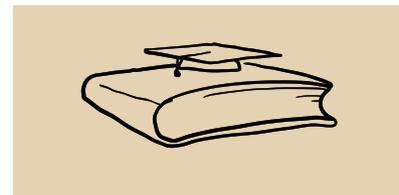
In a project on venous thromboembolism (VTE), we found that global DNA methylation is associated with primary VTE and that higher levels of global DNA methylation can predict recurrence of VTE in men [12].



Emelie Stenman
AVC Team Leader,
Associate professor

– I was involved in coordinating the scientific evaluation of the Diagnostic Center for primary care patients with diffuse, severe symptoms. We could see that the time goals were largely met at the DC, that the times for information on cancer diagnosis and start of treatment were shorter compared to a matched control group at another hospital, that patient satisfaction was high and that the workflow in primary care needs to be reviewed to facilitate compliance to the process [20-22].

Another important contribution is the development of our introductory course in medical science and quality improvement work for resident physicians, which we have provided since 2011. And there is also the administrative tasks with academic healthcare centers (AVC) which I help to lead and develop.



2018: CPF arranges a theme day about sick leave for primary care. Guest lecturer Dr Karin Starzmann from University of Gothenburg.



Kenta Okuyama
PhD student

– We found that proximity to fast food outlets and exercise facilities does not have much significance for the development of obesity among middle-aged people. This is important knowledge, both politically and for future research, on the identification of risk factors to reduce the growing problem of obesity in society [47]. The results were disseminated in national media. We have also found that older people in deprived areas are at greater risk of suffering from pain related problems.



Kristina Sundquist
Family physician, Professor, Director CPF och KCP

– The most important contributions during my time at CPF are to have developed the international collaborations in, among other places, the USA, which has promoted family medicine research in Sweden through an exchange of methodologies and theories. This has been done with the support of the National Institutes of Health (NIH) in the USA.

I have initiated an extensive family medicine collaboration with several universities in Japan, which has led to contacts between both experienced researchers and newcomers. In this way, both research and the clinic have been strengthened.

Through CPF's unique experimental family medicine lab, we have also been able to clarify common mechanisms behind somatic and mental illnesses that are common in primary care.

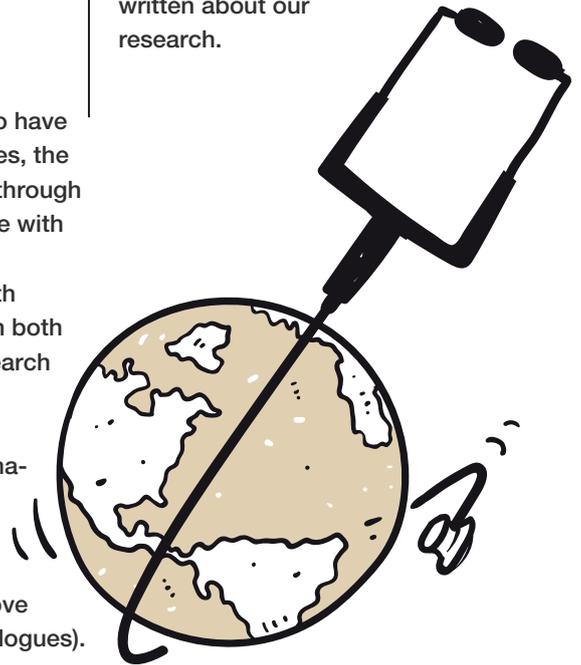
Finally, I have initiated several newly created clinical studies where my hope is to create new cohorts with biobanks that can be used by researchers for a long time to come, all to improve public health (including the HISS study and Targeted Health Dialogues).

2018: Try-out-research for nurses, occupational therapists and physiotherapists starts and is led by Professor Ulf Jakobsson.



Ardavan Khoshnood
Physician,
Associate professor

– We have through our research been able to contribute to a much better and deeper understanding of serious crime in Sweden that has an enormous negative impact on public health. Today we know a little more about whom the perpetrators of such serious crimes are. Our studies of the perpetrators received a lot of attention; both national and international media have written about our research.



2019: Professor Kristina Sundquist is appointed by the board as the new director for CPF.

CPF's open days **a hit**

On October 6th, 2016 and April 4th 2019, the Agardh lecture hall at the Clinical Research Center (CRC) in Malmö was filled with interesting lectures and debates about the existing as well as the future of primary care where CPF together with KCP invited many participants.

October 6th 2016

Primary care of the future

The day was started by the regional councillor Anna-Lena Hogerud. Pro vice-chancellor Bo Ahrén of Lund University spoke about primary care research as a strength for Lund University.

From Norway came Petter Brelin, chairman of the Norwegian Association for Family Medicine and Magne Nylenna, professor of social medicine at the University of Oslo and director of the National Knowledge Center for health services. Both highlighted the Norwegian GP arrangement from different perspectives. The researcher Göran Stiernstedt spoke on the topic "More resources for primary care – but how-to." Several of CPF's researchers presented new research findings.

Outside the auditorium, one could view scientific posters and take part in different demonstrations. The day ended with an interesting panel debate about the future of primary care.



2019: District physician Bengt Zöller becomes professor in general medicine.

2019: Associate professor Jianguang Ji becomes a senior lecturer in cancer epidemiology with a focus on primary care.

April 4th 2019

The road to the future of primary care

The main speaker was Anna Nergårdh, national special investigator on coordinated development for good and close care.

In addition, the audience was invited to research presentations, poster exhibitions and try-out activities as well as speeches by Erik Renström, dean and Professor of medicine and health sciences, Birte Sandberg, chairperson in the primary care board, Professor Jan Sundquist, as well as Professor Kristina Sundquist who discussed family medicine research: a concept in change.

From Gothenburg came Christer Andersson, director and operations manager at Bergsjön healthcare center and BVC AB, Gothenburg. He spoke about his experiences developing a healthcare center in a deprived area.

Åke Åkesson, operations manager at the healthcare center in Borgholm, Öland, outlined the acclaimed Borgholm model.

Heidi Stensmyren, chairperson of the Swedish Medical Association, stressed that a national primary care reform entails listing on physicians.

The day ended with an appreciated panel debate hosted by moderator Lisa Kirsebom.



2019: Kristina Sundquist gets a new large National Institutes of Health (NIH) grant close to 20 million kronor together with Virginia Commonwealth University. The research is about the link between suicide and alcohol and drug abuse.

2019: CPF arranges the one-day conference 'Roads to the future of primary care'.

2019: Kristina Sundquist is the most cited researcher in the field of medicine at Lund University and is the seventh most cited medical researcher in Sweden.

The collaboration between Region Skåne and Lund University is governed by an agreement. The regional research grant finances staff costs for employees, AVC coordinators, tandem employees and so called try-out researchers/prospective doctoral students with employment at Region Skåne.

Lund University employees are funded with different external research grants.

Other administrative expenses as well as rent for office space are financed with income from clinical services, supervision, individual education as well as external funds.

Economic perspective

The support from Region Skåne creates conditions for research in primary care.

Research does not generate revenue in the classical sense. The support from Region Skåne thus creates conditions for starting and running research projects in primary care where the patients are, as well as increasing the scientific competence in primary care. Thus, primary care is developed in a way that benefits patients and, at the same time, makes it an attractive workplace for the staff who wish to develop primary care through research.

The external research funds that adds to the support from Region Skåne, “spill over” to in primary care when clinically active doctoral students and postdocs can attend and merit in externally funded projects under the supervision of senior researchers. In this way, young researchers can eventually become independent researchers that finance their own research time and develop Region Skåne's primary care further.

Fees from participants are rarely rele-

vant as CPF's mission, according to the above agreement, is that the funds shall be used to conduct research, education and development work in primary care. However, a course fee has been charged for CPF's course in research methodology for resident physicians in order to cover all course costs.

There is also a standard expense that finances the supervision of resident physician essay tasks. This was introduced to ensure that PhD certified staff in primary care get time to help with this, as the need has increased sharply in recent years because of the large number of resident physicians who have to do a compulsory essay.

Reimbursement for scientific supervision and examination of students is factored in from each university/college to cover working hours for CPF employees who supervise students.



External funds

External funds for various research projects are sought continuously. At present there are currently five researchers who have 'ALF projects' (Professors Kristina Sundquist, Bengt Zöller, Patrik Midlöv, Martin Lindström and Ulf Gerdtham). Another four researchers have 'ALF younger' (Associate professors Susanna Calling, Filip Jansåker and Disa Dahlman and Postdoc Miriam Pikkemaat).

2019: 4 dissertations.

2019: 146 scientific (peer-reviewed) publications.

2020: Associate professor Ashfaque Memon becomes university lecturer in experimental family medicine at Lund University.

2020: CPF participates in developing a digital knowledge bank for nurses in primary care.

Front foot forward

Director Kristina Sundquist has been involved from the start by laying the foundation for CPF's good reputation. The three pillars: epidemiological studies, clinical patient-centered studies and the experimental laboratory make CPF exceptional. Despite the success and high tempo of work, neither she nor CPF will ease off the pace but are instead driven to continuously meet new challenges.





MILESTONES
CPF

2020: A study on potential cancer inhibiting effect of PDE5 inhibitors (e.g. Viagra) is published in the well-regarded Nature Communications and garners great attention [40].

2020: The evaluation of targeted health talks at Skåne's healthcare centers starts under the direction of Professor Kristina Sundquist.

2020: Introductory course in medical science and quality improvement work for resident physicians is converted to an online version due to the covid-19 pandemic and we could therefore give an extra course in the spring.

2020: 5 dissertations.

2020: AVC arranges 30 group tutorials and supervises 47 resident physician projects and 13 other projects individually.

2020: 149 scientific (peer-reviewed) publications.

MILESTONES
CPF

2021: CPF arranged a total of 45 introductory courses in medical science and workplace practice with about 1,000 participating ST doctors, of which about half were in general medicine.

When director Kristina Sundquist is asked just what is CPF's main success factor, she does not hesitate to answer.

– The personnel. We have many brilliant brains that work hard, are passionate and driven by knowledge and curiosity. With their fervour and commitment it becomes a great deed. It is a privilege to be active in such an environment where new thoughts are constantly born and the boundaries of knowledge are moved forward, says Professor Kristina Sundquist.

The whole point of having a broad depth of personnel is, according to Kristina, that they can think together and tackle problems from different angles.

– We are very fastidious about who we recruit to CPF. The right person, with the right attitude and skills can be a vitamin boost for the whole group, she says.

The relationship with Region Skåne and Lund University also has a major role in the group's successes.

– We are extremely grateful for the trust. There is a high ceiling in the dialogue and we have great freedom to develop CPF, says Kristina.

Three pillars of interaction

Kristina Sundquist has been involved from the start to lay the foundation for CPF's good reputation. The three pillars: epidemiological studies, clinical patient-centered studies and experimental laboratory makes CPF exceptional.

2021: AVC arranges 30 scientific group tutorials.

– A problem is observed in clinical practice and sometimes you want to look at a large sample and sometimes a smaller type of material. Large registry studies provide clues, a ring of truth and are good for generating hypotheses and increasing knowledge. Patient centred and experimental studies are getting closer to the reality. The combination gives our research both impact, context and meaning, says Kristina Sundquist.

An idea can also first be tested in the lab.

– Today the lab is equipped with the latest technology that allows us to identify genetic variants, epigenetic factors and inflammatory biomarkers associated with diseases such as cancer, chronic mental diseases, type 2 diabetes, obesity and cardiovascular disease, says Kristina. She adds:

– By then connecting these data to demographic and medical data, researchers can get an idea about how gene and environmental interactions direct the course of the disease, says Kristina Sundquist.

International collaborations increase the scientific level

CPF has excelled at combining patient-centered clinical research on site in collaboration with international partners and attracts large external grants, for example from the European Research Council and National Institutes of Health (NIH), USA.

– You have to dare to invest. The support from NIH, which we have had for many years back, is largely the

harvest of our many collaborations with prominent researchers at the likes of Stanford University, Mt Sinai in New York, and Virginia Commonwealth University. These raise the level of the scientific discourse and the research as well as the quality of seminars, and training which benefits both CPF and KCP, emphasises Kristina Sundquist.

The path ahead

CPF's researchers have no plans to ease off the pace but are constantly driven to meet new challenges according to Kristina.

– Even if the road we paved put us on a successful path and we achieved a great deal, it is important to continue to be open to change and the needs that exist. For example, I think in the future we will need to develop more knowledge about post-covid and how you manage the essential health care during a pandemic, for it is certain that more things will happen, she says.

She also hopes to attract more people to take an interest in primary care research.

– Interest has increased in recent years but more strong forces are needed. I really encourage all that are drawn to the research to not hesitate. You certainly have to persevere but once you are involved in a discovery that can help people it is incredibly meaningful and the world's finest profession. It gives me tremendous satisfaction, concludes Professor Kristina Sundquist.



2021: Professor Jan Sundquist is awarded 29.4 million kronor from the National Institutes of Health (NIH) for research on addiction and the opioid epidemic.

2021: 105 scientific (peer-reviewed) publications.

2021: 5 dissertations.

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