

Welcome to the web based questionnaire for Strategic Research Environment! Before you start reporting, make sure to read the instruction and prepare the Excel files that has been attached in a previous e-mail.

FRÅGA 1

This report concerns the research environment named Epidemiology for Health (EpiHealth): for Innovation and Excellence in Open-Access, Basic-Translatio (akronym: EpiLu). If you have more than one environment to report, please be sure that you fill in the information in the relevant report!

FRÅGA 2

Q. QUESTIONS FROM THE GOVERNMENT (new 2011)

FRÅGA 3

Q1. Please state the main priorities within the environment in 2011.

From our application in 2009 the main priorities set were the following for the strategic research area Epidemiology for Health (EpiHealth):

- to develop a structure for EpiHealth linking Lund University (LU) and Uppsala University (UU).
- to promote excellence in epidemiological research, on a regional, national and international scale
- to launch a screening project in persons aged 45-75 years (the EpiHealth Cohort) for evaluation of risk factors and mechanisms behind common chronic disease conditions (i.e. cancer, cardiovascular disease, diabetes, musculo-skeletal disorders, etc.)

Epihealth has focused on the following priorities during 2011, set in our strategic research plan:

RESEARCH AND RESEARCH ENVIRONMENT

One of the major priorities has been to initiate the EpiHealth Cohort, based on screening activities in Uppsala and Lund/Malmö. Furthermore we have been strengthening the research infrastructure by new recruitments of co-workers and academic specialists.

ORGANIZATION

We have been putting efforts into developing an effective leadership structure and administration, while also promoting gender balance in all activities.

EDUCATION AND DISSEMINATION

Priority has been given to the organization of a number of local, national or international scientific meetings and conferences, as well as the annual EpiHealth conference, this year held in Uppsala.

RESEARCH COLLABORATIONS

We have been promoting international contacts and projects, and also developed contacts with industry, organizations and authorities for research and innovation.

FRÅGA 4



Q2. Please describe the major activities within the environment in 2011.

The strategic research area Epidemiology for Health (EpiHealth) at Lund (LU) and Uppsala (UU) universities has focused on the following activities during 2011, based on our priorities:

RESEARCH AND RESEARCH ENVIRONMENT

We have during 2011 started the screening project for the EpiHealth population-based cohort. This project started in Uppsala during April in facilities equipped and staffed by EpiHealth. So far, a total of 2500 persons have been screened and blood samples have been sent for biobanking in collaboration with the biobank belonging to the Karolinska Institute, Stockholm. We have prepared a similar screening activity to start in Malmö/Lund in January 2012. Preparations have been ongoing since six months, including employment of three nurses and full equipment of the screening site.

We have furthermore recruited a research administrator and announced a position as Professor of Medical Epidemiology at LU, which is still under academic review.

ORGANIZATION

We have developed an internal structure for leadership (with a Steering Committee and an Executive Committee) and information (web site: www.med.lu.se/epihealth) with focus on leadership, administrative training and development. An overarching aim is to create a more equal gender balance at all levels of the organization. We have therefore tried to promote the active participation of female researchers in the leadership and representation of EpiHealth as well as in the organization of seminars and meetings.

EDUCATION AND DISSEMINATION

We have been organizing both local and national meetings, for example a symposium on Nutritional epidemiology in Lund, the annual EpiHealth conference held in Uppsala, a conference for research-group leaders and PhD-students at Lund University, and the annual Advanced course in epidemiological methods held in Uppsala.

Research on telomere biology is one aspect of the main ambition for EpiHealth: to promote healthy ageing for all, when a better understanding of the biology of ageing is needed. In May 2011, we therefore organized an international Berzelius symposium on "Telomere biology in health and disease" in collaboration with the Swedish Medical Society and the Research Council of Sweden. There was a broad attendance of around 110 delegates, including Nobel Prize Laureate 2009 Professor Elizabeth Blackburn, USA.

RESEARCH COLLABORATIONS

On the local level, contacts with other strategic research areas have been developed, especially with eSENCE-LU for a joint project on improving the technical surveillance of the fetus during delivery, as well as with EXODIAB for projects in diabetes epidemiology.

On the national level, we have research collaborations, most importantly with LifeGene - a project for screening and biobanking of samples from persons aged 0-45 years, and with BBMRI.se - a national infrastructure for development of modern biobanking with European contacts.

On the international level, we have active collaborations, for example based on a joint EU Interreg IV project linking southern Sweden (Scania) and eastern Denmark (Sjælland) in a project dedicated to cardiovascular epidemiology in populations and cohorts of patients. In addition, contacts with the Stanford University and the Broad Institute, Boston, USA, have strengthened research dedicated to social and public health epidemiology (Stanford) and genetic epidemiology (Broad Institute).

FRÅGA 5



Q3. Please describe the major results within the environment in 2011.

The strategic research area Epidemiology for Health (EpiHealth) at Lund (LU) and Uppsala (UU) universities, has attained the following major results during 2011:

RESEARCH AND RESEARCH ENVIRONMENT

One of our major scientific results during 2011, has been the start of the EpiHealth screening cohort project in Uppsala, which has so far recruited 2500 persons. The persons have filled in a web questionnaire, participated in clinical examinations, and donated blood samples for further biobanking and DNA extraction. We have also been able to add a new important cohort to EpiHealth, called the Womens´ Health in the Lund Area (WHILA) cohort including 6900 persons with a baseline initial examination (physical measures, blood sampling, and questionnaire) in 1995-1997, and a biobank that has been upgraded and modernized in 2011 by financial support from EpiHealth. The data and the biobank is now handled by Centrum för Primärvårdsforskning (CPF) in Malmö with a steering committee consisting of three senior EpiHealth-researchers (Jan Sundquist, Kristina Sundquist, and Peter M Nilsson).

ORGANIZATION

Research administrator Camilla Key was employed and started her work on 31st October. This meant a substantial improvement for the administration and contacts within the EpiHealth network, as well as a new web-master function for our web site (www.med.lu.se/epihealth). According to gender equity the vice coordinator Marju Orho-Melander has been actively representing EpiHealth both at the LU level and at regular meetings with the National Biobank Board ("Nationella Biobanksrådet"). Young female researchers have been given opportunities to attend research courses or to spend time devoted to their research as financed by EpiHealth. Currently an equal number of men and women (74 and 74) belong to the EpiHealth network.

Regular meetings have been held within the leadership structure based on organization of regular telephone meetings with the EpiHealth Steering Committee, as well as with the Executive Committee.

EDUCATION AND DISSEMINATION

Our successful symposia, conferences and meetings during 2011 have been well attended by numerous participants.

Of special interest is an open debate that we organized in Uppsala in October to discuss the pros and cons of population-based studies including biobanking. We invited two sharp critics of screening projects (Åke Thörn, Luleå, and Karin Johansson, Uppsala) to voice and defend their arguments. Later on representatives from EpiHealth and LifeGene, the two new major population-based screening projects in Sweden at present, joined forces to sign a letter to the editor published in one of the daily newspapers of Sweden (Svenska Dagbladet) because of a recent decision taken by "Data-inspektionen" (DI) in Sweden in December 2011 to stop the LifeGene project because of so called lack of specific research aims. The intention of that project has been to accumulate data from young and adult subjects (0-45 years) for broad future research aims.

The major international symposium organized during 2011 by EpiHealth was the Berzelius symposium on "Telomere biology in health and disease" in Stockholm in May, with a broad attendance of around 110 delegates, including Nobel Prize Laureate 2009 Professor Elizabeth Blackburn, USA. Of considerable importance was that this symposium was supported by a financial grant from the Research Council of Sweden, proving the high scientific standard of the programme with many well-known lecturers, for example Professors Abraham Aviv, USA, and Nilesh Samani, UK. The symposium was organized in close collaboration with Professor Göran Roos from Umeå University, one of the leading experts on telomere biology in Sweden.

RESEARCH COLLABORATIONS

For our annual conference in Uppsala, EpiHealth invited several delegates from Umeå University to attend with the intention to widen the network also to individuals and universities not primarily involved in EpiHealth.

The ongoing EU Interreg IV project with Danish researchers has resulted in extensive contacts and a cardiovascular symposium organised in Malmö in October, attended by 30 delegates. We have organised regular Skype-conferences and meetings in Malmö and Copenhagen. A separate web site has been created and will soon be functioning (www.skarf.eu). More information is available at our web site www.med.lu.se/epihealth.

We have started collaboration with Karolinska Institute (KI), Stockholm, for biobank routines, waiting for the establishment of the BBMRI.se node (hub) in southern Sweden where EpiHealth will play an important role as the representative of LU. A new automated robot system for lab sample handling has been started at the Clinical Research Unit at the Scania University Hospital in Malmö based on this collaboration with KI.

The collaboration with the Strategic Research Environment eSSANCE-LU for a joint project on improving technical surveillance during delivery was supported by a grant of 1.6 million SEK from eSSANCE during three years (Karin Källén representing EpiHealth).

FRÅGA 6



A. GENERAL QUESTIONS

Only changes since 2010 are to be stated. If the answer from 2010 need clarifications, it should be clearly stated that these are clarifications (as opposed to changes).

FRÅGA 7



A1. What effect has the strategic research initiative(s) had on your university?

The strategic research initiatives, including EpiHealth, have helped to highlight cross-disciplinary research at Lund University. They have enhanced research and they have created added values for the university – and potentially for the national level.

The strategic initiatives mean a challenge not the least in terms of leadership and management. Lund University responded by launching a two-year leadership program for the coordinators and deputy coordinators of the initiatives. This program is now completed. A corresponding program tailored to the next generation research leaders was launched this year and comprises ninety participants (including four from EpiHealth).

The strategic research initiatives also help power up the knowledge triangle. In addition to generating scientific breakthroughs, they help create educational arenas with contents at the scientific frontier of the themes represented by the respective initiatives. Thus they play a decisive role in implementing the university's goal to provide research based education of the highest quality. Furthermore, they contribute significantly to the advancement of research infrastructure, and by making this infrastructure accessible to user groups outside their own one, they contribute to the propagation of knowledge, competence and research opportunities. They are also active on the innovation front and new patents are under way.

Several of the initiatives have come a long way with implementing a very promising developmental dynamics by recruiting young researchers who contribute different expertise and different angles to the research challenge and by empowering them to develop their own line of thinking. Yet another bonus effect is that the strategic initiatives have made possible several strategic recruitments.

The research environments created by virtue of the strategic initiatives means a very valuable resource for the future. A greater variety of attractive research environments are available on both a university and a national level providing options for talented researchers, both in a starting phase or a truly advanced phase of their careers.

FRÅGA 8



A2. Describe the model according to which the resources have been allocated.

Of the Government's strategic research funding of 6 000 000 SEK to EpiHealth, 40% has been allocated to the co-applicant Higher education institution Uppsala University (UU) in the same way as the previous year, that is according to the distribution given in the application and decision taken by the Government.

As in the previous year the allocation of funding within EpiHealth has been suggested by the Steering Committee, including representatives from Lund University and Uppsala University. The final decision has been taken within each university according to internal rulings.

Of the funding of 3 600 000 SEK allocated to use within Lund University, 5% has been used for actions benefitting all twelve strategic research areas within Lund University to enhance strategic planning and quality assurance. The actions include two leadership programmes, common administrative support and coordination, senior advisor in strategic research questions, coordinated profiling and communication and internal follow up of the first year. The rest of the funding to Lund University has in the same way as previous year been allocated to the LU-internal part of the Steering Committee of EpiHealth for further distribution according to the suggestions given by the Steering Committee.

FRÅGA 9



A. GENERAL QUESTIONS

Only changes since 2010 are to be stated. If the answer from 2010 need clarifications, it should be clearly stated that these are clarifications (as opposed to changes).

FRÅGA 10



A3. What effect has the strategic research initiative(s) had on the co-applicant university/universities (if any)?

The EpiHealth collaboration started in 2010 and, apart from common conferences and courses in epidemiology/statistics, has launched two major research projects.

The first project, Epi-Meta-Health, is an effort to merge databases from existing cohorts in Malmö/Lund and Uppsala for replication studies and for performing studies regarding less common diseases where large cohort studies are needed. This project will probably, through work package 2 (WP2) in BBMRI.se, be the start of a national-wide effort to perform meta-analysis of most Swedish cohorts with longitudinal data. This project is lead by Johan Sundström, Institution of Medical Sciences at UU. A first topic is to study the epidemiology of subarachnoidal bleedings (SAH), a variant of stroke.

The second project is to start a new cohort study, the EpiHealth Cohort. The plan is to enroll up to 300,000 Swedes in the age-groups 45 to 75 years with the aim to study the interplay between genes and life-style factors behind the development of common disorders seen in the elderly, such as myocardial infarction, stroke, bone fractures, dementia, chronic obstructive pulmonary disease, cancer, arthrosis etc. Data on life-style exposures will be collected via a web-based questionnaire and serum/plasma/DNA will be biobanked following a visit to a test centre where also physiological measures, such as blood pressure, lung function, cognitive function, anthropometry and ECG will be recorded. Future morbidity and mortality rates will be followed by use of national Swedish registers. The study will start at two similar centres (Uppsala and Malmö), but will pending on further granting include also other centers and parts of Sweden. The first subject came to screening in late April 2011. The EpiHealth cohort is thought to be an open-access, national-wide resource for Swedish epidemiologists. This project is lead by Lars Lind, UU, in collaboration with Sölve Elmståhl from the LU, being responsible for the test center in Malmö.

The creation of these two EpiHealth-based projects has provided a basis for collaboration of scientists across several institutions in Uppsala. The EpiHealth Cohort is also a major player in the Uppsala BioBank and is a driver of the creation of modern biobanking techniques and standards. In that sense, the EpiHealth Cohort is also one of the biggest projects in BBMRI.se, a national infrastructure for excellence in biobanking, supported by the Research Council of Sweden.

In addition, the EpiHealth Cohort will be a major player for the SciLife Lab, linking UU and the Stockholm university, in the future when DNA and serum/plasma samples will be analyzed by use of high-throughput techniques. The EpiHealth cohort also connects to the Uppsala Clinical Research Center (UCR), which provides a project leader and data management skills.

The Uppsala University has developed its excellence in epidemiology based on a number of research projects and published academic theses during 2011.

The advanced educational course "A short course on concepts and methods in causal inference" was held at Uppsala Learning Lab, Uppsala University, on 8-9th December 2011. Lecturers were Bianca DeStavola and Rhian Daniel from the London School of Hygiene and Tropical Medicine. Course organisers were Liisa Byberg and Karl Michaëlsson. Topics covered in the course were causal diagrams, propensity scores, instrumental variables, time-varying confounding and mediation (by G-estimation and marginal structural models). The course was organised into both theoretical lectures and practical computer sessions. There were 44 participants, not only from UU and LU but also from all other major universities in Sweden. The course was very well received. A short report in Swedish is found at: http://www.med.lu.se/epidemiology_for_health_epihealth/moeten

FRÅGA 11



A4. Will the university monitor and assure the development within the strategic research environment(s)? Please state how and why.

Cross-disciplinary research is at the core of the research strategy of Lund University and we therefore carefully monitor and assure the development of the strategic research initiatives.

During 2011 Lund University conducted an internal assurance process of its strategic research initiatives as part and parcel of the project "Fronesis/cross-disciplinary research and education". This process included a visit by a group of "critical friends" (Craig Heller, Stanford University, Anne Cutler, Max-Planck Institute for Psycholinguistics, and David Price, University College of London). The group made site visits and interviews, held a concluding workshop and produced a report. They wrote:

"We bring to this review process the firm conviction that cross-disciplinary and interdisciplinary research and education must be a major feature of any university that aspires to be world class. Many of the greatest challenges and opportunities that we face cannot be addressed simply within the confines of the classical disciplines. Progress depends on combining the expertise of individuals coming from diverse disciplines, and thus the modern university has to facilitate these cross disciplinary connections and collaborations if it is to remain at the cutting edge of human knowledge and innovation. The funding that supports the Strategic Research Areas is an effective catalyst for cross and interdisciplinary initiatives at Lund. That benefit has been realized clearly in all of the SRA projects we had the pleasure of visiting."

Presently, we are designing a tool/method for the analysis, evaluation and planning of cross-disciplinary research groups and centres at Lund University. The purpose of this is to assess, in an evidence-based fashion, the contribution to research excellence of these activities and units which are not coinciding with departments or faculties. The tool will be piloted in the spring of 2012 and, if successful, be scaled up for general use.

In 2014, a new overall research quality assessment process will be launched at Lund University – a follow-up of our RQ08 project. This time, however, it will not only look at disciplinary-based research, but it will also pay special attention to cross-disciplinary research activities. In that context, we hope that the new tool/method we are developing will come in handy.

FRÅGA 12



B. DESIGN

FRÅGA 13



B1. Strategic research programme

Only changes since 2010 are to be stated. If the answer from 2010 need clarifications, it should be clearly stated that these are clarifications (as opposed to changes).

FRÅGA 14



a. List and describe the major challenges of the strategic research programme.

MAJOR CHALLENGES

1. We face a positive challenge to expand, recruit co-workers and promote excellence in science dedicated to epidemiology on the one hand but with access to very limited financial resources on the other hand. During 2011 only 6 million SEK was allocated to EpiHealth with 60% funding for LU and 40% for UU. This has caused some constraints for our planned activities, i.e. the rate of expansion of our screening activities and our infrastructure.
2. Another challenge is to overcome some negative aspects of different scientific cultures and to promote collaboration between our two universities, as well as between researchers in Malmö and Lund, both groups of researchers belonging to LU. Positive steps have been taken based on mutual understanding and joint meetings, seminars and joint projects (i.e Epi-Meta-Health).
3. One recent development on the national level has, however, caused us serious concerns. During December 2011 the "Datainspektion" (The Data Inspection Board - a national authority to supervise data handling) declared that the gathering of personal data information and biobanking in the LifeGene project was illegal and that this project has to stop. As LifeGene, directed from the Karolinska Institute in Stockholm, is a sister project to EpiHealth, we also feel very much concerned. In fact, these decisions have a political dimension and in the end politicians at the national level in Sweden, the Government and Parliament, have to decide on the future of population-based studies based on informed consent. The difference between LifeGene and EpiHealth screening projects is, however, not only the age range of the target group for screening (0-45 years versus 45-75 years) but also that the EpiHealth screening project has set up more well-defined research goals linked to the study of the development of chronic disease conditions prevalent in the middle-aged and elderly population. The debate according to the activities of the Datainspektion is still ongoing and political decisions awaited during 2012. Otherwise, this decision will make it more difficult to run population-based screening studies administered by universities, being outside the health care system. It is thus a challenge of utmost importance for research in advanced population-based epidemiology in Sweden that has to find an acceptable and legal solution.

FRÅGA 15



b. Describe the initiatives taken to meet these challenges.

INITIATIVES TO MEET CHALLENGES

1. We seek ways to improve our financial resources. Lars Lind, the main representative of EpiHealth in Uppsala, has successfully applied for additional funding for the EpiHealth Cohort, provided by the Heart- and Lung Foundation (HLF) of Sweden, amounting to 500,000 SEK for the year 2012. In addition, he has been promised a financial support of 3 million SEK to EpiHealth from the Faculty of Medicine, UU, to help financing the EpiHealth Cohort screening activities. We are also looking for other opportunities to receive more funding from national research bodies, because our screening project is costly. Benefitting from new financial support obtained via our new EU Interreg IV project together with Danish researchers we have been able to strengthen the research infrastructure and number of staff members at the Data handling center in Malmö for population-based cohorts and biobanks (Malmö Preventive Project, Malmö Diet Cancer).

2. In order to improve the collaboration and bridging different cultures EpiHealth has taken the initiative to organise activities to bridge between Malmö and Lund (i.e. a symposium on Nutritional epidemiology held in Lund, but organised from Malmö). Another example are the two activities held in Uppsala during 2011, the annual EpiHealth conference and the Advanced course in epidemiology - both attended by many representatives from LU.

3. In close collaboration with the leadership structure of the LifeGene project (head: Nancy Pedersen, KI, Stockholm) we have worked together for media debate and information related to the unfortunate decision by the Datainspektion in Sweden to put a stop to the LifeGene screening project on 19 December 2011, something that might eventually also hurt the activities of the EpiHealth Cohort screening activities, that started in Uppsala in April 2011, and are planned to start in Malmö in January 2012. We have published a joint position paper in the daily "Svenska Dagbladet" on 22 December, signed by leading representatives from LifeGene and EpiHealth. See link: http://www.svd.se/opinion/brannpunkt/trangsynt-beslut-hotar-forskningen_6726411.svd

The coordinator of EpiHealth, Peter M Nilsson, is also the LU representative within the national advisory board for LifeGene.

The important international role for Sweden in advanced epidemiology rests on the unique resources available in this country, for example the personal 10-digit identification (ID), a number of national registers of highest quality and the willingness of many citizens to support screening activities and research projects, including their voluntary donation of blood samples for research on biomarkers and genetic markers of disease conditions. This makes it an ethical imperative that Sweden contributes to international research in order to promote healthy conditions for individuals and populations based on new understanding.

The first step is often guided by the epidemiological observations of risk factors or potential disease mechanisms based on gene-environmental interactions. This is exactly where the strategic research area EpiHealth would like to contribute and to play a leading role, in full agreement with the political ambition of the Swedish authorities to support an important role for Swedish research also internationally, a role that could be much larger than the modest size of the population (9.5 million inhabitants) indicates compared with that of other corresponding countries.

FRÅGA 16



c. Are there any major changes in the research programme introduced since 2010? Please, describe and motivate. This information is important in order to monitor the development of the strategic research environment.

We have tried to follow our original strategic plan as founded in the goals set in the grant application for EpiHealth submitted to the Research Council in 2009. According to this we have started all activities that were once described in the strategic plan. However, the process of announcing and recruiting for a new position as Professor of Medical epidemiology at the Lund University has taken longer time than expected. It was announced in the Spring of 2011, and final decisions based on the international review process are awaited in early 2012.

The start of the screening project in Malmö has been postponed for 6 months due to problems encountered with IT compatibility between our EpiHealth (LU) system and that of Region Skåne (the regional county council). This forced us to abandon our first plan to work together for use of a joint screening site, and therefore the Malmö center was set up independently and in a similar way that is already ongoing in Uppsala. On the other hand, we have continued local negotiations with representatives from Region Skåne (research directors Hannie Lundgren and Ulf Malmqvist) to find other ways for collaboration, for example to use a common medical resource (a physician) for follow-up of screening results outside the normal range. A sum of 3 million SEK/year for five years has been allocated by Region Skåne, via its collaborative board (LSUS) with the Faculty of Medicine at LU, to support the collaboration between the EpiHealth cohort and the so called BIG-3 screening project headed by Region Skåne. This is promising for the future.

Negotiations to set up a local node (hub) for biobanking in Malmö of a national biobank infrastructure (BBMRI.se) is ongoing, based on contacts between the Deans of medical faculties in Sweden (Dean Bo Ahrén representing LU in 2011). From Rector Per Eriksson, LU, a financial support of 1.5 million SEK during a 3-year period has been allocated to the node of BBMRI.se when a final contract has been signed. This has been prepared by the LU administration during 2011 for a signing hopefully during the first half of 2012.

FRÅGA 17

**B2. Strategy and plan for process of knowledge transfer and utilization of research findings**

Only changes since 2010 are to be stated. If the answer from 2010 need clarifications, it should be clearly stated that these are clarifications (as opposed to changes).

FRÅGA 18

**a. Describe the major challenges concerning knowledge transfer and utilization of research findings.**

The so called Third Task of universities (to popularize scientific findings for lay people) is a major and important challenge to EpiHealth, and a task that we take seriously. Many of our researchers have been interviewed by media during 2011.

In observational epidemiology there is always a risk of bias when analysing and presenting the data. This is of great importance when contacts are taken with journalists and the media as the public interest in health issues is always high, for example the pros and cons of the so called high-fat, low-carb (HFLC) diet that might promote weight loss but for which long-term health consequences on morbidity and mortality are largely unknown. Within EpiHealth we have many researchers involved in analysing health hazards associated with lifestyle as well as the broader urban or geographical environment, or associated with various occupational circumstances at the work place. This means that special precautions has to be taken when the results of such observational research are presented to the media and the public in order to keep a good scientific balance.

A third challenge is to translate the knowledge accumulated for a wider application in innovation and developments of products.

FRÅGA 19

**b. Describe the initiatives taken to meet these challenges.**

We have tried to develop good contacts with journalists and the media to describe our activities and to explain our findings, for example according to diet or environmental health hazards as well as for risk factors of chronic diseases. Media coverage has been documented in newspapers such as "Uppsala Nya Tidning" and "Sydsvenska Dagbladet", as well as in the monthly "Lunds Universitet Meddelar" (LUM), and in the weekly "Dagens Medicin". Questions from the public or from professional groups have been dealt with via e-mail or comments on blogs (e.g. on the blog "SFAM-Ordbyte" for general practitioners where critical arguments have been posted directed against population-based screening activities). We have also used our own web site (www.med.lu.se/epihealth) to spread information, not only about our own activities, but also about related research activities and projects, e.g. the LifeGene study and the national infrastructure for modern biobanking, the BBMRI.se project.

To avoid misunderstandings we have developed personal contacts with media and individual journalists, for example the invitation of a journalist from LUM to attend our research conference for research group leaders and PhD-students at Örenäs castle on 3-4 November, 2011.

Our contacts with industry has developed, most importantly with Astrazeneca AB for joint projects, for example the Malmö Osteo Arthritis (MOA) project, in collaboration with Gunnar Engström and Maria Danielsson (Astrazeneca) and Stefan Lohmander and Peter M Nilsson (LU). This has lead to the generous donation of research materials (x-ray uptakes from MOA) from Astrazeneca AB to the Data centre for population-based studies in Malmö.

FRÅGA 20



c. Are there any major changes in the planned activities since 2010? Please, describe and motivate. This information is important in order to monitor the development of the strategic research environment.

We continue our planned activities within EpiHealth according to goals set in our Strategic plan, and no major changes have occurred.

However, other developments have to be followed closely to see if the activities of EpiHealth might be affected. The greatest new challenge to utilization of research findings in 2011 was the decision taken by Datainspektionen (The Data Inspection Board) on 19th December to stop our sister project LifeGene for formal reasons. This has caused a lot of debate already and is in itself a paradox because other authorities (the Swedish Government and the Research Council) have supported such research activities, for example following the acceptance and approval of the application for EpiHealth in 2009 where a similar screening project was described (the EpiHealth Cohort).

So far more than 20,000 subjects have been volunteers to participate in the LifeGene study, but all data and blood sample information are prohibited to use, both now and in the future if the decision taken by Datainspektionen and announced in December should prevail. The only solution to this dilemma is that a new political decision has to be taken at the central level to make it possible to conduct population-based studies and biobanking with broad aims, based on well-informed consent by study participants. The great investment from the Government in modern epidemiology and screening projects has to be respected also by other national authorities. We trust the Research Council of Sweden to facilitate a process leading to new political decisions in 2012 so that screening activities can continue, both for LifeGene and for EpiHealth. Similar national projects are ongoing abroad, for example in the UK (<http://www.ukbiobank.ac.uk/>) or planned as in Germany (<http://www.biobanken.de/BiobankenRegisterEN/Registry.aspx>). Sweden and Swedish population-based epidemiological research risks to be left behind if this regulatory issues cannot be solved in a satisfactory way.

FRÅGA 21



B3. Collaboration/strategic alliance partners in 2011

FRÅGA 22



Please list the most important collaboration/strategic alliance partners in 2011 in relation to the strategic research environment. Start by specifying the number of collaboration/strategic alliance partners (including network organizations). Click on OK and the specified number of rows will be created. Fill in the created table by stating name of organization, business registration number (only for Swedish organizations) and mark with an X if it is a new partner compared to 2010. Also mark type of organization (industry, academia, etc.).

Number of collaborations/strategic alliances partners

13

Name of organization	Business registration number	New partner 2011	Industry	Academia	Public agency	Research institute
National Board of Health and Welfare	2021000555		<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
LifeGene			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Astrazeneca	5560117482		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BBMRI.se			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rigshospitalet , Copenhagen , EU Interreg project, Copenhagen		X	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Name of organization	Business registration number	New partner 2011	Industry	Academia	Public agency	Research institute
Region Skåne, Biobank	23 21 00-0255		<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Swedish Heart Register			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stanford University, USA			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
European Prospective Investigation into Cancer and Nutrition (EPIC)			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
National Diabetes Register, Sweden			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Institute for Health Economy, (IHE), Lund			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Broad Institute, Harvard, USA			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
KI Biobank	2021002973	X	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Non governmental organization (NGO)	Network organization	Other
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

FRÅGA 23

**B4. Recruitment**

Only changes since 2010 are to be stated. If the answer from 2010 need clarifications, it should be clearly stated that these are clarifications (as opposed to changes).

FRÅGA 24

**a. Describe the strategies for recruitment to the strategic research environment.**

We have first analysed our needs and it was decided that a new Professorship dedicated to medical epidemiology at LU was a priority because this could facilitate our population-based registers and biobanks. The strategy was first to investigate possible candidates for such a position, based on internal discussions, and this was followed by the announcement of a position as Professor of Medical Epidemiology at the Lund University in April 2011 (Department of Clinical Sciences, Malmö), but the review process is still ongoing. A similar position as Professor of Epidemiological Methods has been planned for during the Autumn 2011 and was announced in January 2012 (Department of Clinical Sciences, Lund).

We have also employed a research administrator, Camilla Key, who started her work in late October.

Finally, the new EU Interreg IV project in cardiovascular epidemiology made it possible to employ new staff for handling of data from population-based cohorts and biobanks in Malmö (the Malmö Preventive Project and the Malmö Diet Cancer studies). The new staff members consisted of: Anna Hwasser, Håkan Andersson and Samuel Eryd-Aronsson.

FRÅGA 25

**b. Describe career opportunities offered by the strategic research environment to young researchers.**

We have supported three young researchers by providing salaries for a limited period of time (weeks, months) in order to write applications for grants or other funding to themselves, and to finalise manuscripts or to participate in conferences. This is a priority that will be further continued during coming years.

The different research group leaders of EpiHealth of LU and their PhD-students were invited to a 2-day conference at Örenäs castle on 3-4 November to discuss their research projects and career opportunities. The intention is to repeat this successful conference also by the end of 2012.

Four young researchers participate in the Lund University programme for future academic leaders (Karin Källén, Valeriya Lyssenko, Jonas Manjer and Martin Englund).

FRÅGA 26



c. Describe the strategy/plan for staff mobility between the university (universities) and business or public sector (e.g. staff exchange program).

The EpiHealth network encourages staff mobility and exchange activities. We try to develop excellent contacts with the research-oriented pharmaceutical industry, for example with Astrazeneca AB where one of the senior researchers involved in EpiHealth (affiliated professor Gunnar Engström) holds a salaried research position as senior advisor in epidemiology.

Karin Källén represents the link between EpiHealth and the Medical Birth Register at the National Board on Health and Welfare (Socialstyrelsen), where she also spends parts of her time. This is of great importance as a bridge to this national authority and a fundament for the planning of our international symposium on Reproductive epidemiology to be held on 29-30 March 2012.

Some young PhD-students with epidemiological projects have visited other universities for shorter or longer stays during the year 2011.

FRÅGA 27



B5. Education

Only changes since 2010 are to be stated. If the answer from 2010 need clarifications, it should be clearly stated that these are clarifications (as opposed to changes).

FRÅGA 28



The integration of education, research and innovation needs to be strengthened (knowledge triangle). Describe how curricula, teaching and examination, at all levels of education including doctoral level, are developed in relation to the strategic research environment.

Many of the experienced members of the EpiHealth network are active already today during teaching activities directed to undergraduate students as well as PhD-students, as epidemiology is an important aspect of many clinical research fields. We have started a discussion on how to promote teaching and coordinate activities. Two representatives of PhD-research students belong to the Steering Committee of EpiHealth (Giuseppe Giordano, LU, and Niklas Ericsson, UU).

FRÅGA 29



B6. Industrial and Societal problems addressed.

Only changes since 2010 are to be stated. If the answer from 2010 need clarifications, it should be clearly stated that these are clarifications (as opposed to changes).

FRÅGA 30



a. Describe industrial and/or societal problems and needs that are addressed.

1. EpiHealth has addressed many societal problems, of interest also to the industry. One typical example is the development of new understanding of healthy food built on knowledge from both observational studies and intervention studies. There is a great public interest in healthy food choices. This has been addressed in some recent publications and also high-lighted at the EpiHealth Symposium on Nutritional Epidemiology, held in Lund on 21-23 March 2011, where researchers with industry contacts where present from the Antidiabetic Food Center (AFC) and a scientific collaboration between EpiHealth scientists and AFC at LU, was initiated.

This is a way to promote the knowledge triangle hoping for new food products to be launched built on our collaboration, for example "smart food" for patients with diabetes. Collaboration between researchers addressing gene-diet interactions in diabetes and obesity (Marju Orho-Melander's group) and AFC (Inger Björk) has been initiated aiming to utilise epidemiological research results to design more effective diet interactions based on individual genetic background. Leading researchers from UU were also present (Ulf Riserus).

2. An important societal problem is the development of obesity leading to many deleterious health consequences. This has been addressed by new observational studies and analyses focusing on gene-environmental interactions of importance to obesity and risk of type 2 diabetes. Several researchers associated with EpiHealth have been involved in this kind of research, for example Marju Orho-Melander and Paul Franks, both are members of the Steering Committee of EpiHealth.

Associated with the increasing trends of obesity and type 2 diabetes, another leading focus area has been cardiovascular disease (CVD) genetics and gene-environment interactions in CVD (Olle Melander, Marju Orho-Melander). This has been a successful research area within EpiHealth. In 2011 this area was supported for the next five years by two very prestigious grants that will further strengthen the research activities, i.e. 15 million SEK by European Research Council (ERC) Starting Grant (to Olle Melander) and 15 million SEK by Heart Lung Foundation (HLF) so called Big Gift (to PI Olle Melander). EpiHealth has additionally facilitated collaboration between social medicine epidemiologists (Kristina Sundqvist) and genetic epidemiologists (Olle Melander, Marju Orho-Melander, Paul Franks). One result of this is that collaborative project grant applications have been submitted.

3. Another societal problem is to safeguard healthy pregnancies and early life circumstances. This is one of the main focus areas of EpiHealth. During 2011 we have started the planning of a big international conference on Reproductive Epidemiology in collaboration with WHO-Copenhagen, to take place in Malmö on March 29-30, 2012. In the Organisation Committee some leading researchers are active, for example Karel Marsal, LU, Liisa Byberg, UU, and Karin Källén, LU. This is a way to show what register-based research can provide new knowledge, something that has been ongoing since several years in collaboration between Karin Källén and The Medical Birth Register at the National Board on Health and Welfare. In Uppsala, Liisa Byberg has developed the data-base called "Uppsala Family Study" from several generations.

4. The societal problem of respecting the integrity of individuals in the context of register-base research where questionnaire data have been used is a focus of concern for both EpiHealth and its sister project LifeGene. During 2011 the Data Protection Board ("Datainspektionen") has stopped the LifeGene project for formal reasons. This issue is still not fully settled but the outcome will impact on the possibilities and the legitimation to do population-based studies in Sweden. Therefore EpiHealth has taken several initiatives to discuss the ethical aspects of this problem, for example by arranging a debate with our most pronounced critics at the annual EpiHealth conference in Uppsala, held October 3-4. In addition, leading representatives of EpiHealth from both LU and UU have co-authored manuscripts that have been published in leading daily newspapers in Sweden, for example in Svenska Dagbladet during December 2011.

The important international role for Sweden in advanced epidemiology rests on the unique resources available in this country, for example the personal 10-digit identification (ID), a number of national registers of highest quality and the willingness of many citizens to support screening activities and research projects, including their voluntary donation of blood samples for research on biomarkers and genetic markers of disease conditions. This makes it an ethical imperative that Sweden contributes to international research in order to promote healthy conditions for individuals and populations based on new understanding.

FRÅGA 32



c. PRECONDITIONS

FRÅGA 33

**C1. Organization and leadership of the strategic research environment in 2011**

Only changes since 2010 are to be stated. If the answer from 2010 need clarifications, it should be clearly stated that these are clarifications (as opposed to changes).

FRÅGA 34



a. Describe how the strategic research environment is organized, including the set-up with co-applicant Higher education institutions (if any), and collaborating research institutes (if any) Specify the main bodies in the environment with an organization chart (please upload the organization chart below).

The organization of EpiHealth has remained the same in 2011 as was reported for 2010. This is based on our Steering Committee, SC (previously called the Joint Collaborative Board, JCB) with representatives from both LU and UU, with a smaller Executive Committee, EC (with representatives from both LU and UU). The work of both committees is based on regular telephone conferences and personal contacts during annual conferences. The names and contact details of committee members are shown at: http://www.med.lu.se/epidemiology_for_health_epihealth/kontakt. Some of these names were also principal investigators (PI) behind the initial application in 2009.

Steering Committee:

- Peter M Nilsson, LU, coordinator, EC, PI
- Marju Orho-Melandar, LU, vice coordinator, EC, PI, liason representative in the board of EXODIAB
- Sölve Elmståhl, LU, EC, responsible for the EpiHealth Cohort in Malmö-Lund
- Maria Albin, LU, EC
- Karin Källén, LU, PI, contact person for National Board on Health and Welfare
- Jan Sundquist, LU, PI
- Ingemar Petersson, LU, Representative of Region Skåne
- Bengt Jeppsson, LU, representative of the Faculty of Medicine
- Paul Franks, LU, liason representative of the board of EXODIAB
- Giuseppe Giordano, LU, PhD-student representative
- Lars Lind, UU, EC, PI, responsible for the EpiHealth Cohort in Uppsala
- Karl Michaelsson, UU, leader of Uppsala Research Center, UCR
- Johan Sundström, UU, UCR
- Niklas Eriksson, UU, PhD-student representative
- Joyce Carlson, LU, affiliated to SC as an expert on biobank questions

The three main areas of activities in EpiHealth remain to be:

1. Basic epidemiology (genetic studies, gene-environment studies, epigenetics)
2. Infrastructures (biobanks, biostatistics, bioinformatics)
3. Clinical epidemiology (studies based on data from patients, health economy, serology studies for epidemics of infectious disease, supervision of health hazards in the environment and present in different occupations)

FRÅGA 35



Upload organization chart here

Antal bifogade filer: 1. Filen/filerna kan ses i resultatöversikten (webb).

FRÅGA 36



b. Describe the leadership and management (the main strategic and operative bodies) of the strategic research environment, including number of men and women in the management team, the decision-making procedure, and who is in charge. Also upload the excel file "C1 b List of personnel in management" that was sent out together with the instructions for reporting. The excel file should include name of person, name of institution/organization, gender and role in management (refer to the organization bodies in the organizationchart) for those active within the management during 2011.

EpiHealth is lead by Peter M Nilsson, coordinator, and Marju Orho-Melander, vice coordinator. They share responsibilities and they both represent EpiHealth, internally within Lund University (LU) as well as externally at meetings, conferences and while acting as representatives for LU in LifeGene (PMN), BBMRI.se (PMN) and the National Biobank Council (Nationella Biobanks Rådet) (MOM).

EpiHealth is headed by a Steering Committee (SC) with 14 ordinary members, as listed on our web site: (http://www.med.lu.se/epidemiology_for_health_epihealth/kontakt). In addition, we have one expert on biobank-associated technical issues, Joyce Carlson in Lund, affiliated to the Steering Committee. The SC has regular telephone conferences amounting to 3-4 per years and also personal contacts during the annual EpiHealth conference. Meetings and decision taken are documented in protocols.

The Executive Committee (EC) consists of five members: Peter M Nilsson, Marju Orho-Melander, and one member each representing Malmö (Sölve Elmståhl), Lund (Maria Albin) and Uppsala (Lars Lind). The EC has regular telephone conferences amounting to 4 per year, and in between personal contacts via e-mail, telephone contacts and personal meetings. Peter M Nilsson and Marju Orho-Melander have weekly contacts as they both work in Malmö. The coordinators share the responsibility to be in charge of EpiHealth.

The LU internal part of the SC consists of the following members: Peter M Nilsson, Marju Orho-Melander, Maria Albin, Sölve Elmståhl, Paul Franks, Giuseppe Giordano, Karin Källén, Bengt Jeppsson, Jan Sundquist, and Ingemar Petersson. In addition, Joyce Carlson is an associated SC member for biobank questions. The annual budget is decided by the LU internal part of the SC.

This means that we have a total of 11 men and 4 women engaged in the SC - the structure for leadership and management of EpiHealth, among them two representatives elected by and to represent organisations of PhD research students at LU and UU. The collaborating partner, Uppsala University, is represented by three ordinary members in the SC, the Medical Faculty in Lund by one member, and the Region Skåne (regional county council) by one member in the SC.

The central research administration of EpiHealth is organised by Camilla Key.

WORK PLAN

The work of the Steering Committee (SC) is to decide on the work of EpiHealth in general, including the strategic plan, major activities, information, web-site, building of networks and infrastructures. The most important documents are shown as PDFs at our website (strategic plan), but protocols are kept within the EpiHealth administration.

The work of the LU-specific part of the SC is to decide on the part of the EpiHealth budget that is specified for LU (60%). This includes salaries to the coordinator and vice coordinator, as well as the persons being responsible for the EpiHealth Cohort. In addition, new recruitments for positions within the EpiHealth network at LU have to be decided by the LU-specific part of the SC. These decisions are also documented in protocols kept within the EpiHealth administration.

A corresponding procedure is carried out at the UU-specific part of the SC for the UU part (40%) of the total budget.

The work of the Executive Committee (EC) is to discuss the work of EpiHealth in a more direct and operational way, for example to take decisions on the planning of meetings, conferences as well as other activities.

FRÅGA 37



Upload excel file "C1b List of personnel in management" here

Antal bifogade filer: 1. Filen/filerna kan ses i resultatöversikten (webb).

FRÅGA 38



C2. List of participating personnel in the strategic research environment in 2011

FRÅGA 39



a. Please upload the Excel-file "C2 a List of personnel" that was sent out together with the instruction for reporting. The Excel-file should include name of person, name of institution, gender, position, role in research environment etc for those participating more than 10 percent of full time in the environment during 2011.

Antal bifogade filer: 1. Filen/filerna kan ses i resultatöversikten (webb).

FRÅGA 40



Please also state the number of relevant personnel (female and male) participating more than 10 % of full time in strategic research environment (regardless of financing) during 2011. The number should be the same as the number of personnel that has been listed in the excel-file C 2 a Number of personnel.

	Female	Male
Number of personnel	74	74

FRÅGA 41



b. If the principal investigators differ from 2010, please comment.

The Principal investigators do not differ from 2010 (and reported in 2011).

FRÅGA 42



C3. Economic report for year 2011

FRÅGA 43



a. Specify the income during 2011 to the strategic research environment. Include "in-kind contributions" and specify such contributions in question D3 (other comments). Use the same delimitation of your strategic research environment as in the last follow-up [year 1], when specifying incomes.

	Government strategic research funding	Co-funding from main applicant Higher education institution	Co-funding from co-applicant Higher education institutions	Funding from collaborating research institutes	Funding from other collaborators	Other external funding
Funding in SEK	6000000	26616400	18000000	0	0	46310710

FRÅGA 44



b. Specify how the strategic research funding from the Government in 2011 (box one above) has been used. The use of funding shall include the use at co-applicant higher education institutions. "High cost equipment" is investments in infrastructure and shall be reported as purchase value or depreciations. Use the same model as in follow-up for year 1. "Infrastructure running costs" are costs for using infrastructure e.g. electricity, premises, rents and so on. "Other costs shall be specified in question D3 (other comments).

	Personnel	Running costs	High cost equipment	Infrastructure running costs	Other costs
Costs in SEK	4050657	5852587	541571	435167	1568346

FRÅGA 46



C3. Economic report for year 2011

FRÅGA 47



d. Specify the distribution of the Government funding 2011 to the strategic research environment.

	Share allocated to co-applicant Higher education institutions	Share allocated to collaborating research institutes	Share allocated to other collaborators
Share (in percent of Government funding)	40	0	0

FRÅGA 48



e. If the share allocated 2011 to the co-applicant Higher education institutions (if any) do not correspond to the one given in the application, please comment.

No change.

FRÅGA 49



f. If collaboration with research institutes was intended in the application; does the share allocated or the amount of money spent on collaborative efforts 2011 correspond to the one given in the application? Please comment.

Not applicable.

FRÅGA 50



C4. Use of research infrastructure

This question regards the use of research infrastructure within the environment in 2011. For more information see the document FAQ 2011.

FRÅGA 51



a. Please upload the Excel-file "C4 a Research infrastructure" that was sent out together with the instruction for reporting. The Excel-file should include the name of each infrastructure used within the environment 2011, what type of infrastructure (national/international), the objective for using the infrastructure (what the infrastructure is used for, free text, max 20 words), the extent of usage (alternatives: minor usage, some usage, extensive usage) and the relevance of the infrastructure for the environment (alternatives: for convenience, important, critical).

Antal bifogade filer: 1. Filen/filerna kan ses i resultatöversikten (webb).

FRÅGA 54



D. RESULTS FROM THE STRATEGIC RESEARCH ENVIRONMENT IN 2011

FRÅGA 55

**D1 Scientific quality in international comparison**

FRÅGA 56

**a. Describe the most important results during 2011, including development of new methods.**

1. We have started the ambitious EpiHealth Cohort for screening of persons aged 45-75 years of age, first in Uppsala in April 2011, and then planned to start in Malmö in January 2012. This is based on our commitment stated in the original research application plan from 2009 and has costed us a considerable amount of money and personal work, led in Uppsala by Lars Lind and in Malmö by Sölve Elmståhl. This is described at our web site: http://www.med.lu.se/epidemiology_for_health_epihealth/kohort. So far approximately 2500 persons have been screened and donated blood samples stored in a biobank at Karolinska Institute (KI) where we collaborate.

2. Among scientific results of highest international relevance, where one or several EpiHealth members were involved, has been the contribution of biobank data (DNA) and phenotypic data from the Malmö cohorts (MPP, MDC) as well as Uppsala data (PIVUS) for an international collaboration to describe the genetic background of blood pressure regulation and hypertension (Lars Lind, Olle Melander, Peter M Nilsson), as published in Nature.

Another important contribution of epidemiological data has been to the EPIC-Interact European collaboration for the study of genes and environmental factors in the pathogenesis of type 2 diabetes, as exemplified by several publications (Peter M Nilsson, Paul Franks, Leif Groop). Other outstanding publications have focused on the genetics of lipid disorders (Marju Orho-Melander) or the gene-environmental interaction behind obesity (Emily Sonestedt, Marju Orho-Melander, Elisabet Wirfält).

Other important publications includes a paper based on pharma-epidemiology and risk of fractures (Karl Michaelsson), a matter of great relevance to large groups of patients, and another one on the prognostic importance of diastolic blood pressure in young men investigated at military conscript testing where Swedish national registers have been used (Johan Sundström).

Several publications have described the association between environmental pollutants, for example persistent organic pollutants (POPs) and atherosclerosis (Lars Lind).

3. New methods have been developed during 2011 and tested for web-based recordings of dietary intakes (Marju Orho-Melander, Elisabet Wirfält, Emily Sonestedt). This might prove to be of great value in a new large-scale study under planning - the Malmö Offspring Study (MOS) - when offspring across two generations to index subjects in the Malmö Diet Cancer cohort will be invited for analyses of family traits of chronic disease conditions (Peter M Nilsson). Applications will be submitted in 2012.

FRÅGA 57



b. Describe briefly the development since the start and the standing of the strategic research in an international context (state of the art).

The EpiHealth network has strengthened its role as a leading research body in Sweden for advanced analyses in epidemiology. This is reflected in a very wide network with many leading research group leaders, as well as the increasing publication trend based on findings from large-scale population cohorts and biobanks. Some of these cohorts are found in Malmö (Malmö Preventive Project, Malmö Diet Cancer, and WHILA cohorts), in Lund (MISS-cohort) or in Uppsala (ULSAM and PIVUS cohorts). Data from the very large Värmland Survey in 1962-1965 (n= 97,000) has started to be used for studies in cardiovascular epidemiology (Payam Khalili) in collaboration with the Örebro University, as well as contributing to a project in Uppsala for national meta-analyses called Epi-Meta-Health, headed by Johan Sundström. These cohorts are of both national and international importance.

One of the PIs for the original application of EpiHealth in 2009, Professor Håkan Olsson, Lund, has recently been awarded with the European Research Council (ERC) Advanced Grant in November 2011 with a sum of 11 million SEK. This was given to him because of excellent research in the molecular and clinical epidemiology of breast cancer and malignant melanoma carried out at LU. He is an active member of the EpiHealth network and took part in our annual conference.

A similar achievement was noted for Professor Olle Melander, Malmö, as he was awarded an ERC Starting Grant with a sum of 15 million SEK, and also a Big Gift grant from the Heart and Lung foundation (HLF) of Sweden amounting to 15 million SEK with a motivation based on his "international excellence in cardiovascular disease genetic and basic epidemiology".

Many of the researchers within the EpiHealth network have been able to attract large research funding for projects, but the Research Council of Sweden has also supported the Infrastructure of biobanks and population-based cohorts in Malmö to Peter M Nilsson, with substantial funding for the years 2009-2011 and now prolonged during the period 2012-2014 (2.5 million SEK).

A new population-based screening project for patients with diabetes (DOLCE), with an added biobank, has started in the city of Chernigiv, northern Ukraine, a high-risk area for cardiovascular complications of diabetes (Valeriya Lyssenko), with some support from other researchers in EpiHealth (Peter M Nilsson). The same researchers lead a new epidemiological project (PROLONG) to investigate why patients with long-standing type 1 diabetes for more than 30 years seem to escape serious major complications from the cardiovascular or renal systems. This project is focused on protective factors, including the role of protective genetics.

The EU-Interreg IV project that started in 2011 linking southern Sweden with eastern Denmark is an important project to broaden the basis of EpiHealth researchers. Similar collaborations are planned within other EU consortia and applications have been submitted during 2011.

Within the European Prospective Investigation into Cancer and Nutrition (EPIC) research network, representatives for the Malmö biobanks have played an important role as collaborators with many other European centers, for example related to cancer (Jonas Manjer), diabetes (Peter M Nilsson, Leif Groop), and cardiovascular disease (Olle Melander). Advances in understanding the gene-environmental interaction linked to dietary intakes have been achieved (Marju Orho-Melander) as well as regards similar interactions linked to physical activity (Paul Franks).

In summary, the strategic research network EpiHealth is now taking up a leading role in Sweden, also inviting researchers from other universities (Umeå, Jönköping, Karolinska Institute) to join us during conferences and research projects, and to upload their projects at our web site for the project data base found there. One example was that seven researchers from the Umeå University were invited and paid for by EpiHealth to participate in the annual EpiHealth conference on biobank-based research held in Uppsala on October 3-4.

Internationally seen, the trend is that researchers belonging to EpiHealth have contributed to many large consortia for the description of the genetic architecture of some common risk factors and chronic diseases such as hypertension, hyperlipidaemia, obesity, myocardial infarction, type 2 diabetes and some cancer forms. This could lead to cutting-edge scientific breakthroughs were cohort data and genetic information from Malmö (MPP, MDC) and Uppsala (ULSAM, PIVUS) have already made large contributions.

Our contacts with universities and academic centres are of greatest importance, for example with the Stanford University and the Broad Institute, Boston, USA.

FRÅGA 58



D1. Scientific quality in an international comparison

FRÅGA 59



c. Please upload the Excel-file "D1 c List of degrees" that was sent out together with the instruction for reporting. The Excel-file should include name of person, gender, type of degree obtained in 2011.

Antal bifogade filer: 1. Filen/filerna kan ses i resultatöversikten (webb).

FRÅGA 60



Please also state the number of obtained doctoral and licentiate degrees (male and female) during 2011, from the strategic research environment. The numbers in the boxes below should be the same as the number of degrees that have been listed in the excel-file D 1 c.

	Female	Male
Number of PhD degrees	30	9

FRÅGA 61



	Female	Male
Number of Lic degrees	1	0

FRÅGA 62



D.1 Scientific quality in an international comparison

FRÅGA 63



d. Publications 2011

Please only list articles published during 2011, not submitted papers or manuscripts. Please upload the Excel-file "D1 d i-iii List of publications" that was sent out together with the instruction for reporting. All sheets in the excel-file should be filled in with information on the following areas before uploading.

i. Scientific peer-reviewed publications in refereed journals. Including: Authors, Title, Journal, Volume, Issue, Pages (x-y) and Year of Publication.

ii. Peer-reviewed conference papers.

iii. Other scientific publications (books, theses etc).

Antal bifogade filer: 1. Filen/filerna kan ses i resultatöversikten (webb).

FRÅGA 64



Please also state the number of publications in 2011 from the strategic research environment. The number should be the same as the number of publications that has been listed in the excel-file D 1 d i-iii.

	Number of scientific peer-reviewed publications	Number of peer-reviewed conference papers	Number of other scientific publications (books, thesis etc.)
	660	4	58

FRÅGA 65



D.1 Scientific quality in an international comparison

FRÅGA 66



e. Conferences, research visits and visiting researchers in 2011

Please upload the Excel-file "D1 e i-iii List of conferences etc" that was sent out together with the instruction for reporting. All sheets in the excel-file should be filled in with information on the following areas before uploading:

i Major conferences and seminars arranged.

ii Visiting researchers (not included in C2a) and duration (more than 2 weeks). (Name, position, home university etc).

iii Research visits by personnel in the strategic research environment (included in C2 a) and duration (more than 2 weeks). (Name, position, host university, department etc.).

Antal bifogade filer: 1. Filen/filerna kan ses i resultatöversikten (webb).

FRÅGA 67



Please also state the number of conferences, visiting researchers and research visits during 2011. The number should be the same as the number that has been listed in the excel-file D1 e i-iii.

	Number of conferences	Number of visiting researchers	Number of research visits
	16	10	8

FRÅGA 68



D.2 Strategic importance for the business sector and society

It needs to be stressed that there is a significant time-lag between the production of results and their impact on the business sector and society.

FRÅGA 70



b. Innovation impact in 2011

Some research has an impact on industry and society e.g. concerning improved methods for treatment, improved effectiveness etc.

i. Please state names and business registration numbers (only for Swedish organizations) of the organizations that during 2011 have utilized results and competence from the strategic research environment in the development of improved methods etc.

Start by specifying the number organizations utilizing results and competence from the strategic research environment in the development of improved methods etc. Click on OK and the specified number of rows will be created. Fill in the created table by stating name of organization, business registration number and comments (if any).

Number of organizations

2

Name of organization	Business registration number	Comments (e.g. type of innovation)
National Board on Health and Welfare	2021000555	Medical Birth Register improvements
Astrazeneca AB	5560117482	Utilization of epidemiological data from MDC cohort

FRÅGA 71



D2. Strategic importance for the business sector and society

FRÅGA 72



b. Innovation impact in 2011 (cont.)

Some research has an impact on industry and society e.g. through supporting the development of new goods, services or processes.

ii. Please state names and business registration numbers (only for Swedish organizations) of the organizations that during 2011 have utilized results and competence from the strategic research environment in the development of goods, services or processes.

Start by specifying the number of organizations utilizing results and competence from the strategic research environment in the development of goods, services or processes. Click on OK and the specified number of rows will be created. Fill in the created table by stating name of organization, business registration number and comments (if any).

Number of organizations

Name of organization	Business registration number	Comments (e.g. type of innovation)
National Board of Health and Welfare	2021000555	Support of the Medical Birth Register
Astrazeneca Ltd.	5560117482	Epidemiological studies collaboration

FRÅGA 73



D2. Strategic importance for the business sector and society

FRÅGA 74



b. Innovation impact in 2011 (cont.)

iii. Have new or improved products/groups of products such as services or goods been utilized by public organizations during 2011?

Yes

No

FRÅGA 75



iv. Have new or improved products/groups of products such as services or goods been introduced in the market during 2011?

Yes

No

FRÅGA 76



D2.Strategic importance for the business sector and society

FRÅGA 77



b. Innovation impact in 2011 (cont.)

v. Were new private or public companies established during 2011 as a consequence of research and activities related to the strategic research environment?

Yes

No

FRÅGA 78



D2.Strategic importance for the business sector and society

FRÅGA 79



b. Innovation impact in 2011 (cont.)

vi. If new private or public companies were established during 2011 ("yes" on previous question). please list names and business registration numbers of the new companies in 2011.

Start by specifying the number of new private or public companies. Click on OK and the specified number of rows will be created. Fill in the created table by stating name of organization, business registration number (only for Swedish organizations) and comments (if any).

Number of new companies

Name of organization	Business registration number	Comments

FRÅGA 80



D2. Strategic importance for the business sector and society

FRÅGA 81



c. Immaterial property rights in 2011

i. Has there been any application for immaterial property rights (IPR) during 2011? (Immaterial property rights consist of patents, design patents and trade mark protection).

Yes

No

FRÅGA 82



D2. Strategic importance for the business sector and society

FRÅGA 83



c. Immaterial property rights in 2011

ii. If there has been any applications for for immaterial property rights (IPR) during 2011 ("yes" on previous question), please list the applications below. Immaterial property rights consists of patents, design patents and trade mark protection.

Start by specifying the number of applications for immaterial property rights (IPR) during 2011. Click on OK and the specified number of rows will be created. Fill in the created table by stating patent/ID-number and type of IPR.

Number of immaterial property rights

Patent/ID-number

FRÅGA 84



D2. Strategic importance for the business sector and society

FRÅGA 85



d. Mobility in 2011

Please upload the Excel-file "D2 d i-iii Mobility" that was sent out together with the instruction for reporting. All sheets in the excel-file should be filled in before uploading. The Excel-file should include name of person, gender, name of organization etc in the following areas:

i. List of persons from industry who have been employed or engaged within the framework of the strategic research environment during 2011. (By employed we mean at least 10 percent of a full time employment. By engaged we mean e.g. in kind contributions. By industry we mean privately and publicly owned companies active in a market.)

ii. List of persons from organizations outside of academia other than industry, who have been employed or engaged within the framework of the strategic research environment during 2011. (By employed we mean at least 10 percent of a full time employment. By engaged we mean e.g. in kind contributions.)

iii. List of researchers from the strategic research environment who have been employed or engaged by industry or industrial research institutes during 2011. (By employed we mean at least 10 percent of a full time employment. By engaged we mean e.g. in kind contributions.)

Antal bifogade filer: 1. Filen/filerna kan ses i resultatöversikten (webb).

FRÅGA 86



Please also state i) the number of persons from industry, ii) the number of persons from organizations outside of academia other than industry, and iii) the number of researchers from the research environment who have been employed or engaged by industry/industrial research institutes during 2011. The number should be the same as the number of persons that has been listed in the Excel-file D 2 d i-iii.

	Number of persons from industry	Number of persons from organizations outside of academia other than industry	Number of researchers from the research environment who have been employed or engaged by industry/industrial research institutes
	4	0	3

FRÅGA 87



D2. Strategic importance for the business sector and society

FRÅGA 88



e. Education in 2011

i. Has the strategic research environment carried out contract education on behalf of external clients during 2011?

Yes

No

FRÅGA 89



D2.Strategic importance for the business sector and society

FRÅGA 90



e. Education in 2011

ii. If the strategic research environment has carried out contract education during 2011, please list clients on whose behalf the strategic research environment has carried out contract education.

Start by specifying the number of clients. Click on OK and the specified number of rows will be created. Fill in the created table by stating name of external client, subject area of contract education, number of participants of the contract education and extent of contract education (days).

Number of clients

Name of external client	Subject area of contract education

FRÅGA 91



D2. Strategic importance for the business sector and society

FRÅGA 92



f. Policy impact in 2011

Some research has impact in the public realm, e.g. through supporting government in setting policy or standards. Please, list any such impacts during 2011.

Start by specifying the number organizations where these impacts have taken place. Click on OK and the specified number of rows will be created. Fill in the created table by stating name of organization, area of activity, role and kind of impact.

Number of organizations

Name of organization	Area of activity	Role	Kind of impact
National Board on Health and Welfare	Medical Birth Register	National expertise provided	Improvements in the recommendations for assisted deliveries

FRÅGA 93



D2. Strategic importance for the business sector and society

FRÅGA 94



g. Public impact in 2011

Please list public impacts through for instance media, textbooks, conferences, popular science presentations and policy lobbying etc during 2011.

Start by specifying the number of activities. Click on OK and the specified number of rows will be created. Fill in the created table by stating type of activity, purpose of activity, name of activity and reference (e.g. <http://www.xxx.yy>)

Number of activities

9

Type of activity	Purpose of activity	Name of activity	Reference
Article in LU monthly journal	Information to LU staff and readers	Interviews with representatives of EpiHealth	LUM 2011:9: pp.18-19
Article in Uppsala Nya Tidning	Information about screening cohort	Interviews with staff	UNT 20 April 2011
Article in Svenska Dagbladet	Information about LifeGene	Declaration of researchers	SvD 22 December 2011
Research Day at Medical Faculty	Information on lung disease epidemiology	Research Day 2011	www.med.lu.se
Article in Sydsvenskan	To describe the epidemiology and causes of obesity	Obesity and overweight in mid-life	SDS 7 February 2011
Article in Dagens Medicin	Describe hypertension guidelines	New hypertension guidelines	Dagens Medicin 26 August 2011
Article in Uppsala Nya Tidning	Describe the EpiHealth Screening	DI-decision does not involve Uppsala study	UNT 27 December 2011
Blog debate on SFAM Ordbyte	Describe EpiHealth and its purpose	EpiHealth and population-based studies	SFAM Ordbyte, Autumn 2011, several contributions
Conference LMK stiftelsen	Information on cancer and patients	LMK conference, Mef Nilbert	Björkliden, September 2011

FRÅGA 95



D3. Other comments

FRÅGA 96



Other comments

Comments on C3 - Economic report for year 2011

EpiHealth has spent an increasing sum of its budget during 2011 to support research activities and the building of infrastructures, especially the costly EpiHealth Cohort that started in Uppsala in April 2011. As we have introduced new routines for registration of active membership in the EpiHealth extended network this has impacted on the total sum of financial resources provided by the researchers themselves as well as provided by the two universities. In spite of these developments the EpiHealth network has managed to increase the total external funding by 5% based on competitive research applications. We declare that we have spent all of the budget in 2011 and aim for more spending in 2012, as we recruit two new Professors in epidemiology at LU. This has been planned for in the budget. "Other costs" corresponds to the indirect costs according to the normal accounting systems at the universities involved.

General comments

EpiHealth has strengthened its positions markedly during 2011, both on a national and international level, with increasing number of research activities, active members, societal contacts, conferences, symposia and publications. Even if EpiHealth is a strategic research area within the Lund and Uppsala universities, we have reached out for contacts with other universities and academic institutions, most notably with the Umeå University (Göran Hallmans, Olov Rolandsson) and the Karolinska Institute (Nancy Pedersen, Erik Ingelsson), as well as with the Astrazeneca AB (Gunnar Engström) and the Region Skåne county council (Hannie Lundgren, Ulf Malmqvist). This shows the ambition of EpiHealth to create and support national networks for research in advanced epidemiology and to play a leading national role, bridging gaps between academic institutions, industry and societal organisations. The contribution from EpiHealth to the National Board of Health and Welfare in Sweden (focused on the Medical Birth Register) is of great importance on a national scale, as epidemiological observations based on registers of high quality have influenced clinical practice for preventive maternal health care and the way deliveries are planned for. This and other examples bring gender issues into epidemiology and aim to safe-guard the health of women, mothers and their newborn children.

The most important recent development is the start of the EpiHealth Cohort based on screening activities offered to subjects aged 45-75 years, starting in Uppsala in April 2011 and in Malmö in January 2012 after intensive planning during 2011. However, an important, and potentially negative recent challenge, is the decision taken by Datainspektionen (Data Inspection Board) on December 19, causing our sister project LifeGene to stop its activities due to formal and legal problems as stated by Datainspektionen. Even if we fully believe that the legal and formal status of the EpiHealth Cohort is stronger, based on the ethical permission obtained for the pilot phase, we feel that this decision by Datainspektionen could eventually prove to be a serious blow to ambitions to develop population-based screening studies and biobanking for advanced epidemiology. The only solution to this would be that new political decisions have to be taken at the central national level by the Government and Parliament of Sweden. We trust the Research Council of Sweden, as well as the Lund and Uppsala universities that jointly run EpiHealth, to inform central politicians and to facilitate a political decision in favour of continuous support for population-based epidemiological research projects aiming for national and international excellence.

The important international role for Sweden in advanced epidemiology rests on the unique resources available in this country, for example the personal 10-digit identification (ID), a number of national registers of highest quality and the willingness of many citizens to support screening activities and research projects, including their voluntary donation of blood samples for research on biomarkers and genetic markers of disease conditions. This makes it an ethical imperative that Sweden contributes to international research in order to promote healthy conditions for individuals and populations based on new understanding. The first step is often guided by the epidemiological observations of risk factors or potential disease mechanisms based on gene-environmental interactions. This is exactly where the strategic research area EpiHealth would like to contribute and to play a leading role, in full agreement with the political ambition of the Swedish authorities to support an important role for Swedish research also internationally, a role that could be much larger than the modest size of the population (9.5 million inhabitants) indicates compared with that of other corresponding countries.