ANNUAL REPORT 2017

UMEÅ UNIVERSITY

EPIDEMIOLOGY AND GLOBAL HEALTH UNIT
Department of Public Health and Clinical Medicine

Annual Report 2017

EPIDEMIOLOGY AND GLOBAL HEALTH UNIT

Department of Public Health and Clinical Medicine

Umeå International School of Public Health (UISPH)
Umeå Centre for Global Health Research (UCGHR)

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Prologue

To all staff, students, collaborators and other colleagues,

What an adventurous and challenging year 2017 turned out to become!

We confidently moved into the new year after having celebrated our 30-year anniversary as a successful and continuously developing research and teaching environment. The Forte 10-year programme funding for the Umeå Centre for Global Health Research (UCGHR) had just ended (2007-2016) – although this was a change for which we were well prepared. During recent years we took steps to streamline activities to reduce annual costs, while at the same time intensifying our search for external funders.

We developed a new internal organisation that was launched at the start of 2017. A guiding principle behind our new organisational structure was to facilitate for all staff to contribute, to the best of their ability, to our collective work, both in the short- and long-term. The new Research Strategic Group and Educational Strategic Group have key responsibilities to guide future development. We recognised that the previous highly valued UCGHR research themes had become less relevant and hence they were dissolved to make way for new research profiles: *Emerging Global Health Challenges, Health Systems and Policy,* and *Northern Sweden Health and Welfare.* We formed Academic Dialogue Spaces, emerging from bottom-up initiatives, to encourage increased scientific dialogue and to promote the development of cutting-edge expertise. After this first year with the new internal organisation we feel confident that we are moving in the right direction.

During 2017 the planning for the relocation to a new house was intensified. The Room Group played a key role and should be acknowledged for their achievements. They are: KARIN JOHANSSON, KRISTINA LINDVALL, JONAS HANSSON, ULRIKA HARJU, IDA LINANDER, GÖRAN LÖNNBERG, and KLASSE SAHLÉN. In the time of writing this we are already situated in the new house. We managed a demanding transition smoothly, with minimal disruption to our daily work. *Thanks to all of you for being patient and for helping one another!*

As in every year, special thanks go to the Annual Report working group! As usual LENA MUSTONEN has had a core role, this year with the creative support of ELISABET HÖÖG and JENNIFER STEWART WILLIAMS. ANNELI IVARSSON also stepped into the group, experiencing this as an opportunity to reflect on her last year as EpiGH Unit Head, after almost five-years in the role. Years full of demands and hard work but also of joy and the fulfilment of collaborative work.

We would like to thank you all for the support and trust shown to the leadership during 2017!

ANNELI IVARSSON	**ANNA-KARIN HURTIG**	**KLAS-GÖRAN SAHLÉN**
Unit Head until December 2017	Deputy Unit Head until December 2017, thereafter Unit Head	Deputy Unit Head

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Events & Columns

Final report of the Center Party donation for global research collaboration

In 2006, the Swedish Center Party donated 10 million SEK to Umeå University for scholarships for doctoral and masters students from low- and middle-income countries. The donation has been very important for many young researchers. In October 2017, 31 of those awarded scholarships had successfully defended their PhD theses. In the next two years, another 11 fellows are expected to defend. In addition, 31 master students also received scholarships from the donation.

The so-called sandwich model for doctoral education is cost effective. Normally, a university's costs for a doctoral student's education amounts to approximately 2 million SEK, which means that 10 million SEK would finance five PhDs. The sandwich model produces high quality researchers. Newly defended PhD's return to work and contribute in their home countries.

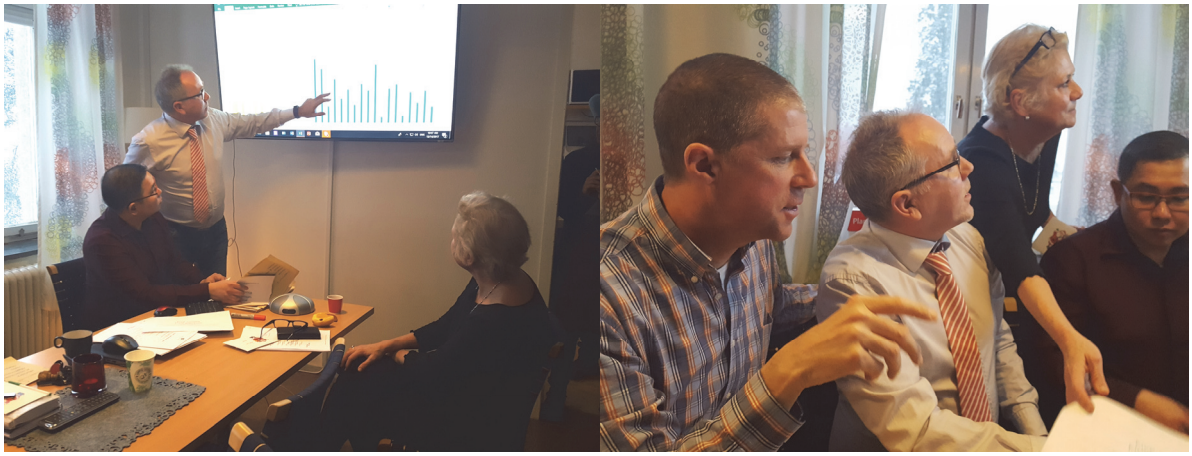
On October 26, 2017, Epidemiology and Global Health reported the outcome of the donation by the Swedish Center Party's chairman Annie Lööf and the former chairman Maud Olofsson. Together with the Västerbotten Province Governer, Magdalena Andersson, Prorektor Katrine Riklund, Professors Stig Wall and Anneli Ivarsson from Umeå University and Angéla Ekman-Nätt from Fores Nord Think Tank, they participated in a seminar on international cooperation in postgraduate education.

UNIT DAY

Unit Day at Hotel Aveny
Photos: Lena Mustonen

At this unit day we listened to reports from the educational and research strategic groups. We also talked about transformative learning, our working environment and grant support. The day ended with a teambuilding competition and a dinner.

THE STAFF MEETING (PUMP)

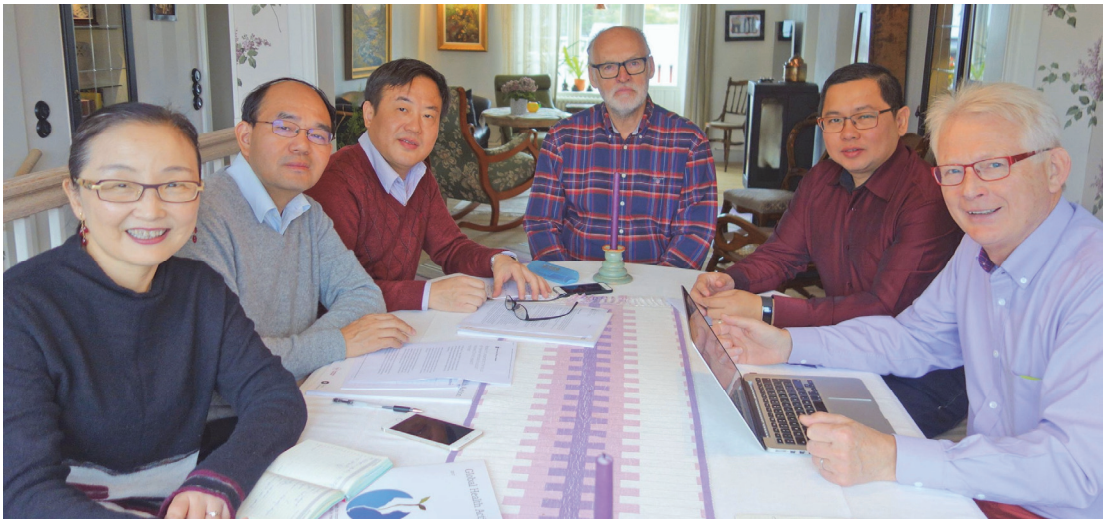


Presentations during a monthly staff meeting in the fika room

VISIT FROM THE FACULTY OF MEDICINE, SEBELAS MARET UNIVERSITY IN INDONESIA

Prof. Hartono (Dean of Faculty of Medicine), Associate Professor Ari Natalia Probandari (Director of PhD Programme), and Dr. Brian Wasita (Research Coordinator at Faculty of Medicine) at Universitas Sebelas Maret (UNS) visited the Unit of Epidemiology and Global Health on May 8-9, 2017. The collaboration with UNS has been pioneered with A/Prof. Probandari who participated in the MPH programme in 2003 and later in the PhD programme during 2006-2010. The collaboration between the two institutions were further strengthened in research through A/Prof. Probandari's post-doc period at EpiGH with Prof. Nawi Ng, and through several visits of EpiGH staff member to UNS for capacity building activities. Dr. Yusuf Mashuri of UNS is currently participating in the 2-year master programme in Public Health at EpiGH. The teams exchanged information about research and education in respective universities, and several action points for collaboration in research and education during 2018-2020 were further agreed upon in a memorandum of understanding between the two institutions. In 2018, EpiGH researchers will act as co-supervisors for two PhD students at UNS and give a workshop on mixed methods data analysis at an international conference organised by UNS in October 2018. One PhD student registered at UNS will visit EpiGH for two months during 2018 to work on a paper based on their PhD thesis.

VISIT BY RESEARCHERS FROM SCHOOL OF PUBLIC HEALTH FUDAN UNIVERSITY AND SHANGHAI TRADITIONAL CHINESE MEDICINE UNIVERSITY



Prof. Genming Zhao (Chair of the Department of Epidemiology at SPH-FU), Prof. Biao Xu (Deputy Chair of the Department of Epidemiology at SPH-FU) and Prof. Rong Shi (Executive Dean, School of Public Health, Shanghai University of Traditional Chinese Medicine) visited the Unit of Epidemiology and Global Health on September 19-22, 2017. This is the third exchange visit following Prof. Lars Weinehall, Prof. Nawi Ng and Dr. Jing Helmersson's visit to Fudan University in October 2016 and Prof. Biao Xu and Dr. Qi Zhao's (SPH-FU) visit to Umeå University in June 2015.

The research team shared experience and discussed potential research collaborations between Umeå University and Fudan University within the area of interventions for non-communicable disease (NCD) prevention and control. Both research teams have had extensive experience in conducting epidemiological studies on NCD risk factors at the population level, through the long running research on the Västerbotten Intervention Programme in Sweden and the Shanghai Cohort in China. Similarities and synergies between the two research teams were discussed and we identified research questions to be addressed based on cross-country comparative analyses. A workshop was organised for staff members and the Chinese delegates presented their research on chronic NCD risk factor surveillance and the use of traditional Chinese medicine in health promotion. Researchers from Umeå University also presented their works, including research based on the Västerbotten Intervention Programme, ZIKAPLAN and SCAPIS. The delegates also visited the Umeå SIMSAM Lab where they were given a presentation. The exchange visits have resulted in two research proposals, one submitted as a project grant between China and Sweden to the Swedish Research Council in May 2017, and the other submitted as an initiation grant to STINT in November 2017. Both proposals aimed to move the collaboration further through mutual exchange of education and research activities.

MOVING TO A NEW HOUSE

For many years a 1914 photograph of our ”house” hung at the wall in the fika room. The house, which was formerly part of the hospital, has been used for over 100 years. During the last 30 years EpiGH has used parts of the house for offices. In the late 1980s only a few rooms were used but this gradually expanded as EpiGH grew in numbers. During 2017 we were busy planning for a new era in our new offices located in another part of the hospital area (Building 5B, floors 3 and 4). The old house will be knocked down to make way for a new building. The Room Group has been working hard to ensure a smooth transition.

We look forward to the new house!

THE SWEDISH WAY OF FIKA, PUMP, LAGOM...

What is fika?

One of the most important words in the Swedish language is "fika". When I started my one-year sabbatical in April 2017, Professor. Anneli Ivarsson, the head of the EpiGH Unit and also my supervisor, suggested that I join fika, an event held every day at 10 a.m. and 3 p.m. The reason for this was not only to enjoy coffee and sweets but also to take part in conversation, exchange ideas and to deepen understanding of research areas undertaken across the Unit.
Fika means "coffee break" in English. However, it is much more than breaking for coffee (or tea for that matter). According to the official homepage of the Swedish Government, fika is a traditional social phenomenon. It's more about talking and sharing time together with colleagues, friends or family. In fact, the Swedes don't like to refer to fika as "just a coffee break". For them, fika is "fika". Chatting over a cup of coffee every day is the essence of fika. It has something in common with "Ocha no Jikan (お茶の時間, tea time)" in Japanese.

The Unit in which I worked has a designated "fika room". As its name suggests, all staff members including researchers, administrators, technical staff, PhD students and temporary workers enjoy chatting together over drinks, fruits and sweets in their fika room. At lunch time, the room is where people come together to enjoy their lunch over conversation.

There are certain traditional foods to eat at fika time. Some favorites are cinnamon buns (kanelbulle) and ginger cookies (pepparkaka). The Swedes are very fond of sweets. However, fikas at the Unit also include fresh fruits, the most popular of which is the banana although various kinds of fruits are provided. It is possible to buy a range of fruits all year round in northern Sweden. In early winter, you can buy "kaki" which looks like a Japanese persimmon. The kaki is tasty and seedless and I bought it several times. You can also buy mandarins and other popular Japanese citrus fruits - depending on the season and availability.

But fika comes with serious staff duties. I shared my fika duty with Isabel. Fika duty responsibilities include: 1) At least once (usually Friday), bring sweets; 2) Clean and stock the coffee machines; 3) Purchase fresh milk, and 4) Stack, run and empty the dishwasher. When I returned from a visit to Japan, I brought some Japanese sweets to share in the fika room. However, I suspect that the Swedes preferred their sweets to the salty Japanese varieties.

Northern Swedish communication

In following on let me say that other very important Swedish words are "tack" (thank you) and "hej" (hello). When you say hej twice - hej hej - it promotes a feeling of familiarity. But in northern Sweden, there is a very important "word" or "noise" which signals "agreement" with another's point of view. This is made by shutting one's mouth and making a type of nasal sound while quickly inhaling breath. This really falls into the category of body language. This is

strictly a northern Sweden custom as it isn't used in the south – although many in the south are amused by this rather odd facial response. Before I understood this I assumed that the Swedes I knew were prone to drooling as a result of too much talking. However, I eventually understood that what I had been observing was a form of communication.

PUMP meetings

A workplace meeting is held once a month in the fika room. The meeting is called PUMP as in a water pump. This term was fondly adopted in honor of John Snow who was a pioneer of public health and arguably the first epidemiologist. When cholera broke out and spread in London in 1854, John Snow meticulously plotted the geographical distribution of cases. He eventually identified that the source of the disease was the Broad Street water pump. The pump handle was removed to prevent further cases. The meetings are referred to as "PUMP" as a reminder of the role of epidemiology in public health.

The PUMP meetings run from 8:30 a.m. to about 10:00 a.m. when everyone breaks for fika. I had an opportunity to introduce myself at my first PUMP meeting. A key aspect of PUMP meetings is participation by all staff - researchers, administrators, technical staff, PhD students and visiting workers. There is encouragement for young and emerging researchers and PhD students to express their opinions. In my university faculty in Japan, similar meetings are held one or twice a month. However, these meetings in Japan are generally only for teaching staff. Administrators are sometimes included but students and visitors are not. This is one of the ways in which I observed on the ground Swedish democracy.

The "lagom" way

The workplace in Sweden is not hierarchical as in many other countries. This makes for much less stress and encourages staff to work together collaboratively. I admire this and the Swedish leadership style of inclusiveness very much.

The Swedish way is the "lagom" way. This reminds me of times gone by in Japan. When I think back to my working life in the period from the 1960s to the 1980s, I recall that the corporation in Japan was like a "big family". This meant that workers were guaranteed lifetime employment, and the workplace functioned like a community. When I started my career as a pediatrician at a Japanese general hospital in the 1980s, we enjoyed overnight travel with co-workers and family once or twice a year. I have good memories of those days. However, the working environment in Japan today is not always harmonious and stress-free. I worry that the work environment of the past has been lost. But we can look to Sweden.

"Lagom" is a Swedish word which means "moderate" – just enough, sufficient, adequate or just right. In Swedish lagom style, the leader of an organization does not use a top-down approach but instead tries to build consensus using a consultative democratic approach. This is the opposite of American and Japanese leadership. Problems are solved in an open co-operative manner. The population of Sweden is only one tenth that of Japan but we have a lot to learn from this small country - a world-leader in many fields.

Lagom is a very useful tactic for solving problems in daily life and also for governments and leaders at all levels. Our world faces many challenges - climate change, refugees, wars, terrorism and careful considered negotiation and consensus building is one way forward.

FIKA, https://sweden.se/culture-traditions/fika/

Child Health, Vol.21, 2018 (written in Japanese)

http://www.shindan.co.jp/books/index.php?menu=03&zcd=6

Hajime Takeuchi

Prof, MD (Pediatrician) Guest Researcher of Epidemiology and Global Health & School of Social Welfare, Bukkyo University, Kyoto, Japan

Edited by Jenny Stewart Williams

ZIKAPLAN - LEADING AND COORDINATING A LARGE EU CONSORTIUM

Project meeting in Recife, Brazil

From 1 April 2018, *ZikaPLAN* (Zika Preparedness Latin American Network) will undergo its first interim reporting after completing eighteen months of operation. The Unit of Epidemiology and Global Health of Umeå University is the host and coordinator of this large consortium, funded by the European Union's H2020 research and innovation programme. We at EpiGH are one out of the 25 partner institutions of ZikaPLAN.

In April 2016, the EU specifically called for the establishment of a network in Latin America to strengthen the research capacity and accelerate a research response to the Zika threat. Zika, as known, is going around the world and wherever there is the *Aedes aegypti* mosquito, there is risk of an outbreak. Zika is also a European problem because we live in an interconnected and a globalized world. The public health agencies have already seen thousands of travelers bringing Zika to Europe.

The dynamism of this international consortium is that through many of its collaborators in Latin America, researchers here in Europe have access to samples and patient cohorts that would not have been possible otherwise. At EpiGH, we have the dual role of scientific and management coordination. From a scientific point of view, the advantage is that one brings together professionals and expertise from various angles. One does not just collaborate, but also synergizes and this gives our research a multiplying effect. It is very fascinating to work with a consortium because you will listen and interact with people who have other skill sets. This helps each one involved to improve upon their research practice. Nonetheless, working with a consortium such as this helps every scientist to make his or her research more visible and disseminate it even more widely.

Most of all, a consortium like ZikaPLAN, gives an opportunity to network and provides access to laboratories and research materials in other countries with complete agreements while working towards a common goal. Moreover, the European Commission encourages and funds frequent meetings which helps in getting together to brainstorm. This is most beneficial for creative collaboration and definitely enhances research outputs.

An example of collaboration is the Umeå research team itself, which includes a research group led by virologist Niklas Arnberg that focuses on neuropathogenesis. A mathematical modelling team is supported by Joacim Rocklöv. Another group, led by John Kinsman, is using social science to develop communication messages for affected communities in Brazil. The different research output from these groups contributes to many of the 15 work packages of ZikaPLAN.

ZikaPLAN has received funding from European Union's Horizon 2020 research and innovation programme, under grant agreement number 734584.

Annelies Wilder-Smith
Scientific coordinator of ZikaPLAN

Raman Preet
Project coordinator and serves as the linkage with the European Commission

Organisational setting

Organisation, Leadership and Staff

The work of the Unit of Epidemiology and Global Health (EpiGH) is shaped by a set of key values that are central to the way in which we conduct research and education and engage with society. These efforts are underpinned by our aim which is to contribute to equitable and sustainable improvements in health and welfare across the globe. We adopt a broad definition of global health to include public health issues in Sweden, as well as in the rest of the world. Our mission, vison and values are presented on page 5.

EpiGH is a multidisciplinary research and teaching environment located within Umeå University's Medical Faculty, and its Department of Public Health and Clinical Medicine. We host Umeå International School of Public Health with Masters Programmes in Public Health (MPH) and we have an extensive PhD program. Our research is organised under the umbrella of Umeå Centre for Global Health Research (UCGHR). During the last ten years, since the UCGHR began we organised our research into five interconnected themes - *Epidemiological Transition; Life Course Interventions; Primary Health Care; Gender & Health; and Climate Change & Health*. In recent years we began to revitalise our internal organisation. Following a consultation process that involved all staff, we shifted to a new internal organisational structure in January 2017. This is illustrated below (Figure 1).

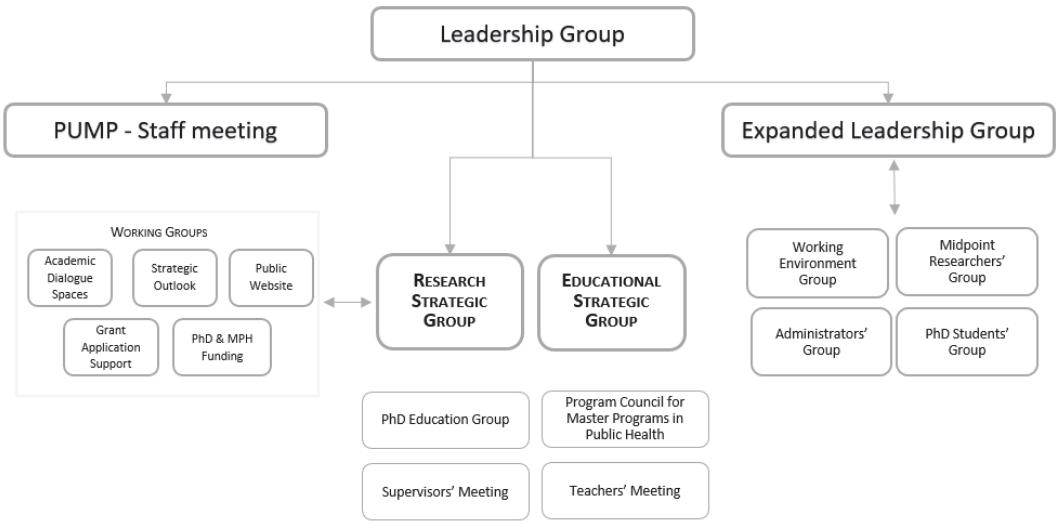


Figure 1. EpiGH organisational chart.

A guiding principle behind our new organisational structure was to ensure that each and every member of the staff contributed, as much as possible, to our collective work, both in the short- and long-term. The new Research Strategic Group and Educational Strategic Group have key responsibilities to guide future development; these Groups comprise many of our more experienced academic staff. A Midpoint Researchers' Group was formed, involving post-docs and others at the beginning of their research careers. This Group was linked to the leadership by having a representative in the Expanded Leadership Group. We formed Academic Dialogue Spaces, emerging from bottom-up initiatives, to encourage increased scientific dialogue and to promote the development of cutting-edge expertise. We recognised that

the previous highly valued UCGHR research themes had become less relevant and consequently they were dissolved to make way for new research profiles: *Emerging Global Health Challenges, Health Systems and Policy,* and *Northern Sweden Health and Welfare*. After this first year with a new internal organisation we feel confident that we are moving in the right direction.

Our Leadership Group is built up by persons having specific responsibilities within the Unit. The Group has an executive mode of working and meets each Monday. Any staff member can approach the Group, or its members, either formally and informally.

The Leadership Group has the following members:

Anneli Ivarsson	Head of Unit, until the end of 2017
Anna-Karin Hurtig	Deputy Head of Unit, until the end of 2017, thereafter Head of Unit
Klas-Göran Sahlén	Deputy Head of Unit
Marie Lindkvist	Study Director
Karin Johansson	Administrative Coordinator
Sara Forsberg	Finance Coordinator

The Unit has a staff of about 80 people comprising researchers/teachers (either full-time, part-time or affiliated), employed doctoral students (not including the so-called "sandwich" doctoral students) and administrators. About two thirds of the staff are women. In addition, there were 34 PhD students enrolled at the end of 2017, 19 of whom were women. The staff and doctoral students have varying types of prior education and experience. They include physicians, nurses, sociologists, economists, social workers, dentists, statisticians, physiotherapists and nutritionists. Their wide-ranging experience - across clinical medicine and the social sciences - greatly enriches our multidisciplinary research and teaching environment.

All staff are encouraged to participate in our monthly staff meetings (PUMP) and the Unit Days that are usually held each semester. Some of our faculty are full time employees, others are attached on a part-time basis. Most of the latter are former PhD students who are continuing their research and also contributing as teachers and supervisors. Others are involved in our research collaborations.

In recent years the Unit has demonstrated commitment to a sustainable environment. We implemented concrete actions for reducing the Unit's carbon footprint, for example by encouraging Skype Business-meetings instead of traveling, using train instead of flight when possible, having double-sided printing set as default on all computers, etc.

Since its inception in 1986 the Unit of Epidemiology and Global Health (EpiGH) has been housed in a 100-year old building that was part of the original hospital in Umeå. Our relocation to new offices has been in the planning stage for several years and during the first half of 2018 it finally happened. We are now getting accustomed to a house originally built in the 1960´s, but fully modernised (building 5B, level 3 and 4, Figure 2).

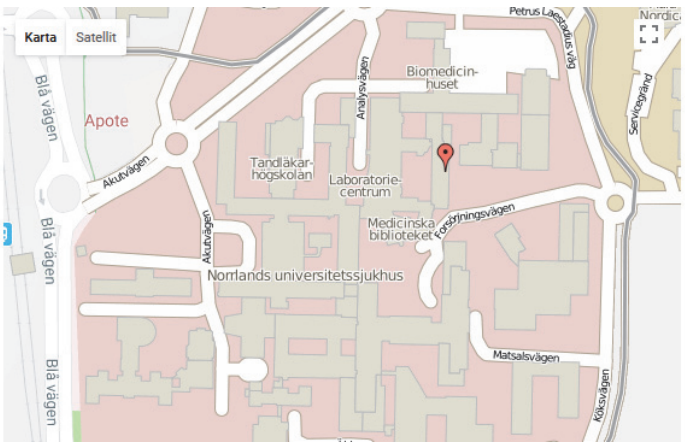


Figure 2. Map showing the location of our new offices within the hospital area.

Finances

The total budget for this year amounted to 41 MSEK, out of which 73 % originated from sources external to the university (Figure 3). Our main activities i.e. research and education, are reflected in the budget. Both are key activities in our daily work, with research activities dominating (Table 1). This year expenses were higher than revenues, resulting in a net deficit of 3.7 Million Swedish Krona (MSEK).

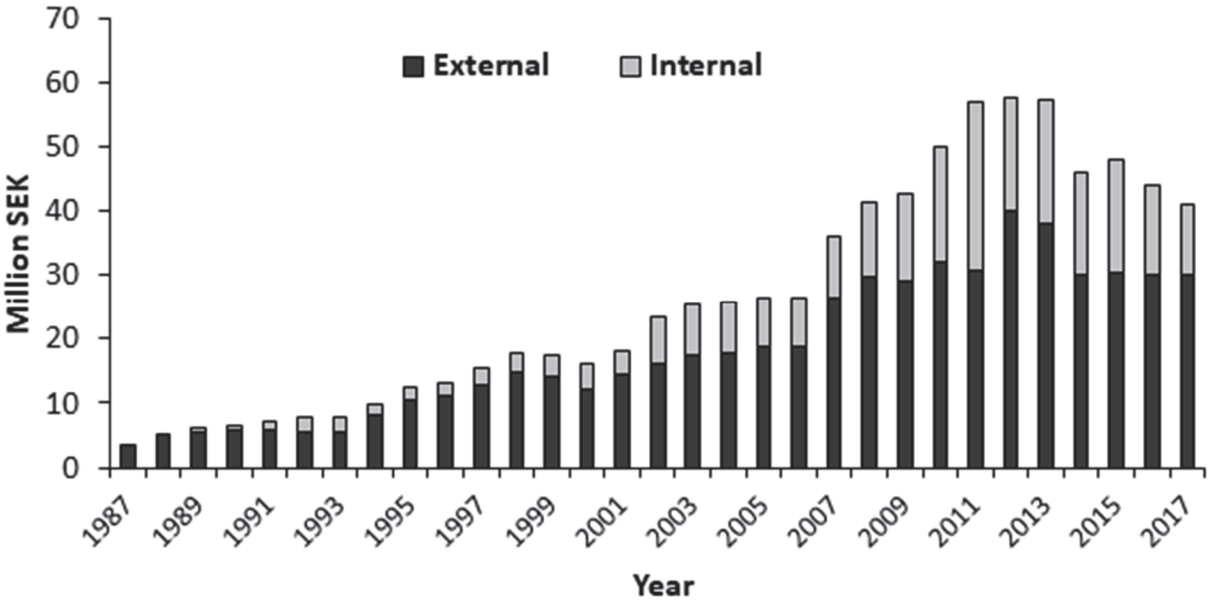


Figure 3. EpiGH annual budget, external and internal contributions, 1987-2017

Our education budget was 7,7 MSEK, of which 2,0 MSEK was support via governmental grants to our Master of Public Health (MPH) programmes, with tuition fees the other major source (Table 1). A few students paid fees out-of-pocket, but the majority were awarded scholarships from different sources: *Umeå University*, *Erling-Persson Foundation*, the *Swedish Institute*, and *Science without Borders*. Figure 4 gives a breakdown of student fees for EpiGH, the Medical Faculty and the University during the past five years

Table 1. Revenues and costs, EpiGH, 2017.

Revenues (1000 SEK)	**Education**	**Research and PhD training**	**Commissioned research**	**Total**
External grants	5 023	21 918	0	24 278
Accrued external funds		-4 122	-1 028	
External contracts	93	0	8 027	5 749
Government grants	2 006	6 307	0	13 086
Other revenues	575	2 287	1	4 461
Total	7 697	26 390	7 000	41 087

Costs (1000 SEK)				
Staff	5 474	16 576	5 686	27 736
Premises	277	933	6	1 216
Other operative expenses	820	5 945	1 179	7 944
Depreciation	0	23	3	26
Overheads	2 942	4 227	735	7 904
Total	9 513	27 705	7 609	44 827

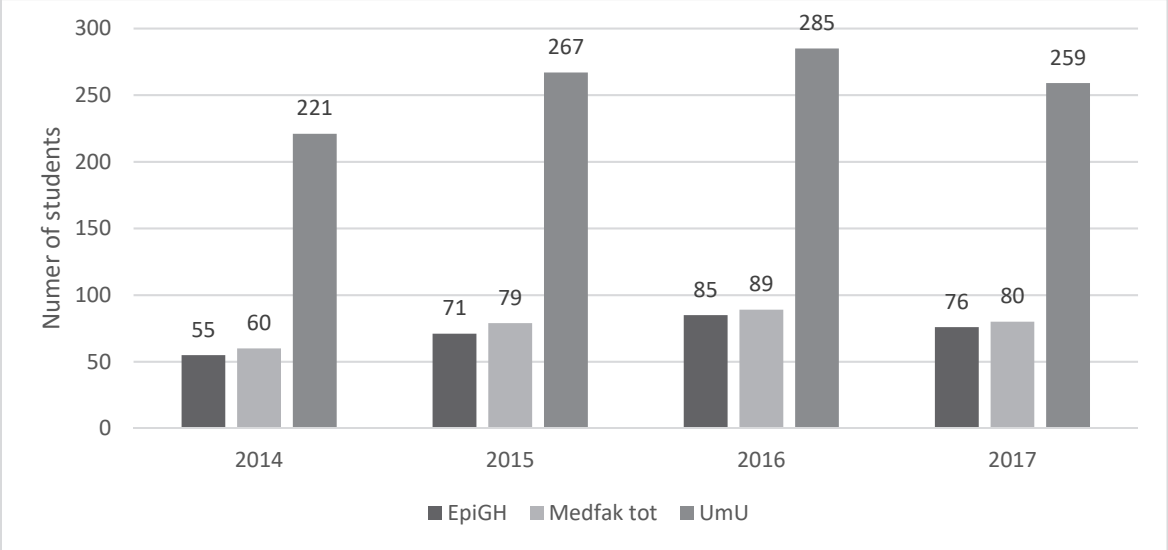


Figure 4. Student fees 2014-2017.

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As in previous years, a major part of our research funding in 2017 was from external sources including both grants and contracts. External revenue for commissioned research was higher during 2017 than at any time in the previous years (Table 1). This was in part due to contracts with the Swedish Public Health Agency. We also received external funds from the Erling Persson Foundation of approximately 11 MSEK to be spent in the next five years. The education budget decreased by 31 % due to an overpayment in 2016 of which 2,9 MSEK was reimbursed in 2017.

Zika is Umeå University's largest EU project and consequently the EU is our biggest beneficiary. Others include the FORTE-Swedish Research Council for Health, Working Life and Welfare, VR-Swedish Research Council and FORMAS-Swedish Research Council. See Figure 5. SIDA funds are both from Uppsala University and Gothenburg University, the Foundations are from Erling Persson, Wallenberg and Riksbanken

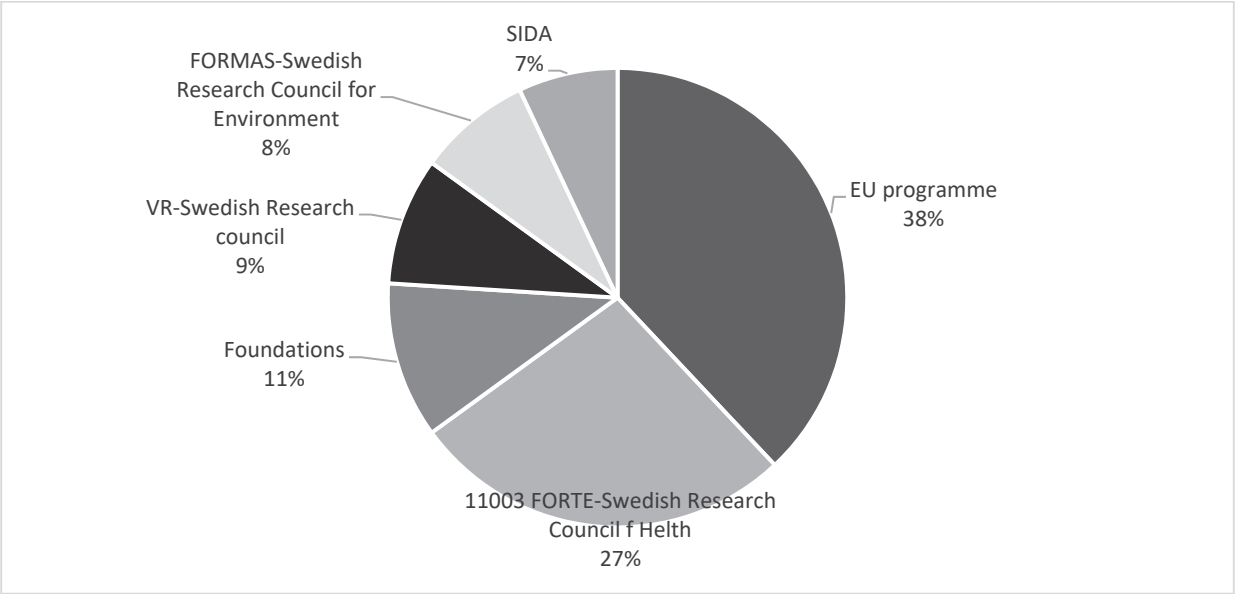


Figure 5. Contributions by external grants, EpiGH, 2017.

Outputs

There are no measures that can fully can evaluate our activities. However, one measurable outcome criterion is the number of publications (Figure 6). The ups and downs of the curve result reflect the processes leading up to a publication, i.e. from a research idea over project planning, data collection and analysis, and ultimately a measurable outcome such as a published paper.

This year eleven PhD students successfully finalised their studies, this being the highest annual number so far (Figure 7). At the end of 2017, 34 PhD students were associated with our Unit, including five new students registered during the year. However, our pool of PhD students is purposely decreasing over time.

The Medical Faculty budget model uses three parameters for assessment of productivity: Publications, PhD exams, and external grants. Each department/unit is given a budget, based partly on this assessment system. The Unit has been increasingly competitive in this regard.

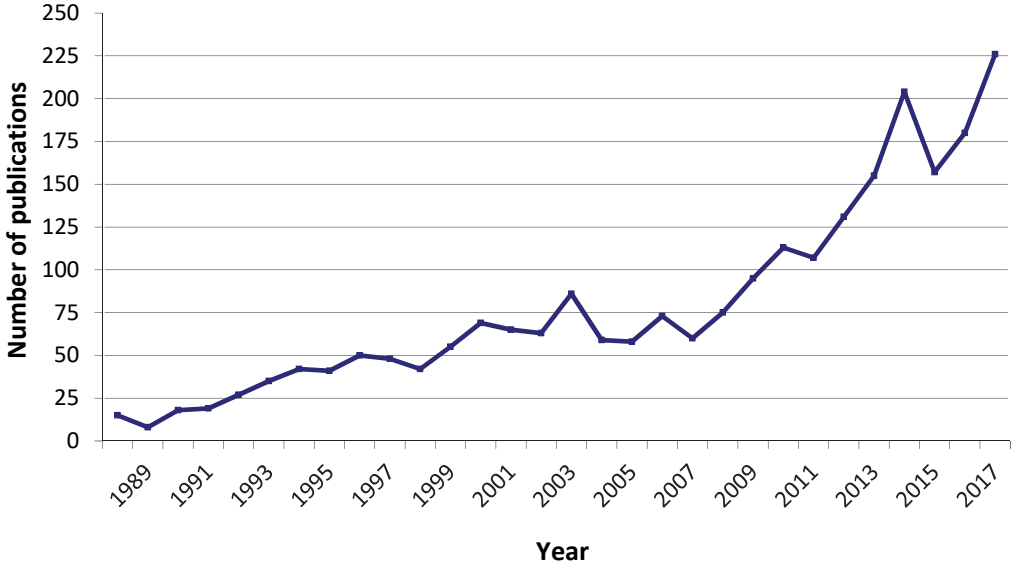


Figure 6. International peer reviewed publications by EpiGH members1986-2017 (registered in the publication database Diva).

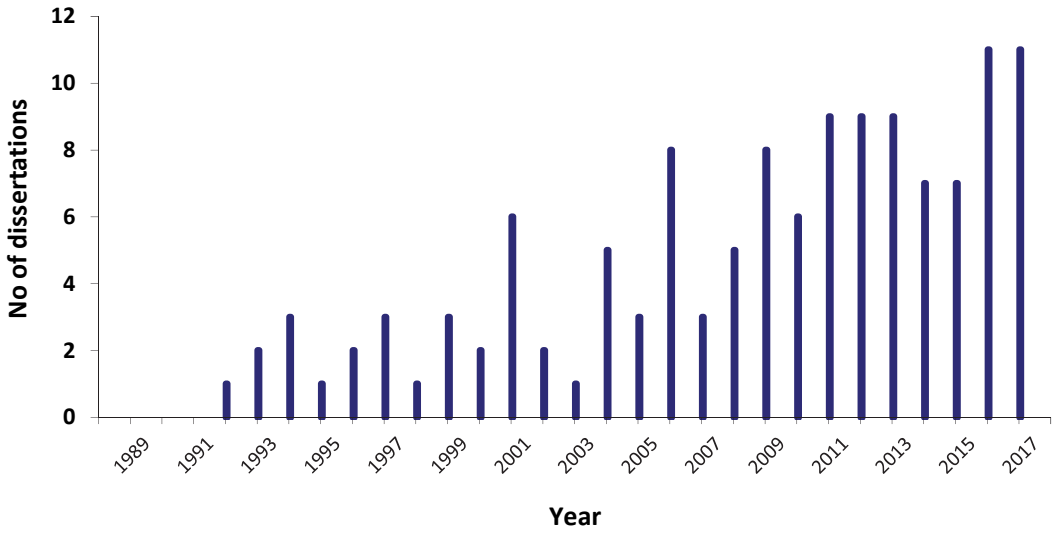


Figure 7. EpiGH, doctoral dissertations, 1987-2017.

Staff

Camilla Andersson. Project assistant in Household Preferences for Reducing Greenhouse Gas Emissions in Four European High Income Countries – HOPE. For more information, please see http://hope-project.net. Camilla Andersson is also working as a journalist.

Mazen Baroudi. Pediatrician, currently working as a project assistant at the Unit of Epidemiology and Global Health and involved in research on youth-friendly health care services in Sweden.

Leigh Bowman. Post doc. PhD in Dengue Epidemiology from the Liverpool School of Tropical Medicine. He lectures at the Liverpool School of Tropical Medicine on arboviruses and is part of a group of consultants working with WHO-TDR on an early warning and response system for dengue. At Umea, Dr Bowman is engaged in research on planetary health, an area that advocates an understanding of natural systems and the importance of environmental conservation to help mitigate the adverse effects of global warming on public health.

Anna Brydsten. PhD-student in Public Health with a master's degree in Sociology. Her research focus is on implications of youth unemployment on health across the life course, and how it relates to individual and structural factors.

Peter Byass. Professor of Global Health and Director of the Umeå Centre for Global Health Research. He directs the WHO Collaborating Centre for Verbal Autopsy, hosted at Umeå University. He is Deputy Editor of Global Health Action and holds honorary Professorships at the University of Aberdeen, Scotland and Witwatersrand University, South Africa.

Anna-Britt Coe. Associate professor in sociology, researcher and teacher at the Epidemiology and Global Health Unit. Teaching on the social pathways of global health and health promotion; social, gender and ethnic inequalities in health; and qualitative data analysis using Grounded Theory methods. Anna-Britt left her position during 2017.

Kjerstin Dahlblom. Senior lecturer in Public Health, is a social scientist and currently involved in a Swedish collaborative research project entitled "Child health inequalities and place: Kjerstin has expertise in participatory research with children in Nicaragua and in Cambodia.

Andreas Ekholm. Financial coordinator. Andreas left for another position during 2017.

Eva Eurenius. PhD in Physiotherapy and Associate Professor in Public Health – working mainly with the Salut Child Health Promotion Programme. Studies within the Salut Programme focus on the pregnant woman's and her partner's health, lifestyle and life situation with follow-ups of children's ditto, aged 0-18 years.

Sara Forsberg. Financial coordinator. Responsible for budgeting, economic planning and accounting. New to the unit, but has worked previous as an accountant for the financial office at Umeå University.

Isabel Goicolea. MD, MSc, PhD. Associate professor, researcher. Her research interests are in gender relations, men's violence against women, young people's health and sexual and reproductive rights. Currently involved in research on youths' access to health care services in northern Sweden.

Anne Gotfredsen. Doctoral student at Umeå Unit for Epidemiology and Global Health. The project concerns civically-engaged youth and their influence on social determinants of emotional wellbeing. Also affiliated to the Umeå Centre for Gender Studies (UCGS).

Per Gustafsson. PhD in child and adolescent psychiatry, Associate Professor in Public Health. Research within social epidemiology and social inequalities in health. Also interested in life course epidemiology and neighborhoods and health. Teaching theory and methods in various courses at the Master of Public Health Programme, and on courses on PhD and basic level.

Jonas Hansson. Fil. Mag. in Education. PhD student at Epidemiology and Global Health at Umeå University. His current research project and doctoral studies is ”Psychosocial job charac-teristics, coping and mental health among Swedish police officers in relation to deportation of unaccompanied children”. Left for another position during 2017.

Ulrika Harju. Research course administrator. Also administrator on the course in Epidemiology and Biostatistics within the biomedicine programme. Reviewer for the unit in the personnel administrative self-service system at Umeå University. Administrates the Minor Field Studies applications.

Jing Helmersson. PhD in Atomic Physics and Laser Spectroscopy & M.S. in Public Health. Research scientist at ”Climate change and global health" at Umeå Centre for Global Health Research. Her current research project is Mathematical Modeling of Dengue, a vector-borne infectious disease, and Dengue/Zika vector invasion of uninfected areas..

Anna-Karin Hurtig. MD, DrPH, DTM&H, MSc. Professor in public health. Head of Epidemiology and Global Health from 2018. Coordinator of the Swedish Research School for Global Health. Theme leader for "Strengthening primary health care- the roles of rights, ethics and economic analyses" within Umeå Center for Global Health Research. Main areas of interest: international health systems and policy research, infectious disease policy, primary health care in low income countries.

Elisabet Höög. MA in work- and organizational psychology. PhD. During 2015-2018 Elisabet works in a collaborative project between Epidemiology and Global Health and FoU Välfärd, Region Västerbotten. The project runs within the frame of Riksbankens Jubilumsfond and their Flexit Programme, aiming at dissemination of research and researchers beyond the university context. The project focuses on local and regional support structures for knowledge management in welfare context.

Anneli Ivarsson. Professor in Epidemiology and Public Health Sciences. International Director of the Medical Faculty. MD with specialist training in Paediatrics and a PhD in Paediatrics. Nationally and internationally known for decades of coeliac disease research. Scientific leader of the Salut Child-Health Intervention Programme in Västerbotten. Principal investigator of the Umeå SIMSAM Lab focusing on multidisciplinary register-based research connecting childhood with life-long health and welfare. Attached to the Research and Developmental Unit of the Västerbotten County Council.

Urban Janlert. MD, Senior Professor of Public Health, specialist in Social Medicine. Research in social epidemiology (unemployment, social deprivation). Also attached to the Public Health Unit at the County Council.

Angelica Johansson. Programme Administrator of the Public Health Programme. Secretary for the Programme council for master programmes in public health (PRPH) and responsible for the administration in Selma. Also working with student support and course administration.

Helene Johansson. Physiotherapist, PhD in Public Health. Teaching subjects: health, health promotion, health promoting health services, qualitative methodology. Supervision of students at the master´s and PhD level. Research areas: health promotion, prevention, implementation, collaboration/ integration

Karin Johansson. Administrative co-ordinator. Responsible for departmental and staff administration.

Klara Johansson. PhD, researcher in epidemiology and public health. Research interests: 1)socioeconomic determinants of adolescents' mental health, safety & injury, and sexual health; and 2)interrelations between gender equality versus physical and mental health. Currently working on a project on macroeconomic factors in relation to adolescent mental health internationally.

Frida Jonsson. Doctoral student in Public Health working with the thesis 'A life course approach to social determinants of mental health'. The project has its point of departure in life course and social epidemiology, where the aim is to examine how various social determinants e.g. social capital, class, neighbourhoods, might affect mental health through life course processes of accumulation, sensitive periods, chain of risks and mobility.

Ulrika Järvholm. Department administrator. Working with research education, research administration in various projects, and some web and communication

Therese Kardakis. Doctoral student within the Vinnvård project. Research on implementation of national guidelines. Left for another position during 2017.

John Kinsman. Associate Professor in Global Health. Also serves as Section Editor for Global Health Action, and as Vice Chair of the INDEPTH Network's Social Science Research Working Group. Has worked on each of the last three WHO-declared Public Health Emergencies of International Concern: Polio (preparedness in the EU, and enhancing vaccine uptake in Somalia); Ebola (message development in Sierra Leone); and Zika (message development in Brazil). Lead social scientist on the ABACUS study on antibiotic access and use, with the INDEPTH Network, in three African and three Asian countries.

Evelina Landstedt. Associate Professor. PhD in health sciences, research fellow. Her research is within the field of public health and health sociology and focuses on self-reported mental health problems in young people and what factors and circumstances contribute to such problems. In her work she applies a gender and social class perspective.

Ida Linander. PhD student in Public Health. The thesis concerns experiences of health and healthcare among persons with trans experiences (also called trans persons or transgender persons). Also affiliated with Umeå Centre for Gender Studies (UCGS).

Lars Lindholm. Professor in Health economics. Studies on equity in health economic evaluation and the use of epidemiological data in the distribution of health care resources.

Marie Lindkvist. Director of Studies at the Unit. Associate professor in Epidemiology and Biostatistics, PhD in Statistics and B.Sc in Mathematics. Appointed as Excellent teacher in Umeå University's pedagogical qualification model. Lecturer in biostatistics and statistical consultant. Responsible for statistical considerations and analyses in the Salut child health intervention programme in Västerbotten.

Kristina Lindvall. Post doc, Dietitian, master in Food and Nutrition, PhD in Public Health. Involved in a research project studying attitudes, norms, behaviours, strategies and eating habits important for weight maintenance.

Wolfgang Lohr. Medical data manager, involved in the projects "Dengue Tools" and "VIP-VIZA". IT-support, teaching on data management and databases.

Curt Löfgren. Senior lecturer in Economics. PhD in Public Health, particularly issues on health financing in low and middle income countries, e.g. how to protect households from catastrophic health expenditure.

Göran Lönnberg. Statistician, data scientist, research assistant. Involved in the projects: "Västerbotten Intervention Program" (VIP), "Sweden Stroke Prevention Study" (SSPS).

Paola Mosquera Mendez. Marie-Curie Post doc. Her research focuses on social inequalities in health and health care. She is currently examining the underpinnings of inequalities in cardiovascular health and health care in northern Sweden from a life course perspective. Her upcoming project will be an natural experimental evaluation of the Free Choice in Primary Health Care Reform with respect to population health and health inequalities in Sweden.

Lena Mustonen. Department administrator, web master and staff directory coordinator. Also administrating the publication database (DIVA) and the research database. Research administrator within the Umeå SIMSAM Lab, the EU-supported project ZikaPLAN and the SALUT project.

Anna Myléus. MD, PhD. Resident physician in Family Medicine. Ongoing research in different epidemiological fields both in Sweden and in low- and middle income countries. Lecturer in epidemiology and qualitative research methods. Also affiliated with the Family Medicine unit. Left her position during 2017.

Nawi Ng. Nawi Ng. MD, MPH, Ph.D. Professor of Epidemiology and Global Health. His research interests are in non-communicable diseases, wellbeing and disability among older people in Sweden and in low- and middle income countries. Participate in the VIPVIZA research project and leading a VR research project on cardiovascular disease risk prediction modelling using the VIPVIZA data. Affiliated to the Centre for Demographic and Ageing Research at Umeå University. Chief Editor of Global Health Action open-access journal.

Maria Nilsson. Associate Professor. Research areas: climate change and health, and tobacco prevention and policy. Also attached to the Unit of research, education, development and public health at Västerbotten County Council.

Faustine Nkulu Kalengayi. MD, PhD. Research studies on the challenges and opportunities for HIV/AIDS/TB care and prevention among immigrants from countries in sub-Saharan Africa.

Margareta Norberg. Associate Professor, MD, PhD. Medical coordinator of the Västerbotten Intervention Programme (VIP). Research activities are focused on cardio-vascular diseases and diabetes and mainly based on data from the VIP. Also co-PI for VIPVIZA, Visualization of asymptomatic atherosclerotic disease for optimum cardiovascular prevention. Affiliated to the multidisciplinary research program CEDAR, Umeå University.

Fredrik Norström. Associate Professor in Epidemiology and Biostatistics. Principal investigator for the research project: "Is better public health worth the price? - A health economic evaluation of increased staffing in home care". Research interests are: i) health economic modelling, ii) unemployment and health, iii) quality in scientific publications, iv) development of statistical methodology within epidemiology and public health, and v) celiac disease.

Lennarth Nyström. Associate Professor in epidemiology, Senior consultant. Research on the evaluation of the efficacy and effectiveness of mammography screening in Sweden, effectiveness of treatment of hypertension and efficacy of health coaching to promote healthier lifestyle among older people at moderate risk of cardiovascular disease, diabetes and depression. Other research includes epidemiological studies of hip fractures, clinical audits of obstructed labour and fetal distress and risk factors for type 2 diabetes.

Monica Nyström. Associate Professor. Organizational behavior and management in health service organizations. Also involved in a FORTE program on Co-Care, in VINNOVAs Leadership lab, and in education for managers in healthcare. Works part time at Umeå University with her main employment at Medical Management Centre, Department LIME, at Karolinska Institutet where she is a research group leader for the SOLIID-group.

Solveig Petersen. PhD in Pediatrics, Associate Professor in Epidemiology and Public Health. Ongoing research in the fields of epidemiology and prevention of mental ill-health, recurrent pain and overweight in children in Sweden and internationally. Principal investigator of the Study of Health in school-children from Umeå (the SISU project). Also holds an analyst position at the Public Health Agency of Sweden.

Raman Preet. BDS, MSc DPH, MPH. A dentist with masters in dental public health and public health, working as Scientific Project Manager (coordinator contact) of ZikaPLAN, an EU funded H2020 research and innovation project comprised of 25 organizations from 13 countries. Additionally, responsible for global health course module given to medical students in semester 5. Also lectures

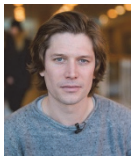
in global public health and healthcare management courses in MPH programme. Research interests are in oral health integration in global health; supporting scientific exchange platforms in developing countries.

Anni-Maria Pulkki-Brännström. Health economist with a special interest in the economic evaluation of complex public health interventions. She also teaches health economics on the MPH programmes. Current collaborations with Uppsala University (Salut Programme evaluation), the National University of Rwanda (SIDA-collaboration), and Karolinska Institute (Topas study).

Mikkel Quam completed his Ph.D. in Epidemiology and Public Health in 2016 and continues to conduct research and teach within the Unit. As an epidemiologist, he currently focuses on modeling spatial temporal infectious disease dynamics, particularly novel emergence of Zika and dengue based on environmentally sensitive human, vector, and pathogen interactions related to travel, behavior, settlement, and ecological niches.

Susanne Ragnarsson. PhD student in Epidemiology and global health. Involved in the Study of Health in schoolchildren from Umeå (the SISU project). My PhD Studies are about recurrent pain in school-aged children and the relation to academic outcome. Also a part of Post-graduate School for the Educational Sciences.

Karl-Erik Renhorn. Research coordinator. Provides information, advice and support in relation to external funding to the researchers at Umeå Centre for Global Health Research, and researchers at the Dept of Public Health and Clinical Medicine. Also assists researchers in the management of research projects. Teaches and is responsible for the postgraduate course "How to write grant applications".



Joacim Rocklöv. Professor within Epidemiology and Global Health. He has a B.Sc. Mathematics, a M.Sc. in Statistics, and a PhD in Environmental Medicine. He has a specific interesting in infectious disease epidemiology and modelling. Dr. Rocklöv is the scientific leader for a research area within the Umeå Centre for Global Health Research researching the relationship between climate variability and global health. He is active in several international consortia.

Klas-Göran Sahlén. R.N, PhD. Deputy head of the unit. Studies in the area of aging, prevention and health economics. Lecturer in two subjects; health economics, and qualitative methods. Also senior lecturer at the Department of Nursing.

Miguel San Sebastián. Professor and Medical Doctor with a MSc degree in control of infectious diseases and a Ph.D. degree in environmental epidemiology. He practiced public health during 12 years among indigenous communities of the Amazon basin of Ecuador. Currently working as Professor teaching different courses at Master and PhD level. His current research is focused on strengthening health systems in low income countries and social inequalities in health in the Swedish context.

Eva Selin. Study administrator for courses given during the 1st year of the Public Health Programme.

Julia Schröders. (M.A. & M.Med.Sc.) is a social scientist with training in medical anthropology as well as global public health and epidemiology. Currently a PhD student she is exploring the role of social networks among older adults suffering from chronic diseases and functional disability in Indonesia. She held the position of Managing Editor for Global Health Action until March, 2017.

Barbara Schumann. Associate Professor; PhD in epidemiology. Research focus on weather and climate change impacts on human health. Ongoing studies on weather-related mortality in northern Sweden during the demographic transition, using historical population and weather records. Other interests are related to weather and health in high-, middle- and low-income countries, to climate-sensitive infectious diseases in Scandinavia, communities' vulnerabilities and adaptation to climate change in low- and middle-income countries.

Bore Sköld. Project assistant in Household Preferences for Reducing Greenhouse Gas Emissions in Four European High Income Countries – HOPE. Mainly working with data management and statistics. Bore left this position during 2017

Anna Stenling. MSc. Doctoral student evaluating the Västerbotten Intervention Programme from a health economic perspective.

Hans Stenlund. Senior professor in biostatistics. Statistical consultant in several epidemiological and medical research projects. Giving courses in biostatistics on various levels.

Linda Sundberg. PhD. Her research focuses on factors influencing knowledge dissemination and uptake for improved health services. By exploring policy formulation processes, implementation strategies and their outcome, the research aims to empirically verify determinants to quality improvements and research uptake in routine health care.

Johanna Sundqvist. Social worker, doctoral student. Studies social workers' and police officers' mental health in work with unaccompanied asylum-seeking refugee children's forced repatriation. Johanna left this position during 2017.

Hajime Takeuchi. Guest professor. Paediatrician and child neurologist. Guest Professor at Epidemiology and Global Health, otherwise working as a Professor at Bukkyo University, Kyoto, Japan.

Nadja Trygg. PhD student and project assistant in the project Complex inequalities in mental health.

Stig Wall. Professor Emeritus of epidemiology and health care research. Epidemiologist with a social science background. Research on epidemiology and international health, environ-mental and social epidemiology, prevention and medical technology assessment.

Susanne Walther. Working with budget and departmental administration. Also involved in the project on celiac disease.

Masoud Vaezghasemi. MSc-Public Health and MSc-Nutrition, and doctoral student. Also affiliated with the Umeå Centre for Gender Studies. Research interests within social determinants of malnutrition, social capital, health inequalities, and nutrition transition in Indonesia. Also collaborating with Prof. SV Subramanian from Harvard University, studying inter-individual inequalities and variation in BMI over time and place utilizing multilevel statistical analysis

Anna-Karin Waenerlund. Ph.D. in Public Health, she is currently involved in research on youth-friendly health care services in Sweden. She is also involved in a project focusing on social inequalities in health in the Swedish context.

Lars Weinehall. Senior Professor in Epidemiology and Family Medicine. Was 1985-2007 the coordinator of development and countrywide implementation of one of the world's largest ongoing population-based intervention program for the prevention of cardiovascular diseases (CVD) and diabetes, the Västerbotten Intervention Program (VIP). Research on analysis of the role of primary care in population-oriented prevention and supervised a number of PhD students both from Sweden, the US, Indonesia and Vietnam.

Anna Westerlund. MCs in psychology, PhD student and research assistant. Anna has a background in the field of organizational development and change and currently her research is focused on how to manage implementation of complex interventions to develop work practices in health care.

Annelies Wilder-Smith. Infectious disease physician and public health practitioner with a special interest in emerging infectious diseases and vaccine-preventable diseases. The past 15 years have been devoted to dengue research, in particular dengue vaccine development and dengue in international travelers. Prof Wilder-Smith is President of the International Society of Travel Medicine, Editorial Consultant to the Lancet, Senior Advisor to the Dengue Vaccine Initiative, and serves on various WHO committees. She is the Principal investigator of the EU funded project, "Zika Preparedness Latin American Network – ZikaPLAN".

Birgitta Åström. Administrative coordinator for the Swedish Research School for Global Health and the postgraduate education as well as the PhD-student support. Retired during 2017.

Affiliated staff

Yulia Blomstedt. PhD. Head of Centre of Registry Northern Sweden. Research on health interventions, self-reported health, health care management.

Maria Emmelin. Professor of Global Health at the department of Social Medicine and Global Health, Lund University. She has a special interest in public health evaluation and the social determinants of health. Her research has focussed on self-rated health and the social aspects of cardiovascular disease prevention in northern Sweden. She has worked with the HIV/AIDS epidemic in Tanzania, smoking cessation in South Africa, reproductive health in Ethiopia, and violence against women (and children) in Ethiopia, Tanzania and Indonesia.

Gabriel Granåsen. Statistician at the Registry Centre Northern Sweden.

Anne Hammarström. MD, DrPH, Professor in public health. PI for Northern Swedish Cohort and for several research programmes. Director of Umeå Centre for Gender Studies in Medicine.

Alison Hernandez. PhD. Doctoral studies on Health Service Delivery in Rural Guatemala: Analysis of Strategies to Support the Performance of Auxiliary Nurses. Finalised her PhD during 2015.

Yien Ling Hii. MPH, PhD in Epidemiology and Public Health. Research interests: Forecasting model and early warning system of climate-sensitive infectious diseases including dengue fever and hand-foot-and-mouth disease. Left her position during 2015.

Henrik Holmberg. Statistician at the Registry Centre Northern Sweden.

Kathleen Kahn. PhD, MPH, MBBCh. Collaborative work in child and adolescent health, community-based cause of death assessment, and adult health and aging through INDEPTH multisite work. Active in forging research and training links with Wits University, South Africa. Also based in the MRC/Wits Rural Public Health and Health Transitions Research Unit (Agincourt), School of Public Health, University of the Witwatersrand, South Africa.

Per Liv. Statistician at the Registry Centre Northern Sweden.

Jack Lysholm. After several years as Director of Research and Development at Västerbotten County Council and adjunct professor, he is now professor emiritus. Research on infrastructure for registry research in health care. Research also on Injury Epidemiology and to the major part based on the Umea Injury Database.

Anna Månsdotter. Associate professor in public health. Working at the Public Health Agency of Sweden (governmental assignments and scientific support). Research and teaching on public health, economics/ethics, and gender equality

Annika Nordström. PhD. Senior lecturer in public health. Head of Welfare Research and Development Unit, Region Västerbotten. Studies on hazardous alcohol use related to health, social factors and gender.

Anna Rosén. MD, PhD. Resident physician in Clinical genetics. Studies on mass screening for celiac disease utilizing a combination of qualitative, epidemiological and genetic research methods. Also attached to the department of Medical and Clinical genetics.

Jennifer Stewart Williams. PhD in epidemiology with a background in economics and health policy. Research interests: understanding demographic and epidemiological transitions and health inequalities in low- and middle-income countries and facilitating the translation of research into policy and practice. She is active in the MPH programme and is Managing Editor for Global Health Action.

Sun Sun. Health economist. Involved in teaching and supervision at the unit. She is working at Synergus and is also affiliated to the Health outcomes and Economic Evaluation Research Group at Karolinska Institutet.

Stephen Tollman. (MA MPH MMed PhD), Directs the Medical Research Council/Wits University Rural Public Health and Health Transitions Research Unit (Agincourt) in rural northeast South Africa. In the context of a rapidly transitioning society, his research is on burden of chronic diseases, strengthening of chronic primary health care systems, and population dynamics. Founding Board chair of the INDEPTH Network (2002-2006). Leads Network efforts in Adult Health and Aging.

Susanne Waldau Wiechel. PhD, knowledge management strategist at Västerbottens County Council. Working at local, regional and national levels to build systems for knowledge management. Goals are to create equal care of high quality, based on explicit priority setting and

legitimate management processes, and to raise systems knowledge among participants. Among relevant knowledge fields (besides medicine) are public health, epidemiology, sociology of medicine, health economics and medical ethics.

Magnus Zingmark. Guest researcher at the Unit. Head of Research and Development on Active and Healthy Ageing at Municipality of Östersund. His works is with effects and cost-effectiveness of physiotherapeuthic inverventions among elderly.

Ann Öhman. Professor in gender studies and in public health, with special reference to health profession research, violence against women and constructions of masculinity. Theme manager of the research theme Gender and Global Health within Umeå Centre for Global Health Research. She is Professor and Scientific Leader at Umeå Centre for Gender Studies, Umeå University.

Education

Students and staff, May 2017
Photo: Ulrika Bergfors

Umeå International School of Public Health

Public Health education and training has been integral to the success of our international research collaborations. Many ad hoc training courses, workshops and short courses in epidemiological methods have provided a springboard for international projects. These activities have helped to build what is now a well-regarded highly-valued international school within the University. Maintaining a strong research focus in our teaching has been critical for success in education, training and international partnerships.

The first courses in public health in Umeå were given in 1986. Five years later, in 1991, a one-year Master of Public Health (MPH) programme was introduced. The structure remained similar, albeit with some minor revisions, until 2007 when there was a major change from a one- to a two-year programme, with a broader focus on epidemiology, health systems and the social determinants of health.

As a result of a decision taken by the Swedish Parliament, since the autumn of 2011, students from outside the European Economic Area (EEA) and Switzerland have been required to pay tuition fees for higher education in Sweden. This led to a drop in enrolments from non-European students in 2011/12. Nevertheless we remained committed to promoting the one- and two-year MPH programmes and further developing and diversifying their educational content.

In the autumn of 2015, in collaboration with Umeå School of Business and Economics, we introduced an MPH with a specialization in health economics. This recognises the breadth of health economics across a range of topics that include making evidence-based decisions about the best use of resources to maximise health gains and ways of analysing systems, organizational change and health financing.

To ensure flexibility, the first year of the MPH is identical for all students regardless of whether they are undertaking a one- or two-year program, with or without the health economics specialty. This first year includes courses on: global health condi-

tions; health systems analysis; the connections between social conditions and health, and methods used in developing and implementing public health policies. The programmes provide public health practitioners and researchers with the skills required to understand, and ultimately improve and maintain, the health status of the population.

During the 2017/18 academic year we will host an intake of 44 new students comprising 11 one-year students, 23 two-year students enrolled in the regular programme and 10 students enrolled in the new health economics specialisation. In addition there are 34 second-year students, 18 of who are in the regular two-year program and 16 of who are in the health economics programme. This year our incoming students originated from Sweden, Europe, Asia, Africa and USA. The multi-cultural composition of student enrolments makes our programmes unique. Students frequently report that this as a major strength of the education the Unit offers.

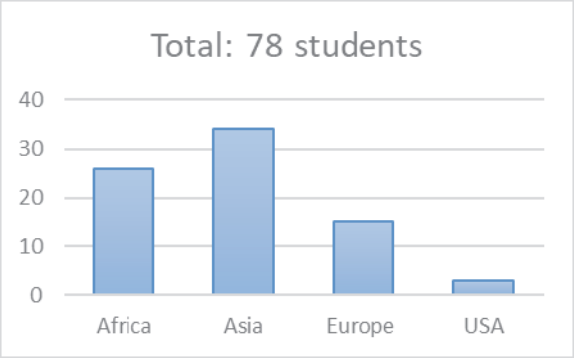


Figure 8. Masters students 2017/18

Since the introduction of tuition fees, scholarships from Swedish Institute have been instrumental in the recruitment of students outside EU. This year, 30 of our students were fortunate enough to receive scholarships from the Swedish Institute. Some other scholarships covering tuition fees have also been introduced and this has provided further opportunities for students to enrol in our programmes. We are grateful to the Erling-Persson Family Foundation, for their many years of support in providing scholarships to students from outside the EEA.

Master programme courses 2017/18

First year
Global public health, 10 credits
Biostatistics 5 credits
Epidemiology, 10 credits
Qualitative methods 5 credits
Health systems: Organization and financing, 5 credits
Health economic evaluation methods, 5 credits
Social pathways in global health and health promotion, 5 credits
Master thesis, 15 credits

Second year
Evidence based public health, 4 credits
Equity and health, 3.5 credits
Qualitative data analysis, 7.5 credits
Advanced biostatistics and epidemiology, 7.5 credits
Advanced topics in health economics evaluation methods, 7.5 credits **or**
Social epidemiology – theory and methods, 7.5 credits
Health, environment and sustainability, 7.5 credits **or**
Planning and management in health care, 7.5 credits
Evaluation in public health, 7.5 credits
Master thesis, 15 credits

Second year with specialization in Health Economics
Tools and methods for economists, 7.5 ECTS **or**
Evidence Based Public Health, 4 ECTS **and** Equity and health, 3.5 ECTS
Health economic theory, 7.5 ECTS
Social and environmental entrepreneurship, 7.5 ECTS **or**
Project management, 7.5 ECTS **or**
Environmental resource economics, 7.5 ECTS **or**
Advanced biostatistics and epidemiology, 7.5 ECTS
Advanced Topics in Health Economic Evaluation Methods, 7.5 ECTS
Health, environment and sustainability, 7.5 ECTS **or**
Planning and management in health care, 7.5 ECTS
Evaluation in public health, 7.5 ECTS
Master thesis, 15 ECTS

Korpen Veteranerna Västerbotten have also made a generous donation that allows us to reward MPH students for high quality theses.

Other teaching activities

All courses within the MPH can be taken as single subjects. Priority is given to those enrolled in the MPH but a number of non-programme students are also accepted. This is especially true for courses in research methodology such as *Biostatistics, Epidemiology* and *Qualitative Methods,* and courses concerning health systems, policy, organisation and financing, e.g. *Health Systems: Organizing and Financing* and *Health Economic Evaluation Methods*. In our view it as essential that these subjects are accessible to research students in related disciplines.

The Unit has been responsible for teaching community medicine (since 2002) and global health (since 2005) to medical students. The latter course was introduced in response to student requests. Almost all public health lectures to medical students are given during semester 5. The teaching is done in collaboration with the Unit of Occupational and Environmental Medicine and the Department of Law.

Staff at the Unit also teach into several other programmes. Teaching is carried out at all academic levels - from basic to doctoral. During the first semester of the 'Biomedical Programme' (180 credits), our Unit is responsible for teaching a 7.5-credit course in Epidemiology and Biostatistics. Members of the Unit are teaching (from basic to masters' level) into the Departments of Nursing, Community Medicine and Rehabilitation, Ontology and Food and Nutrition. Teaching is also undertaken at Umeå School of Education and at the Centre for Teaching and Learning (UPL) as part of the central course for supervisors at Umeå University.

CONTACT: *Marie Lindkvist*

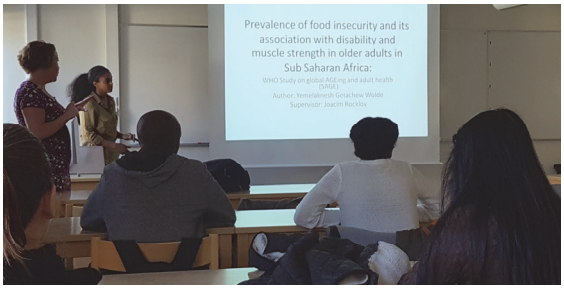
Educational Strategic Group

In the beginning of 2017, an educational strategic group was established, headed by the Director of Studies of the Master of Public Health Programmes (MPH). Others are the chair of the program council, the director of research education and four teacher representatives. The purpose of the educational strategic group is to work with core values of the programs, discuss development of the programs over time, and be a support for the director of studies in educational development work. An important task is also to discuss the content of different courses in association with course coordinators, to compare the courses to the national goals, to review progression and avoid overlap. In 2017, the main priorities for the educational strategic group were to define Core values and Pedagogical model for our master programmes. During 2018, the key priority will be to define Core competences for our MPH.

Figure 9. Home country of Master of Public Health students 1987-2017

MPH students visiting the Unit office

Students and staff football game teams



Graduation ceremony, May 2017
Photo: Mattias Pettersson

MPH seminars, May 2017

Klas-Göran Sahlén with a gift from the MPH students

Vincent Dei, Cecilia Wagenius and Muchandifunga Trust Muchadeyi received scholarships for high quality theses

Research

Umeå Centre for Global Health Research

Working under the umbrella of the Umeå Centre for Global Health Research, hosted within the Unit of Epidemiology and Global Health (EpiGH), our research falls into three broad profiles: Emerging Global Health Challenges; Health Systems and Policy; and Northern Sweden Health and Welfare. These three profiles are overlapping and develop in synergy (Figure 10).

We embrace a multi-disciplinary approach to the research questions we address, where possible using a combination of complementary qualitative and quantitative approaches, and we work in collaboration with colleagues locally as well as from all continents of the globe.

Global Health Action, an international peer-reviewed journal, is also hosted by EpiGH and has a strong in-house editorial team. The interesting almost 10-year journey is described further down in this chapter.

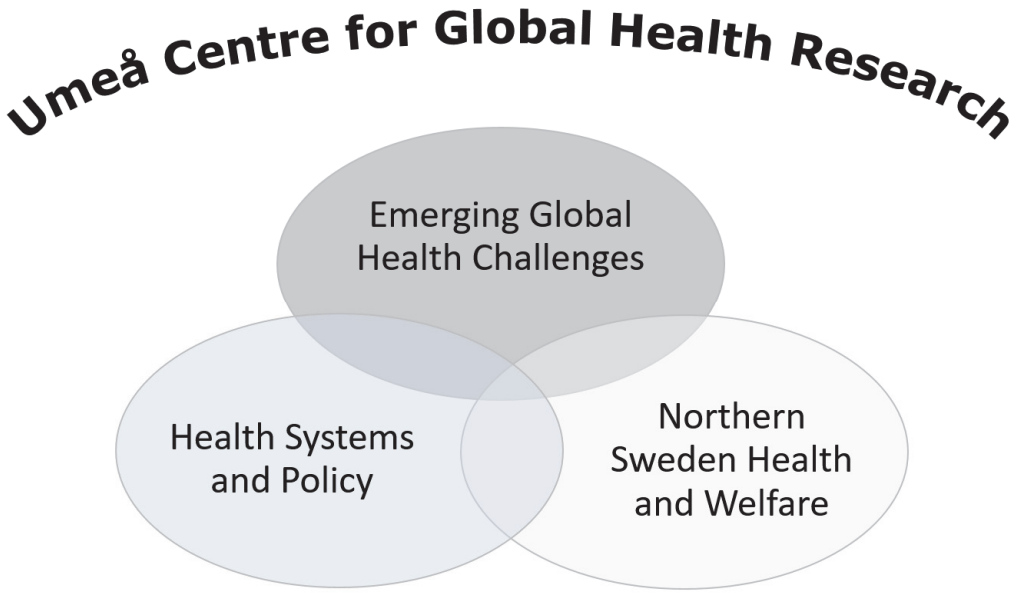


Figure 10. Three broad research profiles within Umeå Centre for Global Health Research

Ongoing research projects – the three profiles

Emerging Global Health Challenges

The world is becoming increasingly globalized and we are faced with challenges in health which do not respect national borders. Determinants such as migration, climate change and increasing ageing populations are emerging as important for health and well-being world-wide. We need to interpret new patterns and follow the dynamic interactions developing over time and space. We also need to be prepared and coordinated in order to face challenges ranging, for example from the re-emergence of infectious diseases to complex inequalities in mental health.

EMERGING GLOBAL HEALTH CHALLENGES		
PROJECT TITLE	**CONTACT PERSON**	**FUNDING AGENCY**
Complex inequalities in mental health	Per Gustafsson	Public Health Agency of Sweden
Sexual and reproductive health and rights among migrants	Anna-Karin Hurtig	Public Health Agency of Sweden
Many children report psychosomatic disorders but how dangerous is it? A longitudinal study on potential negative effects on school achievements	Solveig Petersen	Public Health Agency of Sweden
Zika Preparedness Latin American Network	Annelies Wilder-Smith	European Commission
Inequalities in environmental health	Barbara Schumann	Public Health Agency of Sweden
Population dynamics and socioeconomic well-being	Joacim Rocklöv	SIDA
Promoting local research competence, evidence and response strategies to health risks from climate change in Vietnam and Indonesia	Joacim Rocklöv	Swedish Research Council: Swedish Research Links
Antibiotic Access and Use (ABACUS)	John Kinsman	Wellcome Trust
Public Health Emergency Preparedness in the EU	John Kinsman	European Centre for Disease Prevention and Control (ECDC)
Adolescent mental health in relation to macroeconomic factors: protective and risk factors	Klara Johansson	Swedish Research Council for Health, Working Life and welfare (FORTE)
Household preferences for reducing greenhouse gas emission in four European high income countries – HOPE	Maria Nilsson	The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (FORMAS)
Climate change and health in Sweden	Maria Nilsson	Public Health Agency of Sweden

Health Systems and Policy

It is essential to understand and improve how societies organize themselves in achieving collective health goals, and how different actors interact in policy and implementation processes to contribute to policy outcomes. Health systems worldwide are struggling to respond to the needs of populations and provide universal health coverage. Inter-disciplinary research conducted in dialogue with decision makers and service providers can contribute to the strengthening of systems and implementation of interventions.

HEALTH SYSTEMS AND POLICY		
PROJECT TITLE	**CONTACT PERSON**	**FUNDING AGENCY**
Health policy and systems research. Strengthening community-based health systems	Anna-Karin Hurtig	STINT
Strengthening health system research capacity for enhancing innovations and sustainable socio-economic development	Anna-Karin Hurtig	SIDA
Community based interventions for strengthening adolescent sexual reproductive health and rights in Zambia	Anna-Karin Hurtig	Swedish Research Council
Is better public health worth the price? - A health economic evaluation of increased staffing in home care	Fredrik Norström	Swedish Research Council for Health, Working Life and welfare (FORTE)
Mass screening for coeliac disease – is it worth its price?	Fredrik Norström	Svenska Celiakiförbundet
Health care access for rural youth on equal terms?	Isabel Goicolea	Swedish Research Council for Health, Working Life and welfare (FORTE)
How, why and under what circumstances are Swedish Youth Clinics youth friendly? A realist evaluation	Isabel Goicolea	Swedish Research Council for Health, Working Life and welfare (FORTE)
From policy to practice: Which factors explain the low priority given to disease prevention in primary care in Sweden and the US?	Lars Weinehall	Swedish Research Council for Health, Working Life and welfare (FORTE)
Epidemiology and control of endemic diseases in Bolivia	Miguel San Sebastián	SIDA
Applying systems thinking tools to strengthen health system accountability to marginalized populations in Guatemala	Miguel San Sebastián	Swedish Research Council
Using national quality registries to improve care of older people	Monica Nyström	Swedish Research Council for Health, Working Life and welfare (FORTE)
Are health inequities rooted in the past?	Paola Mosquera Mendez	COFAS, Swedish Research Council for Health, Working Life and welfare (FORTE)
Impact of the free patient choice reform on population health and health inequalities in Sweden	Paola Mosquera Mendez	Swedish Research Council for Health, Working Life and welfare (FORTE)
Fostering Sweden-Malaysia research partnership	Yien Ling Hii	Swedish Research Council

Northern Sweden Health and Welfare

Our home and point of departure is the Västerbotten County and Northern Sweden. This is a region which is sparsely populated and faces challenges such as the recruitment of health personnel and service provision. Close collaboration with actors within the County Council and other institutions are important for us. Over years, many interventions to prevent ill-health over the life-span been collaboratively developed and implemented. Register data is a rich source of information and in this regard, Sweden is a gold mine.

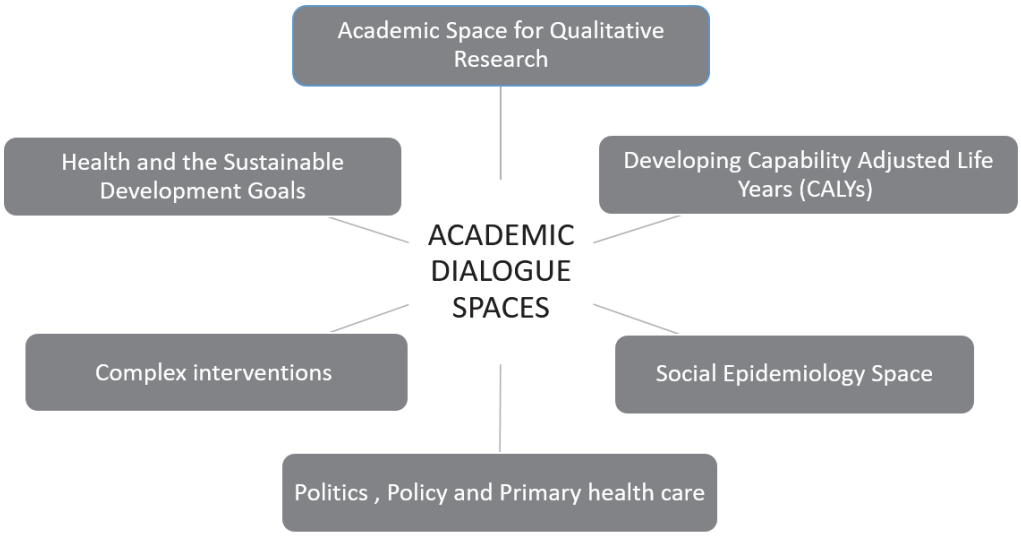
NORTHERN SWEDEN HEALTH AND WELFARE		
PROJECT TITLE	**CONTACT PERSON**	**FUNDING AGENCY**
Microdata Research on Childhood for Lifelong Health and Welfare. The Umeå SIMSAM Lab	Anneli Ivarsson	Swedish Research Council The Swedish Foundation for Humanities and Social Sciences (RJ)
The Salut Child-Health Intervention Programme	Anneli Ivarsson	Västerbotten County Council
Mental health among 3-year-olds – A population-based study in Västerbotten	Anneli Ivarsson	Public Health Agency of Sweden
Can a strengthened health promotion strategy for children and parents contribute to population health?	Anneli Ivarsson	Swedish Research Council for Health, Working Life and welfare (FORTE)
New decision method for municipalities to reduce social exclusion	Anneli Ivarsson	Skandia – idéer för livet
The National Celiac Disease Register in Children	Anneli Ivarsson	The national pediatric working group for celiac disease
The role of regional collaboration and support structures for knowledge governance within social services	Elisabet Höög	Swedish Research Council for Health, Working Life and welfare (FORTE)
Factors contributing to beneficial development of social emotional ability in early childhood	Eva Eurenius	Västerbotten County Council
The Västerbotten Intervention Program	Lars Weinehall	Västerbotten County Council
Visualization of asymptomatic atherosclerotic disease for optimum cardiovascular prevention. A population based RCT within the VIP – VIPVIZA	Margareta Norberg	VLL, Swedish Research Council, Svenska Läkaresällskapet, Visare Norr, Stroke Riksförbundet, Norrländska hjärtfonden, m. fl.
Applying an equity lens to cardiovascular disease prevention in northern Sweden	Miguel San Sebastián	Swedish Research Council for Health, Working Life and welfare (FORTE)

Research Strategic Group

A research strategic group, consisting of senior researchers at the Unit, was formed in the beginning of 2017 to discuss short and long term strategic issues. Working groups were established based on priority areas. The purpose of the working groups is to focus on the specific areas and suggest strategic development as well as to implement decisions. In 2017 we had five working groups 1) "Strategic outlook" which has the aim of on keeping an eye on research landscape and grant opportunities. 2) "Grant application support" which focuses on streamlining and strengthening support structures. 3) "PhD and MPH funding" which covers searching for funds for stipends. 4) "Public Website", which works with the development of our webpage and the visibility of research 5) and "Academic Dialogue Spaces" which encourages researchers to establish meeting places for academic discussions. These are presented below.

Academic Dialogue Spaces

There are currently six Academic Dialogue Spaces in our Unit. These are formed around the following themes: 1) Qualitative Research, 2) Developing Capability Adjusted Life Years (CALYs), 3) Social Epidemiology 4) Politics, Policy and Primary Health Care, 5) Complex Interventions, and 6) Health and the Sustainable Development Goals (SDGs). Academic Spaces bring together researchers, often with diverse expertise and experience, around a research topic of mutual interest. They are forums for generating discussions, identifying synergies and promoting research development both for individual researchers and for the Unit as a whole. Members of each Space meet periodically. At several times Spaces meet together to discuss research topics from different perspectives. A brief description of each Academic Dialogue Space follows.



Qualitative Research

This Academic Space cultivates dialogue among those with interest in the methodological strengths and challenges of qualitative research, e.g. recruiting, interviewing, coding and analysis, and also theoretical discussions. The group meets on average once a month to discuss texts (our own and others), shared challenges and to plan open seminars. *Coordinators: Ida Linander, Anne Gotfredsen and Isabel Goicolea.*

Developing Capability Adjusted Life Years (CALYs)

This Space builds upon two research projects in which researchers from the Unit have participated. One is about social exclusion, and the costs of preventing exclusion. The second is about capabilities and their potential use in the evaluation of public interventions. These two projects have now joined forces to develop a common research agenda, which stretches from normative philosophy to statistical method. Dialogue on these issues is ongoing. Coordinator: Lars Lindholm.

Social Epidemiology

This Space gathers four times per year to discuss published articles regarding a conceptual and/or methodological issue in the field of Social Epidemiology. Sometimes draft articles or research proposals from the group are discussed. Topics discussed in 2017 included outcome-wide epidemiology, intersectionality and social epidemiology at the cross-roads. *Coordinators: Miguel San Sebastian and Per Gustafsson.*

Politics, Policy and Primary Health Care

This Space focuses on health policy and systems research with a focus on local and community based systems. Methodologies inspired by systems thinking are explored as well as current topics on the politics of health. The group meets once a month to share ideas/ongoing activities and discuss published work. *Coordinators: Lars Lindholm and Anna-Karin Hurtig.*

Complex Interventions

Members of The Unit are undertaking research on evaluating complex interventions across a range of different health settings and this provided a basis for the Complex Interventions Academic Space. Some examples of topics presented and discussed in seminars during 2017 are "What conditions make a youth clinic more accessible for mental health issues?" and experiences from the project "Health coaching to promote healthier lifestyle among older people at moderate risk for cardiovascular diseases, diabetes and depression: a randomized controlled trial in Sweden*". Coordinators: Kristina Lindvall and Linda Sundberg.*

Health and the Sustainable Development Goals

This Space focuses on health, with a holistic and broad perspective considering the natural environment (including environmental health), but also urbanization, migration, and sustainable development in low- middle- and high-income regions. In 2017, topics included: SDG 3 Good Health and Wellbeing – what's in, what is missing? Environmental Health Inequalities in Sweden; Universal Health Coverage in the SDGs, UNICEF Innocenti report, and Child health indicators in the SDG 3 context. *Coordinator: Barbara Schumann.*

Academic Seminars

Seminars at EpiGH during 2017

January	**Annelies Wilder-Smith** ZikaPLAN – What it takes to win an EU grant
	Amaia Maquibar – Midterm seminar Exploring intimate partner violence in the Basque Country: a focus on young people and institutions
February	**Madeleine Thomson** Research on Zika, Malaria and Other Vector-borne Diseases at The International Research Institute for Climate and Society (IRI)
	Maquins Sewe – Dissertation Towards Climate Based Early Warning and Response Systems for Malaria
	Masoud Vaezghasemi – Dissertation Nutrition transition and the double burden of malnutrition in Indonesia. A mixed method approach examining and exploring social and contextual determinants of malnutrition
	Therese Kardakis – Pre-defense Strengthening lifestyle interventions in primary healthcare - the organisational change challenge
	Juan Antonio Cordoba – Dissertation Withstanding austerity: economic crisis and health inequalities in Spain
	Susanne Ragnarsson – Midterm seminar Recurrent pain in school-aged children and the relation to academic performance
March	**Marie Lindkvist -** Associate Professor Lecture Present and future research and education activities
	Phan Minh Trang – Dissertation Weather variation and extreme heat impacts on mental disorders. The case of Hanoi, Vietnam
	Kanyiva Muindy – Pre-defense Household Air Pollution in Nairobi Slums: Causes, Consequences, and Lay Perceptions
April	**Klara Johansson** Test run of TEDx-talk about fact-based world view & global health
	Atakelti Abraha – 50 % seminar Under-5 health in Tigray Region, Ethiopia
	Lars Lindholm, Isabel Goicolea och Anna-Karin Hurtig Academic dialogue spaces
May	**Nadja Trygg -** Lic proposal presentation Complex inequalities in mental health
	Angus Dawson Ethics at the centre of vaccination policy: liberty, solidarity and justice
	Jonas Hansson – Pre-defense Mind the Blues: Swedish Police Officers Mental Health in the Forced Deportations of Unaccompanied Refugee Children
	Robert Jonzon – 50 % seminar Health examinations of asylum seekers within the Swedish health care system
	Regis Hitimana – 50% seminar Cost-effectiveness of antenatal care in Rwanda
June	**Vu Quynh Mai –** Phd plan seminar Health related quality of life
	Anna Brydsten – Kappa-seminarium (in Swedish) Yesterday once more? Unemployment and health inequality across the life course
	Laila Daerga – Pre-defense Health aspects among reindeer herders in Sweden - living in two worlds
	Johanna Sundqvist – Pre-defense Forced repatriation of unaccompanied asylum-seeking refugee children – towards an interagency model
June	**Alireza Khatami** – 50% seminar Development and validation of a disease-specific instrument for evaluation of quality of life in adult Iranian patients with acute old world cutaneous leishmaniasis
	Mohammed Hassan Ali Health research educations' impact on the adherence, utilisation, and knowledge of evidence-based practice

August	**Pernilla Koskela** Health economics in the social service
	Johan Hambraeus – PhD proposal presentation Evaluation of interventional pain management mainly focused on zygapophyseal joint pain
September	**Kanyiva Muindy** – Dissertation Household Air Pollution in Nairobi Slums: Causes, Consequences, and Lay Perceptions
	Irene García Moya The importance of student-teacher relationships for young people's well-being
	Laila Daerga – Dissertation Health aspects among reindeer herders in Sweden - living in two worlds
	Pamela Tinc – 50% seminar Translating evidence-based programs into practice: Exploring barriers and facilitators to research translation in public and occupational health using the consolidated framework for implementation research
	Kateryna Karhina – Pre-defense Social capital, gender and mental well-being: comparative studies between Sweden and Ukraine
	Rakhal Gaitonde – 50% seminar Implementation of community based accountability in India's national rural health mission
	Theme Equity in Health seminar series: Capability Adjusted Life Years (CALYs) – a new measure for health and welfare. Lars Lindholm, Epidemiology and Global Health Unit
	Jonas Hansson – Dissertation Mind the Blues: Swedish police officers mental health in the forced deportations of unaccompanied refugee children
October	**Anna Brydsten** – Dissertation Yesterday once more? Unemployment and health inequality across the life course
	Kamila Al Alawi – 50% seminar Exploring the feasibility of interdisciplinary teams in the management of diabetes at primary health care level in Muscat, Oman
	Theme Equity in Health seminar series: Managing ethically difficult situations in health care – implications for health equity." Catarina Fischer Grönlund, Senior Lecturer, Department of Nursing
	Johanna Sundqvist – Dissertation Forced repatriation of unaccompanied asylum-seeking refugee children – towards an interagency model
	Moses Tetui – Pre-defense Strengthening district health management capacity using a participatory action research approach in Uganda
November	**Jing Helmersson –** Pre-defense Climate and Aedes Mosquitoes: An outlook into the 21st century
	Iratxe Pérez Urdiales – 50% seminar Access to healthcare services for immigrants living in the Basque Country (Spain)
	Chama Mulubwa – PhD-plan presentation Community-based Reproductive and Health System for Adolescents in Zambia: A Realist Evaluation Approach
	Therese Kardakis – Dissertation Strengthening lifestyle interventions in primary health care. The challenge of change and implementation of guidelines in clinical practice.
	Daniel Eid Rodriguez – 50% seminar Leishmaniasis control in Bolivia
December	**Anna Westerlund –** Pre-defense Implementation knowledge in practice: How do launch strategies for health care improvement interventions adhere to theory on implementation?
	Petit Nobel Day
	Kateryna Karhina – Dissertation Social capital and well-being in the transitional setting of Ukraine
	Nitin Gangane – Pre-defense Breast cancer in rural India – Knowledge, attitudes, practices; delays to care and quality of life

Medical Faculty - The "Equity in Health" theme

National and international health policy goals include the reduction of health inequalities and promotion of equal opportunities for good health. In 2013, the theme Equity in Health was started at the Medical Faculty by three departments/ units, including Epidemiology and Global Health, to offer a meeting platform for doctoral students and senior researchers active in the field of equity in health. A seminar series, which runs throughout the year, this year featured four senior researchers from the participating departments and one external speaker. Seminars attract 15-30 participants and offer ample time for discussion.

The PhD and Master's level course, "Equity and Health" (3.5 ECTS), was given for the second time in autumn 2017 with 30 participants. The course has been developed in close collaboration with teachers from all three participating departments. On December 8, the Theme organised the second annual "Petite Nobel Day", a half-day event featuring presentations and posters by 19 PhD candidates. There were approximately 60 participants.

CONTACT: *Anni-Maria Pulkki-Brännström*

February	**Nawi Ng**, Professor, Epidemiology and Global Health Unit Global evidences on health inequalities among older people
March	**Senada Hajdarevic**, Senior Lecturer, Department of Nursing Inequality or inequity in care seeking and awareness of cancer
April	**Anette Liljegren**, PhD/Project Coordinator, Centre for Rural Medicine, Storuman, County Council of Västerbotten Access to health care - even for minorities
September	**Lars Lindholm**, Professor, Epidemiology and Global Health Unit Capability Adjusted Life Years (CALYs) – a new measure for health and welfare
October	**Catarina Fischer Grönlund**, Senior Lecturer, Department of Nursing Managing ethically difficult situations in health care – implications for health equity

Global Health Action - a 10-year journey in fueling a hands-on approach to global health challenges

In summer 2018, Global Health Action will celebrate its 10th anniversary. When we launched Global Health Action in 2008, we had a mission to "contribute to fueling a more concrete, hands-on approach to global health challenges", and to address the global health agenda, with a strong focus on policy and implementation. Our vision is to be a leading journal in the global health field, narrowing health information gaps and contributing to the implementation of policies and actions that lead to improved global health. Global Health Action publishes papers on action and interventions suggesting and demonstrating global health impacts.

Global Health Action has lived up to its ambition to build and strengthen research capacity for young researchers from low- and middle-income countries through our mentorship programme. We offer fair and swift peer-review and high-impact publications.

Having successfully passed its ninth anniversary the Journal is in as good health as ever. The Journal's 2017 impact factor was 1.794. In 2017, we received 362 submissions and published 184 articles. Our rejection rate is around 50%. During 2008–2017, GHA has published 1209 articles, some of which appeared in the 36 special issues. The special issues covered different global health topics, including climate change, epidemiological transition, gender and health, ageing and health, HIV mortality, intimate partner violence and mental health, ASEAN regional integration, non-communicable diseases in Asia, maternal, newborn and child survival.

Who published with Global Health Action?

A total of 15894 citations have originated from papers published in GHA during 2008-2017, with an average of 13 citations per paper and 1600 citations per year. GHA's h-index will be 49 by March 2018 (based on Google Scholar Citation).

Prof. Nawi Ng served as the Chief Editor of Global Health Action. He is supported by Stig Wall (the founding editor), Peter Byass (deputy editor), Jennifer Stewart Williams (managing editor) and Septi Kurnia Lestari (editorial assistant). There are several editors in the editorial team and the international editorial board. Global Health Action is published by Taylor and Francis.

CONTACT: *Nawi Ng*

Publication coverage, Global Health Action, 2008-2017

Research Training

Our PhD program

During 2017, we offered 15 courses at doctoral level. Four of these (Health, Environment and Sustainability, Equity in Health, Methods in Social Epidemiology and Qualitative Data Analysis) are given in combination with courses for second-year MPH students.

Five new doctoral students were registered during 2017 - two from Tanzania as part of the research training partnerships funded by SIDA, two from Sweden and one student from Indonesia who will be funded by CEDAR.

During 2017, a total of 45 research students (22 men and 23 women) were registered and actively engaged with their research activities at the Unit.

Twenty five students were recruited from international research collaborations and twenty were Swedish based research students. Eleven PhD students defended their theses during 2017. In the period 1987–2017, a total of 132 PhD theses and 9 licentiate theses were defended at the Unit.

During 2017 our PhD students organized and held two doctoral days. The first, at Brännland, outside Umeå, had the theme: "Is there a life after the PhD studies?" The theme of the second doctoral day was "Communicating Research". This was held in Umeå together with a curling experience event and dinner.

Phd students and supervisors trying to play curling

In May 2017 we received the welcome news that the Erling Persson Foundation had approved a 11.3 million SEK project to fund PhD students from low- and middle-income countries. The programme is called "Forming new leaders in global health: a scholarship programme" This funding will allow us to support about 10 PhD candidates in coming years. During the autumn of 2017 we announced the scholarship and received 46 applications from 16 different countries.

CONTACT: *Miguel San Sebastián*

Figure 11. Home countries of PhD students, 1987-2017.

Somali-Swedish research training programme

A bilateral research collaboration between Somalia and Sweden, which was originally launched in 1981/82, has since forged effective partnerships between several faculties of the Somali National University and numerous Swedish universities and research institutions. The research partnership, which focused primarily on capacity building, has led to the training of an impressive body of Somali academics and critical research outputs. A major outcome has been the uptake and use of evidence from research in policy formulation in Somalia, particularly in the health sector. However this "golden era" of the Somalia and Sweden partnership was interrupted by conflict and extended civil war in Somalia which began in the early 1990s.

In late 2013, for the first time in two decades, a health conference was held in Mogadishu, Somalia. The conference was co-organized by the Somali-Swedish Researcher's Association (SSRA) and co-sponsored by Forum Syd of Sweden through Sida (Swedish International Development Agency) support. As a result of this initiative, contacts were established between six Somali universities (two each from the south-central zone, Puntland and Somaliland), and five Swedish universities (Umeå, Uppsala, Karolinska, Lund and Dalarna). A joint conference was held in Umeå in 2014 and this was followed up with a workshop in 2015. Both events had active participation from representatives of the above academic institutions and SSRA.

There was broad agreement that it was crucial to continue to develop the partnership and realise the important opportunities that this provided. In particular, in regard to generating much needed evidence through implementation research that will ultimately contribute to effective capacity building and health system strengthening.

Accordingly, a two-year online research training starting with a two-week intensive face-to-face course was organized in October 2016 in Hargeisa, Somaliland. This event brought together 24 Somali participants from the six Somali universities and the three engaged ministries of health. The course focused on teaching the basics of epidemiological and qualitative design, analysis and interpretation. During the course, the trainees were guided on refining methodologies for their study projects to be implemented over a one- year period. A mid-term seminar was organised in October 2017 in Hargeisa, bringing 18 Somali participants and three teachers from Sweden together. A final seminar is planned for June 2018.

CONTACT: *Klas-Göran Sahlén*

Midterm seminars in Hargesia, October 2017

PhD students and projects

Table 2. PhD students registered at the unit 2017.

Name	Background	Country	Thesis subject	Main supervisor
Kamila Al Alawi	MD	Oman	Exploring the feasibility of interdisciplinary teams in the management of diabetes at primary health care level in Muscat, Oman.	Helene Johansson
Anna Brydsten	Sociologist *(dissertation 2017)*	Sweden	Yesterday once more? Unemployment and health inequality across the life course in northern Sweden	Miguel San Sebastian
Juan Cordoba	MD, MPH *(dissertation 2017)*	Spain	Economic crisis and health inequalities in Spain and Andalusia	Per Gustafsson
Laila Daerga	Nurse *(dissertation 2017)*	Sweden	Hälsoaspekter inom renskötseln – att leva i två världar.	Klas-Göran Sahlén
Atakelti Derbew	MSc Public Health	Ethiopia	Under 5-year morbidity and mortality in Tigray Region, Ethiopia: an equity perspective.	Peter Byass
Daniel Eid Rodriguez	MD	Bolivia	Public health strategies for the control of Leishmaniasis in Bolivia.	Miguel San Sebastian
Rakhal Gaitonde	MD	India	Policy formulation and implementation of community accountability & governance mechanisms in the National Rural Health Mission in Tamilnadu, India	Anna-Karin Hurtig
Nitin Gangane	MD	India	Breast cancer scenario in India: Knowledge, attitude, practices, delay in presentation and management, post treatment quality of life and self-coping	Miguel San Sebastian
Hendrew Gekawaky	Nurse	DR Congo	Masculinity and HIV prevention in DR Congo	Kerstin Edin
Tsigemariam Teklu Gebereslassie	BSc Public Health	Ethiopia	Epidemiology of Visceral Leishmaniasis and epidemiological interaction with concomitant infections in north Ethiopia.	Peter Byass
Anne Gotfredsen	MSc Global Health	Sweden	Samhällsaktiva ungdomars kollektiva förmåga att utöva inflytande över sociala bestämningsfaktorer för emotionellt välbefinnande.	Anna-Britt Coe
Johan Hambraeus	MD	Sweden	Evaluation of intervention al pain management mainly focused on zygapophysical joint pain	Lars Lindholm
Jonas Hansson	Police, MA behavioural sciences *(dissertation 2017)*	Sweden	Psychosocial job characteristics, coping and mental health among Swedish police officers in relation to deportation work of unaccompanied children	Mehdi Ghazinour
Jing Helmersson	PhD Atomic Physics & Laser Spectr., MPH	Sweden	The development of a dynamic epidemiological weather driven model.	Joacim Rocklöv
Regis Hitimana	MSc Epidemiology	Rwanda	Cost-effectiveness of maternal health interventions in Rwanda.	Anni-Maria Pulkki Brännström
Junia Joffer	BSc Social Science, MPH	Sweden	Self-rated health in adolescence – Experiences of and predictors for good health	Lars Jerdén
Frida Jonsson	Public Health	Sweden	A life course approach to social determinants of mental Health	Per Gustafsson

Name	Background	Country	Thesis subject	Main supervisor
Robert Jonzon	Nurse, MPH	Sweden	Health examinations of asylum seekers within the Swedish health care system	Anna-Karin Hurtig
Kateryna Karhina	MPH *(dissertation 2017)*	Ukraine	The role of social capital and gender for mental health. Comparative studies between Sweden and Ukraine	Malin Eriksson
Therese Kardakis	MSc Business & Economics, MPH *(dissertation 2017)*	Sweden	Strengthening health promotion in health care – the organizational change challenge	Helene Johansson
Alireza Khatami	MD	Iran	Development and validation of a disease-specific instrument for evaluation of quality of life in adult Iranian patients with acute old world cutaneous leishmaniasis	Berndt Stenberg
Prasad Liyanage	BSc Medicine and bachelor of surgery	Sri Lanka	Implementation of Early warning decisions for control and prevention of dengue in Kalutara (Sri Lanka)	Joacim Rocklöv
Septi Kurnia Listari	BA Nutrition	Indonesia	The role of social relationship on health ageing among European population	Nawi Ng
Utami Puji Lestari	Nurse, MPH	Indonesia	Risk factor of type 2 diabetes and their trends in Purworejo district, Indonesia	Nawi Ng
Ida Linander	MD	Sweden	How are sex, gender, mental health interwoven? A gender theoretical approach	Lisa Harrysson
Anna Lundgren	MD	Sweden	Visualisering av asymptomatisk arterosklerotisk sjukdom inom VIPVIZA projektet – Aspekter av nya metoder för optimal primärprevention av kardiovaskulär sjukdom	Margareta Nordberg
Amaia Maquibar Landa	Nurse, MSc Public health	Spain	Exploring intimate partner violence in the Basque country: a focus on young people and institutions	Isabel Goicolea
Kanyiva Muindi	MSc in Epidemiology and biostatistics *(dissertation 2017)*	Kenya	Indoor air pollution and adverse pregnancy outcomes in Kenya	Nawi Ng
Per Nordin	Statistician	Sweden	Kontaktgrad och vårdkonsumtion, en alternativ ansats för att belysa behov av sjukvård	Ingela Krantz
Trang Phan Minh	MD, MPH *(dissertation 2017)*	Vietnam	Weather and weather extremes in association to mental health among adults in Vietnam	Maria Nilsson
Susanne Ragnarsson	Nurse	Sweden	Recent pain in school-aged children and the relation to academic performance – an epidemiologic study	Solveig Petersen
Aditya Ramadona	MSc Environmental science	Indonesia	Developing and validating a dynamic model of dengue transmission with application to early warning and climate change projections	Joacim Rocklöv
Julia Schröders	MPH	Sweden	Chronic disease and disability in a transitional lower middle-income country: Exploring the causal role of social networks in Indonesia	Nawi Ng

Name	Background	Country	Thesis subject	Main supervisor
Melissa Scribani	BS in Biology, MPH	US	Consequences of obesity and determinants of weight maintenance: a study of adult populations in rural New York State and Västerbotten County, moving towards an intervention to stem the tide of the obesity epidemic	Margareta Nordberg
Maquines Sewe	MSc Medical Statistics *(dissertation 2017)*	Kenya	Developing and evaluating M-health weather based malaria early warning system to reduce under five mortality in KEMRI/CDC HDSS, Kenya	Joacim Rocklöv
Natanael Sirili	MSc Health System	Tanzania	Training and deployment of Human resources for health in Tanzania	Anna-Karin Hurtig
Anna Stenling	Civ engineer, BA economics	Sweden	Hälsoekonomisk utvärdering av hjärt-kärlförebyggande befolkningsintervention – Västerbottens hälsoundersökningar	Fredrik Norström
Sulistyawati	MPH	Indonesia	Mapping human health vulnerability and response to climate change in Yogyakarta, Indonesia	Åsa Holmner
Johanna Sundqvist	Social worker *(dissertation 2017)*	Sweden	Social workers and police officers' mental health in relation to the repatriation work of unaccompanied asylum-seeking refugee children. A comparative study.	Anna-Karin Hurtig
Moses Tetui	Sociologist, MPH	Uganda	Participatory approaches to program design and implementation: lessons from a maternal health program in Eastern Uganda.	Anna-Britt Coe
Pamela Tinc	MPH	US	Translating evidence-based programs into practice: Exploring barriers and facilitators to research translation in public health using the consolidated framework for implementation research.	Kristina Lindvall
Nadja Trygg	Health sciences, MPH	Sweden	Complex inequalities in mental health	Anna Månsdotter
Masoud Vaezghasemi	MSc Public health and epidemiology *(dissertation 2017)*	Sweden	The emergence of dual burden of malnutrition in Indonesia: The role of gender and social capital.	Nawi Ng
Maj Lis Voss	Economist	Sweden	Assessing pre-adolescent well-being in low income and high income countries	Lars Lindholm
Anna Westerlund	MA psychology, BA Sociology	Sweden	Handling important conditions for change during initial implementation of interventions to develop work practices in healthcare.	Monica Nyström

Dissertation events and thesis abstracts

MAQUINS ODHIAMBO SEWE

MASOUD VAEZGHASEMI

JUAN ANTONIO CÓRDOBA DOÑA

PHAN MINH TRANG

KANYIVA MUINDI

LAILA DAERGA

JONAS HANSSON

ANNA BRYDSTEN

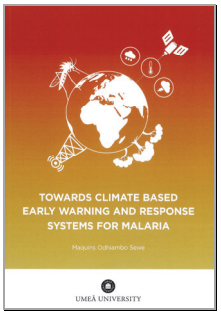
JOHANNA SUNDQVIST

THERESE KARDAKIS

KATERYNA KARHINA

MAQUINS ODHIAMBO SEWE

Towards climate based early warning and response systems for malaria



Thesis defended: 10 February, 2017
Supervisors: Joacim Rocklöv, Clas Ahlm, Yesim Tozan
Opponent: Professor Madeleine Thomson, International Research Institute for Climate and Society, Columbia University, New York, USA

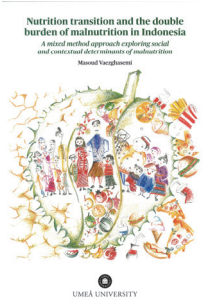
Background: Great strides have been made in combating malaria, however, the indicators in sub Saharan Africa still do not show promise for elimination in the near future as malaria infections still result in high morbidity and mortality among children. The abundance of the malaria-transmitting mosquito vectors in these regions are driven by climate suitability. In order to achieve malaria elimination by 2030, strengthening of surveillance systems have been advocated. Based on malaria surveillance and climate monitoring, forecasting models may be developed for early warnings. Therefore, in this thesis, we strived to illustrate the use malaria surveillance and climate data for policy and decision making by assessing the association between weather variability (from ground and remote sensing sources) and malaria mortality, and by building malaria admission forecasting models. We further propose an economic framework for integrating forecasts into operational surveillance system for evidence based decisionmaking and resource allocation.

Methods: The studies were based in Asembo, Gem and Karemo areas of the KEMRI/CDC Health and Demographic Surveillance System in Western Kenya. Lagged association of rainfall and temperature with malaria mortality was modeled using general additive models, while distributed lag non-linear models were used to explore relationship between remote sensing variables, land surface temperature(LST), normalized difference vegetation index(NDVI) and rainfall on weekly malaria mortality. General additive models, with and without boosting, were used to develop malaria admissions forecasting models for lead times one to three months. We developed a framework for incorporating forecast output into economic evaluation of response strategies at different lead times including uncertainties. The forecast output could either be an alert based on a threshold, or absolute predicted cases. In both situations, interventions at each lead time could be evaluated by the derived net benefit function and uncertainty incorporated by simulation.

Results: We found that the environmental factors correlated with malaria mortality with varying latencies. In the first paper, where we used ground weather data, the effect of mean temperature was significant from lag of 9 weeks, with risks higher for mean temperatures above 250C. The effect of cumulative precipitation was delayed and began from 5 weeks. Weekly total rainfall of more than 120 mm resulted in increased risk for mortality. In the second paper, using remotely sensed data, the effect of precipitation was consistent in the three areas, with increasing effect with weekly total rainfall of over 40 mm, and then declined at 80 mm of weekly rainfall. NDVI below 0.4 increased the risk of malaria mortality, while day LST above 350C increased the risk of malaria mortality with shorter lags for high LST weeks. The lag effect of precipitation was more delayed for precipitation values below 20 mm starting at week 5 while shorter lag effect for higher precipitation weeks. The effect of higher NDVI values above 0.4 were more delayed and protective while shorter lag effect for NDVI below 0.4. For all the lead times, in the malaria admissions forecasting modelling in the third paper, the boosted regression models provided better prediction accuracy. The economic framework in the fourth paper presented a probability function of the net benefit of response measures, where the best response at particular lead time corresponded to the one with the highest probability, and absolute value, of a net benefit surplus.

Conclusion: We have shown that lagged relationship between environmental variables and malaria health outcomes follow the expected biological mechanism, where presentation of cases follow the onset of specific weather conditions and climate variability. This relationship guided the development of predictive models showcased with the malaria admissions model. Further, we developed an economic framework connecting the forecasts to response measures in situations with considerable uncertainties. Thus, the thesis work has contributed to several important components of early warning systems including risk assessment; utilizing surveillance data for prediction; and a method to identifying cost-effective response strategies. We recommend economic evaluation becomes standard in implementation of early warning system to guide long-term sustainability of such health protection programs.

MASOUD VAEZGHASEMI



Nutrition transition and the double burden of malnutrition in Indonesia

Thesis defended: 17 February, 2017
Supervisors: Nawi Ng, Ann Öhman, Malin Eriksson, Mohammad Hakimi
Opponent: Professor Anna Winkvist, Sahlgrenska Academy, University of Gothenburg, Gothenburg

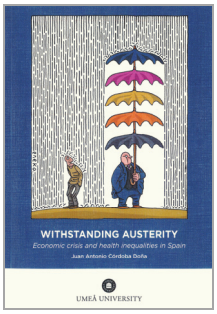
Introduction. Nutrition transition concerns the broad changes in the human diet that have occurred over time and space. In low- to middle-income countries such as Indonesia, nutrient transition describes shifts from traditional diets high in cereal and fibre towards Western pattern diets high in sugars, fat, and animal-source foods. This causes a swift increase in the prevalence of overweight and obesity while undernutrition remains a great public health concern. Thus a double burden of malnutrition occurs in the population. The main aim of this investigation was to explore social and contextual determinants of malnutrition in Indonesia. The specific objectives were: (i) to examine body mass index (BMI) changes at the population level, and between and within socioeconomic groups; (ii) to estimate which context (i.e., household or district) has a greater effect on the variation of BMI; (iii) to assess the prevalence of double burden households (defined as the coexistence of underweight and overweight individuals residing in the same household) and its variation among communities as well as its determining factors; and (iv) to explore and understand what contributes to a double burden of malnutrition within a household by focusing on gender relations.

Methods. A mixed method approach was adopted in this study. For the quantitative analyses, nationally representative repeated cross-sectional survey data from four Indonesian Family Life Surveys (IFLS; 1993, 1997, 2000, 2007) were used. The IFLS contains information about individual-level, household-level and area-level characteristics. The analyses covered single and multilevel regressions. Data for the qualitative component were collected from sixteen focus group discussions conducted in Central Java and in the capital city Jakarta among 123 rural and urban men and women. Connell's relational theory of gender and Charmaz's constructive grounded theory were used to analyse the qualitative data.

Results. Greater increases in BMI were observed at higher percentiles compared to the segment of the population at lower percentiles. While inequalities in mean BMI decreased between socioeconomic groups, within group dispersion increased over time. Households were identified as an important social context in which the variation of BMI increased over time. Ignoring the household level did not change the relative variance contribution of districts on BMI in the contextual analysis. Approximately one-fifth of all households exhibited a double burden of malnutrition. Living in households with a higher socioeconomic status resulted in higher odds of double burden of malnutrition with the exception of women-headed households and communities with high social capital. The qualitative analysis resulted in the construction of three categories: capturing the significance of gendered power relations, the emerging obesogenic environment, and generational relations for child malnutrition.

Conclusion. At the population level, greater increases in within-group inequalities imply that growing inequalities in BMI were not merely driven by socioeconomic factors. This suggests that other under-recognised social and contextual factors may have a greater effect on the variation in BMI. At the contextual level, recognition of increased variation among households is important for creating strategies that respond to the differential needs of individuals within the same household. At the household level, women's empowerment and community social capital should be promoted to reduce inequalities in the double burden of malnutrition across different socioeconomic groups. Ultimately community health and nutrition programmes will need to address gender empowerment and engage men in the fight against the emerging obesogenic environment and increased malnutrition that is evident within households, especially overweight and obesity among children.

JUAN ANTONIO CÓRDOBA DOÑA



Withstanding austerity. Economic crisis and health inequalities in Spain

Thesis defended: 24 February, 2017
Supervisors: Per Gustafsson, Miguel San Sebastián
Opponent: Stefan Fors, ARC (Aging Research Center), Institutionen för Neurobiologi, Vårdvetenskap och Samhälle (NVS), Karolinska institutet

Background: Along with the austerity measures introduced in many countries, the economic crisis affecting Europe since 2008 seems to have impacted many aspects of the health of the Spanish population and has had a negative effect on the provision health services. An increasing body of knowledge has shown a clear impact of the current crisis on suicidal behaviour and mental health, and a less consistent effect on physical health and access to healthcare. However, little is known about the impact of the crisis on social inequalities in health and healthcare access, an area on which the present study seeks to shed light in the context of Spain, and specifically Andalusia, a region hit very hard by the crisis.

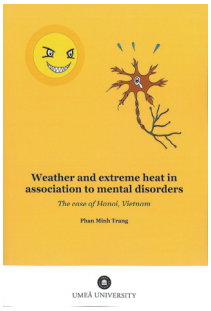
Objective: To study the impact of the economic crisis starting in 2008 on health, health inequalities and health service utilisation in Spain and Andalusia and the roles of socio-demographic factors in these associations.

Methods: Death rates were analysed to study the annual percent change in overall and cause-specific mortality in Spain between 1999 and 2011, and the Longitudinal Database of the Andalusian Population was used to study educational inequalities in overall mortality from 2002 to 2010 (study 1). To calculate suicide attempt rates, information from 2003 to 2012 on 11,494 men and 12,886 women provided by the Health Emergencies Public Enterprise Information System in Andalusia was utilised. The association between unemployment and suicide attempts was studied through linear regression models (study 2). Two waves of the Andalusian Health Survey (2007 and 2011–12) provided data for the third and fourth studies of this thesis. Educational and employment status inequalities in poor mental health in relation with the crisis were analysed through Poisson regression models (study 3). The change in inequalities (pre-crisis–crisis) in health care utilisation outcomes (general practitioner, specialist, hospitalisation and emergency attendance) was measured by the change in horizontal inequality indices. A decomposition analysis of change in inequality between periods was performed using the Oaxaca approach (study 4).

Results: Study 1: Overall mortality in Spain decreased steadily during the period, with annual percent changes of -2.44% in men and -2.20% in women. An increase in educational inequality in mortality was observed in men in Andalusia. In women, the inequalities instead remained stable. Suicide mortality showed a downward trend in both sexes in Spain. Study 2: A sharp increase in suicide attempts in Andalusia was detected after the onset of the crisis in both sexes, with adults aged 35 to 54 years being the most affected. Suicide attempts were associated with unemployment rates only in men. Study 3: Poor mental health increased in working individuals with secondary and primary studies during the crisis compared to the pre-crisis period, while it decreased in the university study group. However, in unemployed individuals poor mental health increased only in the secondary studies group. Financial strain could partly explain the crisis effect on mental health among the unemployed. Study 4: Horizontal inequality in utilisation changed to a greater equality or a more pro-poor inequality in both sexes. In the decomposition analysis, socioeconomic position and health status showed greater contributions to the changes in inequalities.

Conclusion: This thesis illustrates the complexity of the influences of the current economic crisis on health inequalities in a Southern European region. Specifically, no noticeable effects of the crisis on overall and suicide mortality were detected; instead, increasing educational inequalities in mortality in men and a large increase in suicide attempts in middle aged men and women were observed. The deterioration in poor mental health was mainly detected in those of intermediate educational level. Economic conditions such as unemployment and financial strain proved to be relevant. Finally, in the light of no increased inequalities in healthcare utilisation, the universal coverage health system seems to buffer the deleterious effect of the crisis and austerity policies in this context.

PHAN MINH TRANG



Weather and extreme heat in association to mental disorders. The case of Hanoi, Vietnam

Thesis defended: March 24, 2017
Supervisors: Maria Nilsson, Joacim Rovklöv, Kim Bao Giang
Opponent: Associate Professor Mare Löhmus Sundström, Institute of Environmental Medicine, Karolinska Institutet

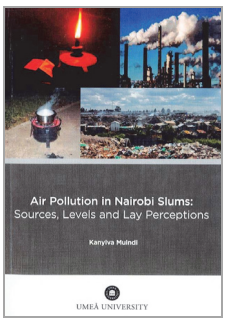
Background: Vietnam suffers consequences of global warming. There is limited data of the relationship between weather, extreme heat and potential mental health problems. It is therefore crucial to study heat-related mental illnesses and to establish good solutions with relevant adaptations to global warming. The adaptation measures should give attention to people that live in areas facing annual extreme weather, and protecting health in general and more specifically mental health of citizens. The study aimed to examine relationships between weather patterns, extreme heat or heatwaves, and mental disorders, and to investigate factors contributing to increased vulnerability and susceptibility.

Methods: The thesis includes a systematic review and a hospital-based study using data from the Hanoi Mental Hospital for five years (2008 – 2012), with mental disorders diagnosed by ICD10 (F00-99) to estimate the effects of weather variation, seasonality, increased temperatures, and heatwaves on hospital admissions for depression and other mental disorders. A negative binomial regression model accounting for yearly study period, time trends, and day of the week was used to analyze the relationship between seasonality, heatwaves, and monthly and daily mental disorder hospitalizations.

Results: Our findings showed (i) a general tendency for more admissions between May and December, with a seasonal bi-annual high between May-June and November-December, and elevated ambient temperature was significantly related to increasing admissions for depressive disorders; (ii) the number of hospital cases for mental disorders increased in the summer seasone specially in June, and two percent of cases emerged during elevated temperature of one degree Celsius; and (iii) when compared with non-heatwave periods, heatwaves amounted to increasing risks for admission for the whole group of mental disorders (F00-79), and admissions for mental disorders among residents in rural communities and in the elderly population increased significantly during heatwaves.

Conclusion: There were associations between hospital admissions for depression and other mental disorders and seasonality, weather patterns, elevated temperatures, and heatwaves. The associations grew stronger with the length of the heatwaves and particularly the elderly appeared more sensitive to seasonality, hot weather and heatwaves.

KANYIVA MUINDI



Air pollution in Nairobi slums: Sources, levels and lay perceptions

Thesis defended: September 1, 2017
Supervisors: Nawi Ng, Joacim Rocklöv, Elizabeth Kimani-Murage
Opponent: Associate Professor Marie Thynell, Institutionen för globala studier, Göteborgs universitet

Background. Air quality in Africa has remained a relatively under-researched field. Most of the African population is dependent on biomass for cooking and heating, with most of the combustion happening in low efficiency stoves in unvented kitchens. The resulting high emissions are compounded by ingress from poor outdoor air in a context of poor emissions controls. The situation is dire in slum households where homes are crowded and space is limited, pushing households to cook in the same room that is used for sleeping. This study assessed the levels of particulate matter with aerodynamic diameter £ 2.5 microns (PM2.5) in slum households and people's perceptions of and attitudes towards air pollution and health risks of exposure in two slum areas, Viwandani and Korogocho, in the Nairobi city.

Methods. The study employed both qualitative and quantitative methods. For the quantitative study, we used structured questionnaires to collect data about the source of air pollution among adults aged 18 years and above and pregnant women residing in the two study communities. We used the DustTrak™ air samplers to monitor the indoor PM2.5 levels in selected households. We also collected data on community perceptions on air pollution, annoyance and associated health risks. We presented hotspot maps to portray the spatial distribution of perceptions on air pollution in the study areas. For the qualitative study, we conducted focus group discussions with adult community members. Groups were disaggregated by age to account for different languages used to communicate with the younger and older people. We analysed the qualitative data using thematic analysis.

Results. Household levels of PM2.5 varied widely across households and ranged from 1 to 12,369µg/m3 (SD=287.11). The household levels of PM2.5 levels were likely to exceed the WHO guidelines given the high levels observed in less than 24 hours of monitoring periods (on average 10.4 hours in Viwandani and 11.8 hours in Korogocho). Most of the respondents did not use ventilation use in the evening which coincided with the use of cookstove and lamp, mostly burning kerosene. The levels of PM2.5 varied by the type of fuels, with the highest emissions in households using kerosene for cooking and lighting. The PM2.5 levels spiked in the evenings and during periods of cooking using charcoal/wood. Despite these high levels, residents perceived indoor air to be less polluted compared with the outdoor air, possibly due to the presence of large sources of emissions near the communities such as dumpsites and industries. The community had mixed perceptions on the health impacts of air pollution, with respiratory illnesses perceived as the main consequence while vector or sanitation related diseases such as diarrhoea was also perceived to be related to air pollution.

Conclusions. With poor housing and reliance on dirty fuels, households in slums face potentially high levels of exposure to PM2.5 with dire implications on health. To address the poor perception on air pollution and knowledge gaps on the health effects of air pollution, education programs need to be developed and tailored. These programs should aim to provide residents with information on air quality and its impact on the health; what they can do as communities as well as empower them to reach out to government/stakeholders for action on outdoor sources of pollution such as emissions from dumpsites or industries. The government has a larger role in addressing some of the key pollution sources through policy formulation and strong implementation/enforcement.

LAILA DAERGA

Att leva i två världar - Hälsoaspekter bland renskötande samer

Thesis defended: September 15, 2017
Supervisors: Klas-Göran Sahlén, Anette Edin-Liljegren, Lars Dahlgren och Lars Weinehall,
Opponent: Docent Ketil Lenert Hansen, Norges Arktiske Universitet, Tromsö, Norge

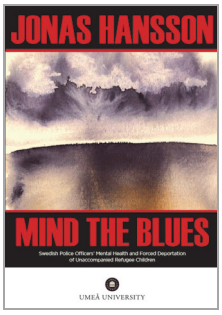
Introduction: There is a gap of knowledge of the health situation among the reindeer herding Sami in Sweden. The Swedish government has also got criticism for not taking responsibility for the Sami health. The aim of this thesis was to get more knowledge to understand the health situation of the reindeer herding Sami in Sweden. Furthermore, gender specific risk factors in the working environment among reindeer herders and their perception of healthcare and social services were investigated.

Method: Cross–sectional questionnaires covering different aspects of health such as musculoskeletal disorders, trust for different healthcare providers and work related psychosocial factors was distributed to reindeer herding Sami and non-Sami populations. Interviews with nine reindeer herding Sami about trust in healthcare and social services were carried out and analyzed with thematic analysis. Sixteen discussion meetings with 80 reindeer herders focusing on psychosocial perspectives of working conditions in Sami communities were performed.

Result: The prevalence of musculoskeletal symptoms from elbow, hand/wrist and lower back from male reindeer herders were higher compared to blue-collar worker. Psychosocial risk factors for health were identified such as high workload on a few herders, difficulties to get relief and support as well as to get appreciation in work and lack of participation in decisionmaking among women were common in the organization of reindeer husbandry. The trust in healthcare and social services was lower among reindeer herding Sami compared to non-Sami majority population. A hypothesis is that healthcare professionals do not know that the "Reindeer cloud" (metaphor to iCloud) affects all parts in the reindeer herders life. The distrust are influenced by historically traumas, reindeer herding Sami experiences from healthcare professionals and healthcare organization and culturally generated norms.

Conclusion: The thesis hypothesized that health disorders, attitude towards healthcare and psychosocial environment are important aspects when trying to understand the health situation among the reindeer herding Sami. There is a need to introduce long-term public health work for all Sami people, to establish ethical guidelines for Sami health research and develop healthcare services that provides access to healthcare for the reindeer herding Sami, on equal terms.

JONAS HANSSON



Mind the blues. Swedish police officers' mental health and forced deportation of unaccompanied refugee children

Thesis defended: September 29, 2017
Supervisors: Mehdi Ghazinour, Anna-Karin Hurtig, Lars-Erik Lauritz, Malin E Wimelius
Opponent: Professor Magnus Sverke, Psykologiska institutionen, Stockholms universitet

Introduction: Policing is a public health issue. The police often encounter vulnerable populations. Police officers have wide discretionary powers, which could impact on how they support vulnerable populations. In encountering vulnerable populations the police officers are required to be professional; maintaining mental health in the face of challenges is part of professionalism. Their encounters with vulnerable populations might influence their mental health which in turn might influence the way they use their discretion when making decisions.

Background/context: Sweden receives more unaccompanied, asylum-seeking refugee children than any other country in Europe. The number of asylum applications for such children increased from 400 in 2004 to 7000 in 2014 to over 35,000 in 2015. These children come to Sweden and apply for asylum without being under the care of their parents or other legal guardian. Some are denied asylum. If they do not return to their country of origin voluntarily the police are responsible for their deportation. The Swedish government wants an increasing number of deportations and wants them carried out with dignity. This thesis is about the police officers' perceptions of how to interpret the seemingly contradictory demands for more deportations, that is, *efficiency*; and concerns for human rights during the deportation process, that is, *dignity*. This is conceptualized using three theoretical frameworks: a) street-level bureaucracy, b) job demand-control-social support model and c) coping. These theoretical frameworks indicate the complexity of the issue and function as constructions by means of which understanding can be brought to the police officers' perceptions of deportation work involving unaccompanied, asylum-seeking refugee children and how such work is associated to their mental health.

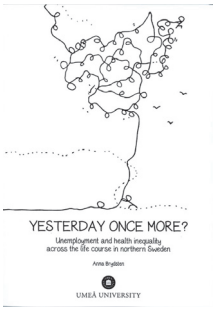
Aim: The current research aims to investigate and analyse Swedish police officers' mental health in the context of deportations of unaccompanied, asylum-seeking refugee children.

Methods: This thesis uses both qualitative and quantitative methodology. The qualitative approach comprised interviews conducted to achieve a deeper understanding of the phenomenon of police officers' perceptions of deportations of unaccompanied, asylum-seeking refugee children. The quantitative method involved the use of validated questionnaires to investigate the association between police officers' mental health and psychosocial job characteristics and coping. This approach made it possible to study a complex issue in a complex environment and to present relevant recommendations. A total of 14 border police officers were interviewed and 714 police officers responded to a survey.

Results: The police officers utilize their wide discretionary powers and perceive that they are doing what is best in the situation, trying to listen to the child and to be aware of the child's needs. Police officers with experience of deportations of unaccompanied, asylum-seeking refugee children were not found to have poorer mental health than police officers with no such experience. Furthermore, high job demand, low decision latitude, low levels of work-related social support, shift work and being single are associated with poor mental health. Coping moderates the association between mental health and the experience of carrying out deportations of unaccompanied, asylum-seeking, refugee children, and the police officers seem to utilize both emotional and problem-solving coping during the same complex deportation process.

Implications / conclusions: The general conclusion reached in this thesis is that if police officers are subject to reasonable demands, have high decision latitude, access to work-related social support, and utilize adaptable coping, the deportation work does not seem to affect their mental health. When police officers meet vulnerable people, they utilize their discretionary powers to deal with seemingly contradictory demands, that is, *efficiency* and *dignity*. The executive role in the deportations of unaccompanied, asylum-seeking refugee children and the awareness of dealing with a child threatened with deportation might give rise to activation of a sense of protection, safety and security. Discretion might make it possible to act on this sense of protection, safety and security and to combine *efficiency* and *dignity*. Further studies, which integrate cognitive and emotional discretion with coping, need to be undertaken.

ANNA BRYDSTEN



Yesterday once more? Unemployment and health inequality across the life course in northern Sweden

Thesis defended: October 13, 2017
Supervisors: Miguel San Sebastián, Anne Hammarström, Mattias Strandh
Opponent: Professor Per-Olof Östergren, Social Medicine and Global Health, Lund University

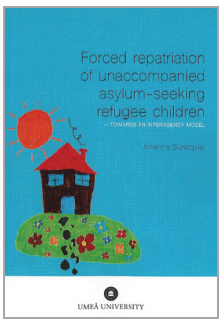
Background. It is relatively well established in previous research that unemployment has direct health consequences in terms of mental and physical ill health. Recently, knowledge has emerged indicating that unemployment can lead to economic consequences that remain long after re-establishment in the labour market. However, few empirical studies have been able to apply a life course perspective asking whether there are also long-term health consequences of unemployment, and, when and in which context unemployment may affect the individual health status across the life course. The aim of this thesis was to analyse the relationship between unemployment and illness across the life course, and how it relates to individual and structural factors in the geographical setting of northern Sweden. In particular, three main areas have been explored: youth unemployment and illness in adulthood (Paper I and Paper II), contextual unemployment of national unemployment rate and neighbourhood unemployment (Paper II and Paper III) and lastly, social determinants of health inequality between employment statuses (Paper IV).

Methods. This thesis is positioned in Sweden between the early 1980s and the mid-2010s, following two comparable cohorts sampled from northern Sweden (26 and 19 years follow-up time respectively from youth to midlife) and a cross-sectional sample from 2014 of the four northernmost counties in Sweden. The two longitudinal cohorts comprised the Northern Swedish Cohort and the Younger Northern Swedish Cohort, consisting of all pupils in the 9th grade of compulsory school in Luleå municipality in 1981 and 1989. The participants responded to an extensive questionnaire on socioeconomic factors, work and health, in 5 and 2 waves respectively of data collections. Neighbourhood register data from Statistics Sweden was also collected for all participants in the Northern Sweden Cohort. At the latest data collection, 94.3% (n=1010) participated in the Northern Sweden Cohort and 85.6% (n=686) in the Younger Northern Sweden Cohort. The cross-sectional study Health on Equal Terms is a national study, administered by the Public Health Agency together with Statistics Sweden and county councils with the aim of mapping public health and living conditions in the country over time. In this thesis, material from 2014 has been used for northern Sweden with a response rate of around 50% (effective sample n=12769). The statistical analyses used were linear regression, multilevel analysis and difference-in-difference analysis to estimate the concurrent and long-term health consequences of unemployment, and a decomposition analysis to disentangle the inequality in health between different labour market positions. The health outcomes in focus were functional somatic symptoms (the occurrence of relatively common physical illnesses such as head, muscle and stomach ache, insomnia and palpitation) and psychological distress.

Results. Among men only, as little as one month of youth unemployment was related to increased levels of functional somatic symptoms in midlife, regardless of previous ill health or unemployment later in life, although only during relatively low national unemployment (pre-recession) when comparing with youth unemployment during high national unemployment (recession). This was explained by the health promoting effect of more time spent in higher education during the recession period. Furthermore, the health impact of neighbourhood unemployment highlights the importance of the contextual setting for individuals' health both across the life course and at specific periods of life. Lastly, employment-related mental health inequalities exist for both men and women in all life phases (youth, adulthood and midlife). Economic and social deprivation related to unemployment and illness varied across different phases in life and across genders.

Conclusion. The key findings of this thesis paint a rather pessimistic vision of the future: one's own and others' unemployment may cause not only ill health today but also ill health later in life. Importantly, the responsibility of unemployment and the associated ill health should not be placed on the already marginalised individuals and communities. Instead, the responsibility should be directed towards the structural aspects of society and the political choices that shape these. In other words, health inequality manifested by the position in the labour market is socially produced, unfair and changeable through political decisions. The results of this study therefore cannot contribute to any simple or concrete solutions to the concurrent or long-term health consequences of individual or contextual unemployment, as the solution is beyond the areas of responsibility and abilities of research. However, if there are long-term health consequences of one's own and other people's unemployment, labour market and public health policies should be initiated from a young age and continue throughout the life course to reduce individual suffering and future costs of social insurance, sick-leave and unemployment benefits.

JOHANNA SUNDQVIST



Forced repatriation of unaccompanied asylum-seeking refugee children. Towards an interagency model

Thesis defended: October 27, 2017
Supervisors: Anna-Karin Hurtig, Mehdi Ghazinour, Mojgan Padyab, Kenneth Ögren
Opponent: Docent Solvig Ekblad, Institutionen för lärande, informatik, management och etik, Karolinska institutet

Introduction Not all children seeking asylum without parents or other relatives are entitled to residence permits. In the last few years, more than one in four unaccompanied asylum-seeking refugee children have been forced to repatriate, either to their home country or to a transit country. Mostly the children refuse to leave the country voluntarily, and it becomes a forced repatriation. Five actors collaborate in the Swedish child forced repatriation process: social workers, staff at care homes, police officers, Swedish Migration Board officers and legal guardians. When a child is forced to repatriate, the Swedish workers involved must consider two different demands. The first demand requires dignified repatriation, which is incorporated from the European Union's (EU's) Return Directive into Swedish Aliens Act. The second demand requires that the repatriation process be conducted efficiently, which means that a higher number of repatriation cases must be processed. The fact that the same professionals have different and seemingly contradictory requirements places high demands on the involved collaborators. Two professionals have a legal responsibility for the children until the last minute before they leave Sweden: social workers and police officers. That makes them key actors in forced repatriation, as they carry most of the responsibility in the process. Further, they often work with children who are afraid what will happen when they return to their home country and often express their fear through powerful emotions. Being responsible and obliged to carry out the government's decision, despite forcing children to leave a safe country, may evoke negative emotional and mental stress for the professionals involved in forced repatriation.

Aim The overall aim of this study is to explore and analyse forced repatriation workers' collaboration and perceived mental health, with special focus on social workers and police officers in the Swedish context.

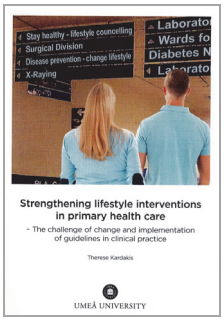
Materials and methods The study combines a qualitative and quantitative research design in order to shed light at both a deep and general level on forced repatriation. In qualitative substudy I, a qualitative case study methodology was used in one municipality in a middle-sized city in Sweden. The municipality had a contract regarding the reception of unaccompanied asylum-seeking refugee children iv with the Swedish Migration Board. The municipality in focus has a population of more than 100,000 inhabitants. The city in which the data were collected has developed a refugee reception system where unaccompanied asylumseeking refugee children are resettled and await a final decision regarding their permit applications. This situation made it possible to recruit participants who had worked with unaccompanied refugee children without a permit. Semi-structured interviews were conducted with a total of 20 social workers, staff at care homes, police officers, Swedish Migration Board officers and legal guardians. A thematic approach was used to analyse the data. In quantitative substudies II, III and IV, a national survey of social workers (n = 380) and police officers (n = 714), with and without experience of forced repatriation, was conducted. The questionnaires included sociodemographic characteristics, the Swedish Demand-Control Questionnaire, Interview Schedule for Social Interaction, Ways of Coping Questionnaire and the 12- item General Mental Health Questionnaire. Factor analysis, correlational analysis, and univariate and multivariable regression models were used to analyse the data.

Results The qualitative results in substudy I showed low levels of collaboration among the actors (social workers, staff at care homes, police officers, Swedish Migration Board officers and legal guardians) and the use of different strategies to manage their work tasks. Some of them used a teamwork pattern, showing an understanding of the different roles in forced repatriation, and were willing to compromise for the sake of collaboration. Others tended to isolate themselves from interaction and acted on the basis of personal preference, and some tended to behave sensitively, withdraw and become passive observers rather than active partners in the forced repatriation. The

quantitative results in substudy II showed that poorer mental health was associated with working with unaccompanied asylum-seeking refugee children among social workers but not among police officers. Psychological job demand was a significant predictor for mental health among social workers, while psychological job demand, decision latitude and marital status were predictors among police officers. Substudy III showed that both social workers and police officers reported relatively high access to social support. Furthermore, police officers working in forced repatriation with low levels of satisfaction with social interaction and close emotional support increased the odds of psychological disturbances. In substudy IV, social workers used more escape avoidance, distancing and positive-reappraisal coping, whereas police officers used more planful problem solving and self-controlling coping. Additionally, social workers with experience in forced repatriation used more planful problem solving than those without experience.

Conclusions In order to create the most dignified forced repatriation, based on human dignity, for unaccompanied asylum-seeking refugee children and with healthy actors, a forced repatriation system needs: overall statutory national guidance, interagency collaboration, actors working within a teamworking pattern, forced repatriation workers with reasonable job demands and decision latitude, with a high level of social support and adaptive coping strategies. The point of departure for an interagency model is that it is impossible to change the circumstances of the asylum process, but it is possible to make the system more functional and better adapted to both the children's needs and those of the professionals who are set to handle the children. A centre for unaccompanied asylum-seeking refugee children, consisting of all actors involved in the children's asylum process sitting under the same roof, at the governmental level (Swedish Migration Board, the police authority) and municipality level (social services, board of legal guardians), can meet all requirements.

THERESE KARDAKIS



Strengthening lifestyle interventions in primary health care. The challenge of change and implementation of guidelines in clinical practice

Thesis defended: November 24, 2017
Supervisors: Helene Johansson, Lars Weinehall, Lars Jerdén, Monica Nyström
Opponent: Senior Professor Charli Eriksson, Institutionen för folkhälsovetenskaper, Örebro universitet

Background: Lifestyle habits like tobacco use, hazardous use of alcohol, unhealthy eating habits and insufficient physical activity are risk factors for developing non-communicable diseases, which are the leading, global causes of death. Furthermore, ill health and chronic diseases are costly and put an increased burden on societies and health systems. In order to address this situation, governmental bodies and organizations' have encouraged healthcare providers to reorient the focus of healthcare and undertake effective interventions that support patients to engage in healthy lifestyle habits. In Sweden, national clinical practice guidelines (CPGs) on lifestyle interventions were released in 2011. However, the challenges of changing clinical practice and introducing guidelines are well documented, and health interventions face particular difficulties. The overall purpose of this thesis is to contribute towards a better understanding of the complexities of shifting primary health care to become more health oriented, and to explore the implementation environment and its effect on lifestyle intervention CPGs. The specific aims are to investigate how implementation challenges were addressed during the guideline development process (Study I), to investigate several dimensions of readiness for implementing lifestyle intervention guidelines, including aspects of the intervention and the intervention context (Study II), to explore the extent to which health care professionals are working with lifestyle interventions in primary health care, and to describe and develop a baseline measure of professional knowledge, attitudes and perceived organizational support for lifestyle interventions (Study III), and to assess the progress of implementing lifestyle interventions in primary care settings, as well as investigate the uptake and usage of the CPGs in clinical practice (Study IV).

Methods and results: Interviews were conducted with national guideline-developers (n=7). They were aware of numerous implementation challenges, and applied strategies and ways to address them during the guideline development process. The strategies adhered to four themes: (a) broad agreements and consensus about scope and purpose, (b) systematic and active involvement of stakeholders, (c) formalized and structured development procedures, and (d) openness and transparent development procedures. At the same time, the CPGs for lifestyle interventions challenged the development-model at the National Board of Health and Welfare (NBHW) because of their preventive and non-disease specific focus (I).

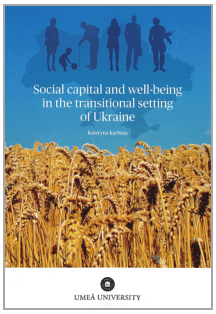
A multiple case study was also conducted, using a mixed methods approach to gather data from key organizational individuals that were accountable for planning the implementation of CPGs (n=10), as well as health professionals and managers (n=340). Analysis of this data revealed that conditions for change were favorable in the two organizations that served as case studies, especially concerning change focus (health orientation) and the specific intervention (national guidelines on lifestyle interventions). Somewhat limited support was found for change and learning, and change format (national guidelines in general). Furthermore, factors in the outer context were found to influence the priority and timing of the intervention, as well as considerable inconsistencies across the professional groups (II). A cross-sectional study among physicians and nurses (n=315) in Swedish primary healthcare showed that healthcare professionals have a largely positive attitude and thorough overall knowledge of lifestyle intervention methods. However, both the level of knowledge and the involvement in patients' lifestyle change, differed between professional groups. Organizational support like CPGs and the development of primary health care (PHC) collaborations with other stakeholders were identified as potential strategies for enhancing the implementation of lifestyle interventions in PHC (III).

In addition to interviews and case studies, a longitudinal survey among health professionals (n=150; n=73) demonstrated that their use of methods to encourage patients to reduce or eliminate tobacco or

alcohol use, had increased. The survey also indicated that nurses had increased the extent to which they addressed all four lifestyle habits. The progress of the implementation of CPGs on lifestyle interventions in PHC was somewhat limited, and important differences in physicians and nurses' attitudes, as well as their use of the guidelines, were found (IV).

Conclusions: Health orientation differs in many ways from more traditional fields in medicine. To strengthen the implementation of this very important (but not "urgent") field in health care, it needs, first of all, to be prioritized at all levels! The results of the studies demonstrate relatively slow adoption of lifestyle intervention CPGs in clinical practice, and indicate room for improvement. The findings of this thesis can inform healthcare policy and research on further development of the health orientation perspective, as well as on the challenges of implementing CPGs on lifestyle interventions in primary care. In summary, this thesis presents important lessons learned regarding health orientation - from the development of CPGs in the field, via assessing healthcare organizations' readiness to change and health professionals' attitudes to methods to support patients with lifestyle changes

KATERYNA KARHINA



Social capital and well-being in the transitional setting of Ukraine

Thesis defended: December 15, 2017
Supervisors: Malin Eriksson, Mehdi Ghazinour, Nawi Ng
Opponent: Professor Mikael Rostila, Centre for Health Equity Studies, Stockholm University

Background: The military conflict in Ukraine that started in 2014 was accompanied with many changes in the political, economic and social spheres. It brought informal volunteering activities (i.e. one form of social capital) to emerge, function and later to be formalized, in order to support soldiers and their families. This situation is unique given the transitional setting of Ukraine, which has led to comparably low levels of social capital and negative indicators of health and well-being. This thesis aims to explore social capital during military conflict in contemporary Ukraine and to analyze the associations between social capital and well-being, as well as the distribution of social capital among Ukrainian women and men.

Methods: The study combines a qualitative and quantitative research design. A case study was conducted using qualitative methodology. Eighteen in-depth interviews were collected with providers and utilizers of volunteering services. Grounded Theory and social action ideal types methodology of Weber were used for the analysis. The quantitative research utilized two secondary datasets. The World Health Survey was utilized to analyze the association between social capital and physical and mental well-being for women (n=1723) and men (n=910) by means of multivariate logistic regression. The European Social Survey (wave 6) was used in order to investigate access to social capital and the determinants of gender inequalities in the access with a sample of 1377 women and 797 men. Multivariate logistic regression and postregression Fairlie's decomposition analysis were used to analyze the determinants of the inequalities.

Results: The key findings of this thesis show that social capital transforms during military conflict and takes particular forms in transitional settings. There are positive and negative effects on well-being connected to crisisrelated volunteering. The associations between social capital and well-being vary for women and men in favour of women. Social capital is unequally distributed between different social groups. Some forms of social capital may have stronger buffering effect on women than men in Ukraine. Access to social capital can be viewed as an indicator for social well-being, and thus social capital can be used both as a determinant and an outcome in social capital and health research.

Conclusion: Informal social participation, i.e. volunteering might play an important role in societal crises and needs to be considered in social capital measurements and interventions. Social capital measurements utilized in stable societies do not evidently capture these forms, i.e. it is not taken into account. The associations between social capital and well-being depend on the measurements that are used. Since social capital has both positive and negative effects on well-being, this should be considered in research, policies and practices in order to prevent negative and promote positive outcomes. In Ukraine, as well as in other settings, social capital is an unequal resource for different societal groups. Reducing gender and income inequalities would probably influence the distribution of social capital within the society.

Engaging with society - a mission for research and education

At Epidemiology and Global Health, we have great opportunities to engage with society since our research and education directly relates to health and social sectors and is therefore relevant for policy development. The challenge for EpiGH is to take on institutional responsibility and not to rely exclusively on individual initiatives.

During 2017, we continued our collaboration with partners in low- and middle-income countries as well as with the Västerbotten County Council here at home. We have also continued the collaborations with organizations such as the Swedish Public Health Agency, the European Centre for Disease Prevention and Control (ECDC), and the research and development division at Region Västerbotten.

To address policy and society relevant questions outside of Europe and Sweden, such as in low- and middle-income countries, we must not only deepen present collaborations, but also introduce new partners and areas. In addition, we must continue to reduce structural and administrative hindrances for engaging in society.

At the EpiGH unit we seek to contribute to equitable and sustainable improvements in health and welfare across the globe. Provided that the commitment for engagement within society is strong, we believe that this can be achieved by facilitating exemplarily educational experiences and conducting good research.

When the first university in Bologna was established, the objective was to promote societal development. However, gradually interaction with society diminished, as universities strived for their independence. As a result, teaching and research have been seen as universities' only two missions for centuries. Lately, the universities' contribution to global economic and social development has been increasingly encouraged by policy makers and other stakeholders, thus becoming recognized as universities' *third mission*. Umeå University considers this as an integral part of teaching and research.

Translating Research into Practice

When the Epidemiology and Global Health Unit was established 1986, interaction with society was and continues to be a core objective. Working with problems in villages such as Butajira, Ethiopia, ideas in cities like Hanoi, Vietnam, and possible solutions to health issues in the county of Västerbotten, are all examples when our research and teaching have interacted with the surrounding society. More recently, we are jointly finding ways to strengthen the research capacity of Somali universities and promote collaborative action research to contribute to strengthening that country's health system.

Another collaboration focused on climate change and health between Västerbotten County Council, Sweden, and Yogyakarta City Government, Indonesia, serves as an example of cooperation between researchers, decision makers and industry across borders. The project that ran 2014-2016 focused on creating an early warning system for a climate sensitive disease – dengue fever, involving all important stakeholders.

Promoting Educational Exchange

Finally, we aim to promote opportunities for educational exchanges with low- and middle-income countries. As part of these efforts, we have prepared for two "new" MPH programmes in the second year. The idea is that the foreign student can take basic courses corresponding to our first year at home and then continue with the second year in Umeå.

During 2017 we have continued our collaboration with Nordic countries as part of an Nordic-Plus application. EpiGH participated in a work-shop in Bergen, Norway, aiming to explore possible collaborative arenas within the Nordic countries. One university from each country participated.

In summary, we are once again proud to say that engaging with society is at the heart of all our activities. At the EpiGH Unit we continuously strive for high quality research and teaching, which gives us rich possibilities for interaction with the surrounding world. All this can be done thanks to devoted leadership and administrative staff, researchers, and lecturers, in addition to collaborators from all around the world. Rather than a separate *third mission,* for us it is important that engagement in society is truly incorporated into our research and our education, and thus contributes positively to societal development regarding of societies health and welfare.

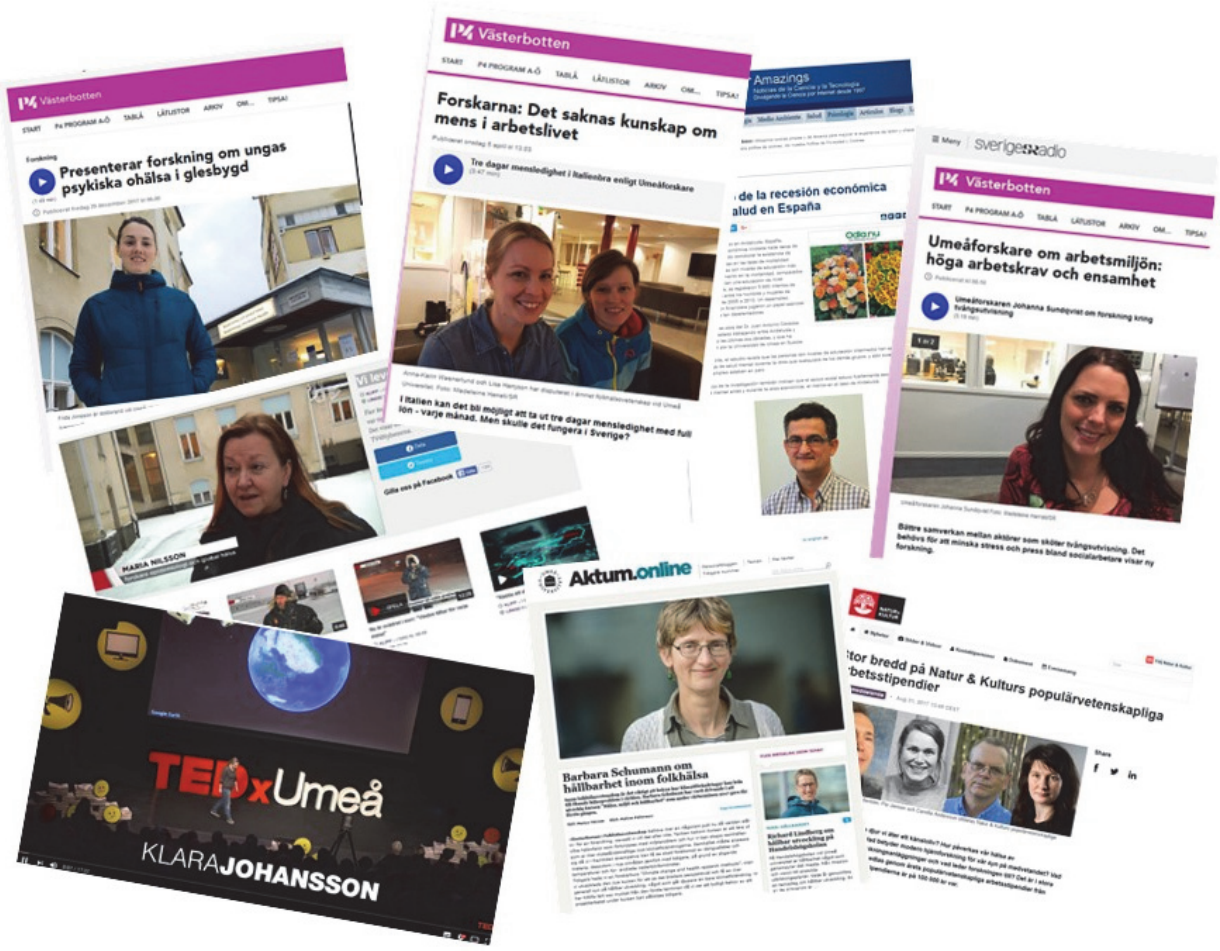


Figure 12. During 2017 we have been engaging with society via many different media.

Collaboration locally and regionally

Region Västerbotten

Region Västerbotten is among many other tasks, nationwide aimed at building regional support structures that are sustainable in the long term for the development of knowledge and competence within social services and relevant areas within health care. FoU Välfärd (R&D for welfare) as a unit constitute the regional structure for contribution to an evidence based practice in different areas such as elderly care, children and youth, substance abuse and addiction, mental health, welfare technology and others. By increasing the level of expertise, implementing methods according to national guidelines, monitoring studies, assisting the leadership and performing research near to the practice, FoU Välfärd strive to support good and appropriate care for the benefit of the user.

As a regional actor FoU Välfärd works between the national and the local level and a basis for successful work is cooperation and partnerships with other actors and Umeå university is one of those. In a "Network for Knowledge", representatives from several departments at the university, as well as representative from the unit of public health at the county council, meet together with the research leaders at FoU Välfärd, four times a year for exchange of ideas, research and collaboration. A letter of intent from 2016, between FoU Välfärd and the Department of public health and clinical medicine, Epidemiology and public health, has further underlined the will and intention for fruitful cooperation. The head of FoU Välfärd also holds an adjunct lectureship at the unit. In addition to the scientific knowledge support that thereby becomes available to municipalities and county councils, there are also greater opportunities for new joint research projects.

CONTACT: *Annika Nordström*

Västerbotten County Council

For many years now the County Council has been working closely with the Unit of Epidemiology and Global Health. The collaboration is regulated by an agreement between the University and the County Council.

One-of-a-kind in Sweden, the County Council has the advantage of directly accessing the new scientific basis for health interventions that are being planned. The Unit, on the other hand, has through this cooperation access to the daily life of a health care organisation and can therefore quickly learn and observe the difficulties in implementing new evidence-based methods. No matter how good the research, the organisation will always have to adopt to new ways of working or new ways of thinking – not always an easy task. In this ongoing spirit of cooperation, the County Council has developed the Västerbotten Intervention Programme immensely into one of the most important population based preventive strategic contributions to the people in the county of Västerbotten. This is in many ways due to the close collaboration between researchers at the Epidemiology and Global Health Unit and the administrative, coordinating, and supporting team within the County Council, as well as the many VIP-nurses, who carry out the program in daily practice. Within the health initiative the Salut Programme, clinical professionals have together with researchers from the Unit and health promotion officers from the County Council developed health questionnaires within the antenatal-, pediatric-, dental health care systems, in addition to developing school-based health programs with staff and teachers.

Positive outcomes thanks to the close collaborations between our different organisations are many such as getting to know better new friends and colleagues.

CONTACT: *Maria Falck*

Northern Register Centre

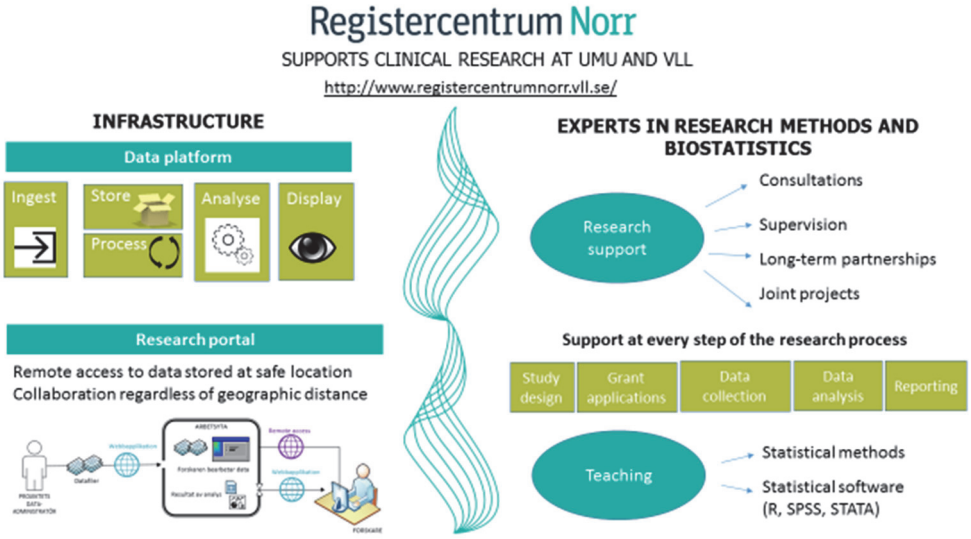
The Northern Register Centre (RC North) is a part of a national organisation for support of Sweden's approximately 100 national quality registers. RC North provides technical infrastructure and expert knowledge in IT, statistics and research methodology to support continuous monitoring and improvement of health care, and to promote register-based research.

RC North is a part of the Västerbotten County Council's infrastructure for research and education. RC North runs and participates in national and regional projects on health care quality improvement and clinical research together with Memeologen, Clinical Trial Unit, Clinical Research Centre, Forum Norr and Innovation AB. RC North has a close collaboration with the Northern Regional Cancer Centre concerning the most commonly used Swedish IT-platform for quality registers, INCA. RC North collaborates with various institutions at Umeå University, offering both infrastructure and expert skills to support clinical research as well as register-based research.

RC North collaborates with the Unit of Epidemiology and Global Health (EpiGH) in several different ways. We provide joint courses, including a PhD course on register-based research, and a masters-level course in biostatistics, to name a few. We are also exploring the possibilities for partnerships in research in health economics, on the development of Patient Reported Outcome Measures (PROM), and on implementation research.

The collaboration is mutually beneficial. By taking part in education at EpiGH, RC North statisticians can establish a foundation in clinical practice, and also develop their skills in statistics and above all in epidemiology together with the staff at EpiGH. EpiGH's skills in health economics are important for the development of the format for the feedback from quality registers back to health care.

CONTACT: *Yulia Blomstedt*



Center for Rural Medicine, Storuman

The Center for Rural Medicine (in Swedish, glesbygdsmedicinskt centrum or GMC) is a research and development unit in Storuman, southern Lapland, but also a unit of Västerbotten County Council. The aim of this unit is to increase knowledge of how both health and social care can be best tailored to meet the needs of the population in Västerbotten and across the country, as well as to increase the recruitment of physicians and other health care professionals within the more rural areas of Sweden.

GMC's mission is to work with education, research and development in four predominant areas:

- Enhancing collaborative work practices between County and State/Municipal departments
- Development of the "Community of Hospital Model"
- Development of technology, which can enhance medical practices/techniques available via distance
- Sami health care

The main objectives of GMC are to:

- Contribute to the evaluation and definition of the health and social care provided in rural areas
- To stimulate and conduct research and development in topics related to rural areas, specifically where challenges currently occur in relation to health and social care
- To serve as the center for preventive health care, research and development in relation to the County's indigenous Sami population
- Initiating training programs so as to increase skills in rural health care
- The strengthening and promotion of international contacts within the global field of rural medicine

GMC is currently working to identify collaborative partners, who have scientific qualifications and locally based competence, as well as knowledge of national and international funding sources. GMC seeks to generate and maintain connections and networks within both the inland municipalities and the Community Hospitals in southern Lapland. An emerging area of focus is developing rural health care network within the four northernmost counties of Sweden.

Presently EpiGH and GMC are developing different kinds of collaborations including PhD education and research collaboration.

CONTACT: *Anette Liljegren*

Consultancy and advisory functions

We regularly contribute our time and expertise within Umeå University and externally, the latter at local, regional, national and international level through a variety of consultancy and advisory functions. Examples of such roles are given below (Table 3). In addition, our researchers are of course referees and on editorial boards for a large number of scientific journals.

We are key advisers behind the Västerbotten County Council Public Health Policy programme. On a regular basis we train local and regional political assemblies, as well as patient organisations and public associations. We participate in many public health education activities, both for basic public health training and dissemination of public health research. We regularly inform decision-makers, such as politicians and officials from the municipalities and the county councils, of public health issues in the northern region.

Table 3. Consultancy and advisory tasks among the staff.

Name	Institution	Task
Peter Byass	United Nations	Chair, Technical Advisory Group for Maternal Mortality Estimates Inter-Agency Group
	INDEPTH	Chair, INDEPTH Network Scientific Advisory Committee
	WHO	Member, WHO Malaria Policy Advisory Committee: Surveillance, Monitoring and Evaluation Technical Expert Group
	Lancet	Member, Lancet Countdown: Tracking Progress on Health and Climate Change
Anna-Karin Hurtig	Swedish Research Council for Health, Working Life and Welfare (FORTE)	Member of scientific panel "Health promotion and behavior"
	Umeå University	Member of Board of Research, Medical faculty
		Member of Board of Employment and Docentship
	The Swedish Association of Social Medicine	Member of Board and Secretary
	Swedish Medical Association	Member, International Committee for Global Health
Anneli Ivarsson	Medical Faculty, Umeå University	International Director
		Chair, Strategic Committee for Internationalisation
		Chair, Council for internationalization of the education
		Member of the evaluation group for infrastructure financial support
	The Swedish Foundation for Humanities and Social Sciences - Riksbankens Jubileumsfond	Member of the assessment group for research infrastructure applications
	Forte/Formas/VR	Member of the evaluation group for research on child mental health
	Swedish Medical Association	Member, Working Group for Celiac Disease
		Member, International Committee for Global Health
	The Research Council of Norway	Expert, Referee Panel on High-quality and Reliable Diagnostics, Treatment and Rehabilitation.
	Centre for Demographic and Ageing Research (CEDAR), Umeå University	Board member
Klara Johansson	Public Health Agency of Sweden	Support to the Unit for Health and Sexuality and the Unit of Mental health, Children and Youth

John Kinsman	INDEPTH Social Science Working Group	Vice Chair
Ida Linander	Västerbotten County Council	Educator in the LGBTQ certification project
Curt Löfgren	Umeå University	Member, Council for the internationalization of education, Faculty of Medicine
Nawi Ng	Hanoi University of Public Health, Vietnam	Member of the International Publishing Adviser
	Gadjah Mada University, Indonesia	Member of Scientific Advisory Committee for Sleman HDSS
	SEACO – Southeast Asia Community Observatory, Malaysia	Member of Scientific Advisory Group
Maria Nilsson	Ministry of Social Affaires	Member, Advisory board for ANDT- control and prevention (Alcohol, Narcotics, Doping, Tobacco)
	Lancet	Member, Lancet Countdown on Climate Change and Health
	Umeå University	Member, Research Education Committee, Faculty of Medicine
Margareta Norberg	Umeå University	Member, Expert group on Cardiovascular Diseases, Unit of Biobank Research
	Umeå University and Västerbotten county council	Member of the Board for Biobank and Register Research
	Västerbotten county council	Member of the Scientific Board Västerbotten Intervention Programme
Lennarth Nyström	Joint Research Centre, Ispra, Italy	Expert, European Guidelines for breast cancer screening and diagnosis
Mikkel Quam	ECDC	Expert consultant regarding Environmental drivers of Infectious Diseases
	WHO	Expert advisor/co-author on Climate and Health Report
	ELF/FORES	Expert advisor/co-author on Climate Change and Zika/Dengue Report
Joacim Rocklöv	Health sector coordinator ISIMIP project,	Potsdam Institute of climate impact research
	Chair	ICELAB, Integrated Science Lab, UmU
	ECDC	Expert consultant regarding Environmental drivers of Infectious Diseases
	WHO	Expert advisor/co-author on Climate and Health Report
	ELF/FORES	Expert advisor/co-author on Climate Change and Zika/Dengue Report
Klas-Göran Sahlén	Umeå University	Member of the Education Strategic Committee, Medical faculty
	Umeå University	Board member, CERUM
Barbara Schumann	Public Health Agency of Sweden	Support to the Unit of Environmental Health
Lars Weinehall	Umeå University	Member, Sliperiet board.
		Member, Faculty of Medicine committee on ethical issues
	Swedish Research Council for Health, Working Life and Welfare (FORTE)	Chairman, Assessment group on Guest researchers and conference funding applications
	National Board of Health and Welfare	Revision of National Guidelines for evidence based disease prevention methods (Chairman of the Priority Committee)
Ann Öhman	Västerbotten County Council	Expert advice regarding 'Violence in close relations'
	European Institute for Gender Equality	Expert Committee for Gender-Based Violence

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