Annual Report 2015

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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Printed by Print & Media, Umeå, Sweden 2016
Cover photo: Lena Mustonen

Prologue

To all staff, collaborators and other colleagues,

One more year has quickly passed by with a lot of achievements! Our Mission, Vision and Values guide our work, and should continue to do so (page 6). However, the Umeå University's Vision and Objectives should of course also guide our work. When reflecting on 2015, it is clear that we are working in line with the University's ambitions. Below you will find the short version of this, and we encourage you to visit the webpage and to read and consider the full version.

Umeå University's Vision and Objectives.
Webpage: www.umu.se/english/about-umu/vision-and-strategies

For many years, we have been striving to MAKE THINGS POSSIBLE, as now explicitly encouraged by the University. We prioritize *long term* collaboration with both national and international partners, which is evident from this report. *A high-level of risk-taking* is sometimes necessary, as for example in our recently renewed Somali collaboration (p 55). We are also striving for a *creative* environment. *Dynamic encounters* and *collaboration* with many partners is central to our daily work, and you will find many examples in this report.

EDUCATION FOR BOUNDLESS KNOWLEDGE. We are contributing to this part of the University's Vision. We offer *attractive educational programmes* at both Master- and PhD-level, and our *skilled teaching staff* are also involved in *research and the outside world* (both in Sweden and globally), which certainly creates experiences that benefit our students. The *international dimension* is evident with this year's Master students representing as many as 41 countries.

RESEARCH THAT BREAKS DOWN BOUNDARIES. Yes, we are involved in *ground-breaking research* that seeks to tackle *society's challenges*, and we develop *attractive research programs* that *create competitiveness.* You find many examples in this report, including, to mention a few: Dengue Tools, VIPVIZA and Ebola (p 26-30). All are examples where geographical, methodological, and professional boundaries are challenged.

Thank you all for contributing to creating the research and educational environment where all this is possible! Joyful but also demanding. We must strive to continue to take care of each other in a gentle and respectful way.

The working group for "Annual Report 2015" has been Lena Mustonen, John Kinsman, and Anne Britt Coe. Thank you for a terrific work!

Anneli Ivarsson
Head of Unit

Klasse Sahlén
Deputy Head

Anna-Karin Hurtig
Deputy Head

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Special events

Epidemiology and Global Health celebrating 100th PhD thesis - February 23, 2015


100 thesis celebration
23-24 Feb 2015
Lulu M. Muhe MD, PHD


MNI

Installation of our new professor Nawi Ng at the Annual Celebration October, 2015

Christmas dinner

Institutional setting

Organisation, Leadership and Staff

The Unit of Epidemiology and Global Health (EpiGH) is a multidisciplinary research and teaching environment located within Umeå University's Medical Faculty, and its Department of Public Health and Clinical Medicine (Figure 1). Given our goal of improving population health, we are also dedicated to spreading knowledge and skills with society in many different ways.

Our research is organised under the umbrella of Umeå Centre for Global Health Research (UCGHR) (pages 19-25). We host Umeå International School of Public Health with Master's Programmes in Public Health (MPH) (pages 35-39), and the Swedish Research School for Global Health (page 41-42), the latter in partnership with Karolinska Institutet and Lund University.

Our leadership group is built by persons having specific responsibilities within the Unit, and has an executive mode of working. The group meets each Monday, and any staff member can approach the group, or its members, both formally and informally. The group has the following members:

Anneli Ivarsson	Head of Unit
Anna-Karin Hurtig	Deputy head of Unit
Klas-Göran Sahlén	Deputy head of Unit
Karin Johansson	Administrative coordinator
Andreas Ekholm	Economist

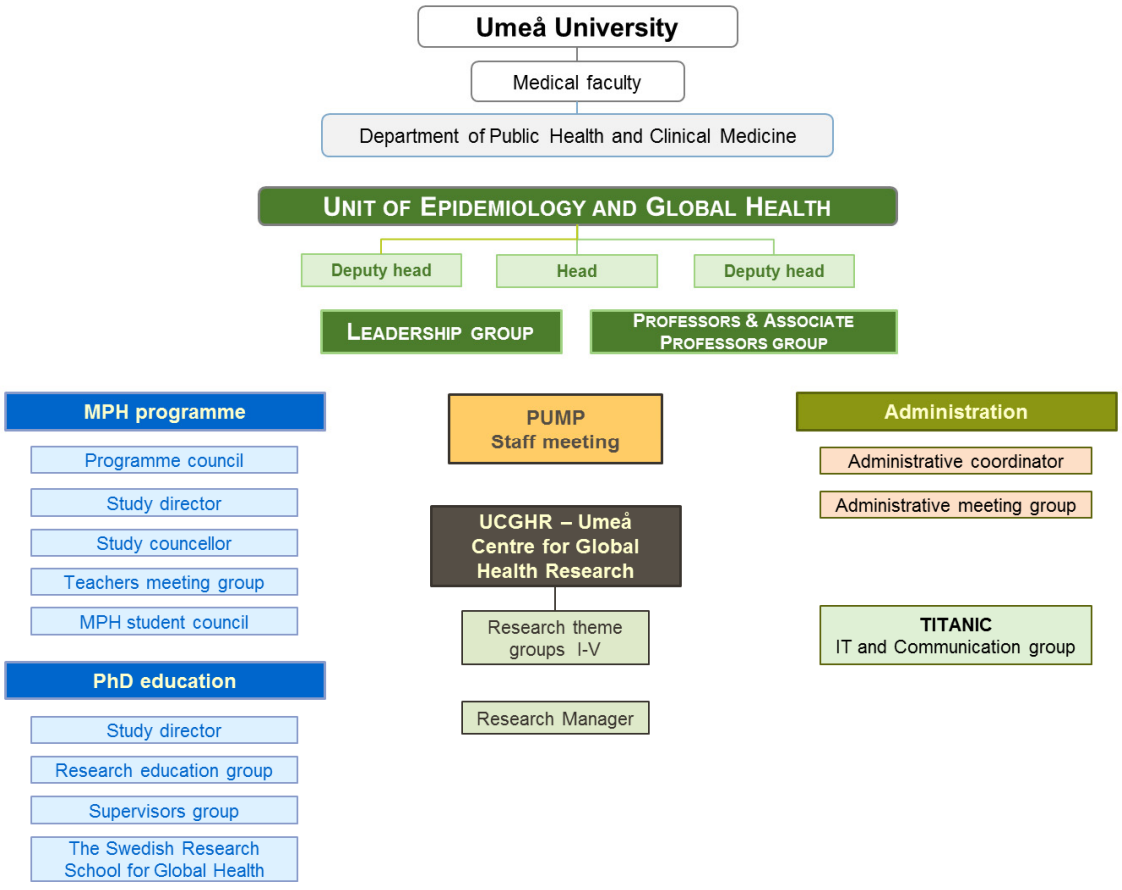

Figure 1. Organisation of the Unit within Umeå University.

In autumn 2015, we launched the professors and associate professors forum to allow more in-depth discussion on how to move research forward long term. This group meets twice each semester to discuss mainly research issues; the development of our research, how to link research and education, and how research can engage with society. The group is currently lead by Professor Lars Lindholm

At present 60 research and administrative posts are attached to our Unit (not including sandwich doctoral students), of which 68 % are held by women. Out of the 57 PhD students 32 are women and 25 are men. The female/male ratio differs between groups, with a minority of women among professors and teachers/researchers whereas it is the opposite among administrators. Both staff and PhD students represent a wide range of different professions, as for example physicians, nurses, sociologists, economists, social workers, dentists, environmentalists, physiotherapists and nutritionists.

All staff are encouraged to participate in the bi-weekly staff meeting (PUMP) and in the unit day(s) usually taking place each semester. Some of our faculty are full time employees, others attached on a part time basis. Most of the latter group are former PhD students continuing their research and contributing as teachers and supervisors. Others are involved in some of our collaborations.

Over the last years our involvement as a Unit for a sustainable environment has increased. We have implemented some concrete actions for reducing the Unit's carbon footprint. Recycling bins for cardboard and plastic have been introduced together with a rotating system for emptying them. Orientation materials for new employees and visiting students include information about recycling. Distribution of printed materials for Master's students have been limited to lecture handouts. Double-sided printing is being set as default on all computers. Skype for Business-communication system has been adopted by the unit to facilitate virtual meetings. Vegetarian or locally produced food is offered as the default option at unit events. Coffee, tea, hot chocolate, and milk powder provided in the coffee room is fair trade and organic.

Since its inception, EpiGH has been housed in a 100-year old building that was Umeå's original hospital. The unit will move to a new building in 2017, therefore extensive work was conducted on planning the move during 2015 and will continue during 2016.

Our work is guided by Vision, Mission and Values described below (Figure 2).

Figure 2. Vision, mission and values

Finances

The total budget for this year amounted to 48 MSEK, out of which 60% originated from sources external to the university (Figure 3). Our main activities are reflected in the budget, i.e. education and research, and both are key activities in our daily work, but as evident from the budget research activities are dominating (Table 1).

Our education budget amounted to 8.5 MSEK, out of which 2.6 MSEK was support via governmental grants to our Master of Public Health (MPH) programmes, and the other dominating source was tuition fees (Table 1). A few students paid these out-of-pocket, but the majority were awarded scholarships from different sources: *Umeå University* (3), *Erling-Persson foundation* (16), the *Swedish Institute* (11), and *Science Without Borders* (9).

The research support from governmental grants is an important base (9.3 MSEK), as it provides some stability with respect to finances (Table 1). However, the major part of research funding this year, as previous years, was awarded from external sources in competition, i.e. different research funding bodies (17.9 MSEK) (Table 2), and by commissioned research (5.6 MSEK). Importantly, five PhD students were awarded scholarships from the *Swedish Centre Party donation*, which indirectly supports our research activities.

This year the revenues were higher than our costs, resulting in a net profit of 5.5 MSEK. Contributing to the seemingly high profit is a change in accounting principles where older grants were included in the result. This said, as we are highly dependent on continuously securing our revenues via external sources, and our main costs are for permanently employed staff, we experience it beneficial to have some funds in "the coffin" at the start of a year.

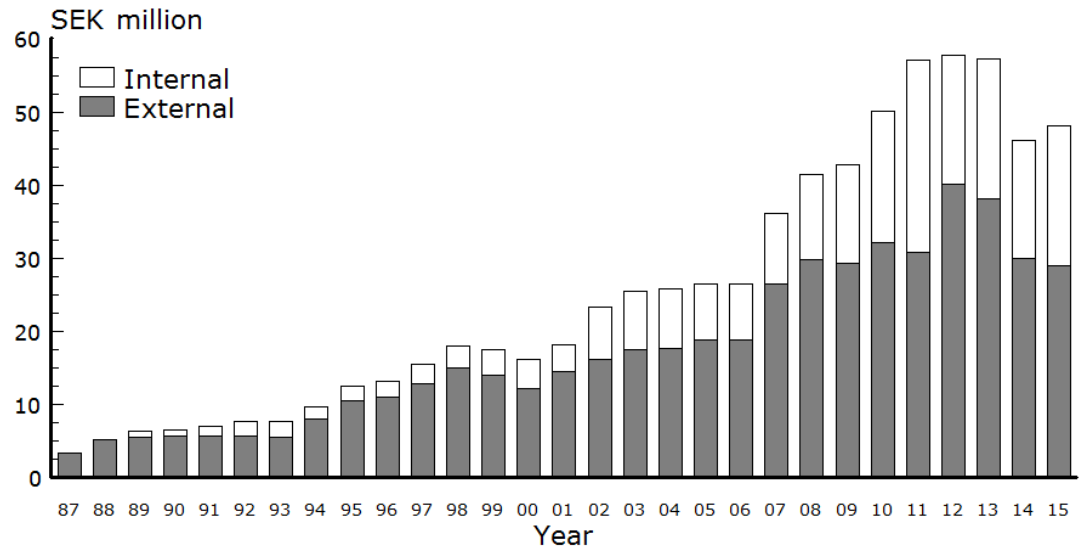

Figure 3. Development of annual budget 1987-2015.

Table 1. Revenues and costs.

Revenues (1000 SEK)	Education	Research and PhD training	Commissioned research	Total
External grants	5 275	17 865	0	23 140
External contracts	226	0	5 579	5 805
Government grants	2 649	9 349	0	11 998
Other revenues	429	5 300	1 495	7 224
Total	**8 579**	**32 514**	**7 074**	**48 167**

Costs (1000 SEK)				
Staff	6 455	17 014	4 086	27 555
Premises	250	959	0	1 209
Other operative expenses	847	9 045	575	10 467
Depreciation	0	50	4	54
Overheads	434	2 493	423	3 350
Total	**7 986**	**29 561**	**5 088**	**42 635**

Table 2. Contributing funding agencies and the awarded grant(s), respectively.

Funding Agencies	Grant (MSEK)
Swedish Research Council for Working Life and Welfare (FORTE)	9.7
Vårdalstiftelsen	3.0
Swedish Research Council	1.5
European Commission	1.3
The Swedish Research Council FORMAS	1.1
The Swedish International Development Cooperation Agency (SIDA)	0.9
Others	0.4
Total	**17.9**

Outputs

There are no measures that fully can evaluate our activities. However, a measurable outcome criterion is the number of publications (Figure 4). The ups and downs of the curve result from 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.

During this year, 57 PhD students were associated with our unit, 5 of which were newly registered during the year. Figure 5 shows the number of doctoral dissertations over time

As part of the Medical Faculty budget model three parameters are used for assessment of productivity: Publications, PhD exams, and external grants. Each department/unit is given a budget, based partly on this assessment system. Over the years we have been increasingly competitive in this evaluation.

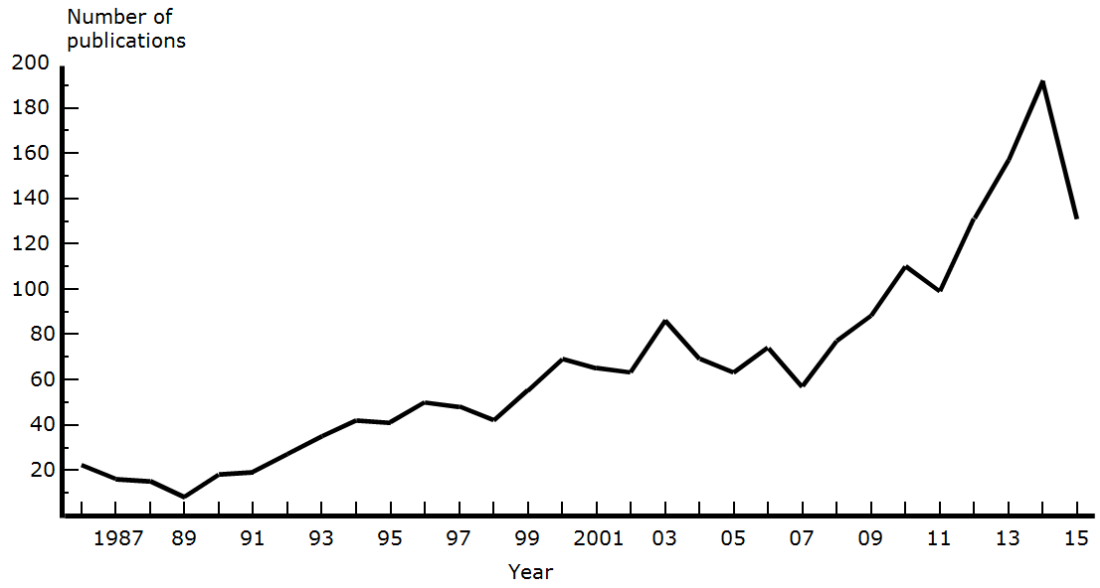

Figure 4. International publications in peer reviewed journals 1986-2015.

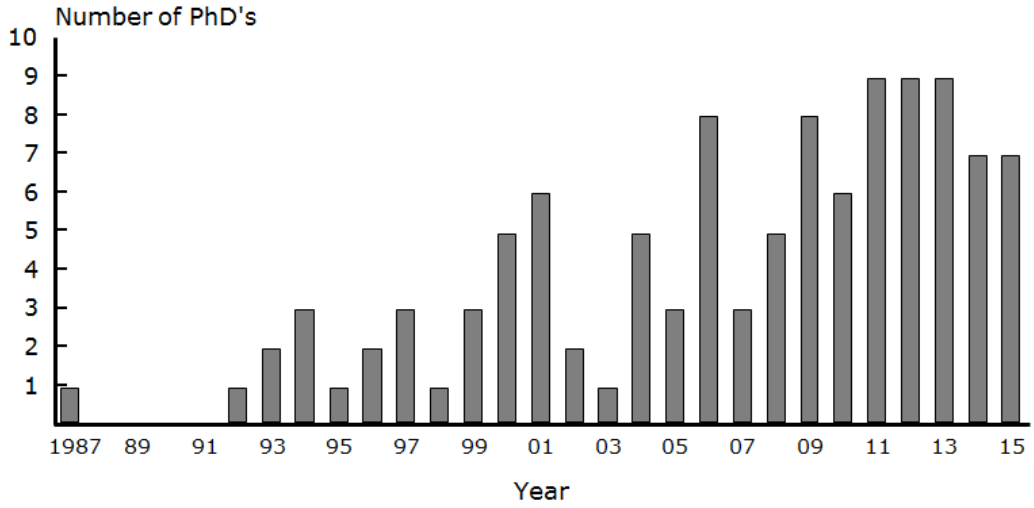

Figure 5. Doctoral dissertations at the Unit 1987-2015.

Staff

Staff at the Unit any time during 2015 and up to today (April 2016)

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.

Yulia Blomstedt. MPH, PhD. Leader for Theme II "Life-course perspective on health interventions" within Umeå Centre for Global Health Research. Also involved in the collaborative programme "Ageing and Living Conditions" at Umeå University. Research on health interventions, self-reported health, health care management. On leave of absence during 2015.

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

lates to individual and structural factors. The PhD-project explores three main areas: 1) Youths and labour market participation in a Swedish setting, 2) Development of health across the life course, and 3) Influence of contextual unemployment

Peter Byass. Professor of Global Health and Director of the Umeå Centre for Global Health Research. Works extensively on health in Southern countries, particularly on issues of measuring health and disease. This involves close collaboration with the Indepth Network, where he chairs the Scientific Advisory Committee, and many of its population surveillance site members. Much of his research is concerned with verbal autopsy and cause of death methods. He directs the WHO Collaborating Centre for Verbal Autopsy, hosted at Umeå University. He is Deputy Editor of Global Health Action and also 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 method. Research centers on activism around gender justice, safe public spaces and health in Sweden and Latin America. Currently a Regional Representative from Europe for the Research Committee 32 "Women in Society", International Sociological Assocation, 2014-2018.

Kjerstin Dahlblom. MPH, PhD. Director of Studies for Umeå International Master Program in Public Health (UISPH). Teaches qualitative methodology and coordinates the thesis course in the MPH program. Thesis project was on sibling caretakers in León, Nicaragua. Research fields of interest: children's rights, children's participation in research, qualitative methods. Retired from her position in the end of 2015.

Andreas Ekholm. Financial coordinator. Responsible for economic planning, budgeting and accounting.

Malin Eriksson. Associate Professor in Public Health with a MA in social work, and a PhD in Public Health. She teaches social theory and qualitative methodology at Master and PhD levels at Umeå International School of Public Health, and also supervises students at Master and PhD levels. Her research concerns social determinants of health, social inequalities in health, social capital and its implications for health promotion, and migration and health among unaccompanied refugee children. She is currently involved in qualitative and quantitative research in Sweden, Ukraine, Tanzania, Indonesia and Vietnam and is the deputy theme leader for theme IV "Gender, Social Inequality, and Health" within Umeå Centre for Global Health Research, and a deputy editor for the international peer-reviewed journal Global Health Action.

Isabel Goicolea. MD, MSc, PhD. Assoc Prof. 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 youth-friendly health care services in Sweden.

Per Gustafsson. PhD in child and adolescent psychiatry, Associate Professor in Public Health. Research interests within social and life course epidemiology and related fields. Teaching at the advanced level as course coordinator in epidemiology, and as teacher mostly in theory and methods at other advanced level courses in epidemiology, social epidemiology and public health, and at PhD level in social epidemiology and philosophy of science.

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.

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 characteristics, coping and mental health among Swedish police officers in relation to deportation of unaccompanied children". Hansson was formerly a police officer, field training officer and instructor at the Basic Training Programme for Police Officers at Umeå University.

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. Dr. Helmersson was formerly a professor in Physics from California State University Long Beach, USA.

Alison Hernandez. PhD. Doctoral studies on Health Service Delivery in Rural Guatemala: Analysis of Strategies to Support the Perfor-

mance 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.

Anna-Karin Hurtig. MD, DrPH, DTM&H, MSc. Professor in public health. Deputy head of Epidemiology and Global Health. 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. Doctoral studies on implementation challenges in health and social care organizations.

Anneli Ivarsson. Head of Unit. Professor in Epidemiology and Public Health Sciences. 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 Strategic Development Office (Unit of Public Health) at 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 Research and Developmental Unit of the County Council.

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 coordinator. 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.

Therese Kardakis. Doctoral student withing the Vinnvård project. Research on implementation of national guidelines.

John Kinsman. Associate Professor in Global Health, and Deputy Director of the Umeå Centre for Global Health Research. Also serves as Section Editor for Global Health Action. Ongoing research and collaborative work: the ABACUS study on Antibiotic access and use, with the INDEPTH Network, in 6 African and Asian countries; health systems research and development in Tigray Region, Ethiopia; development of a health research training programme for universities in Somalia; and emergency preparedness activities against polio and MERS-Coronavirus within Europe, in collaboration with the European Centre for Disease Prevention and Control (ECDC).

Evelina Landstedt. PhD in health sciences, Senior Research Assistant. 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 to 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. PhD in Statistics and B.Sc in Mathematics. 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.

Veronika Lodwika. 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, the central database which handles educational formalities regarding courses, programmes and enrolment

information. Also working with student support and course administration.

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 health economics, particularly issues on how to protect the poor in third world countries 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. Post doc. Her project aims to examine the life-course determinants of not only cardiovascular health, but also of socioeconomic inequity in cardiovascular health in northern Sweden. For this project she will use the longitudinal data from the Västerbotten Intervention Programme (VIP) linked to the SIMSAM Lab, and will examine individual and contextual determinants from childhood to adulthood, of both cardiovascular health and socioeconomic inequity in health in middle-age.

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 and the EU-supported projects DengueTools and INTREC.

Anna Myléus. MD, PhD. Resident physician in Family Medicine. Deputy leader of Theme 1 - Epidemiological transitions, Umeå Centre for Global Health Research. Ongoing research in different epidemiological fields both in Sweden (prevention, clinical aspects, and health & well-being in children with celiac disease) and in low- and middle income countries (health and well-being among older people using the WHO SAGE - Study on Adult Health and Ageing, and health development in Tigray, Ethiopia). Lecturer in epidemiology and qualitative research methods. Also affiliated with Family Medicine, Dept. of Public Health and Clinical Medicine.

Fredinah Namatovu. PhD in Epidemiology and Public Health, currently working as a senior research assistant exploring etiological factors associated with celiac disease development during childhood.

Nawi Ng. MD, MPH, Ph.D. Professor of Epidemiology and Global Health. Research within inequality in health, well-being, disability and mortality among older people in Sweden and low- and middle-income country. His research also focuses on the epidemiology of chronic diseases and their risk factors, and the trajectories of risk factors over time using longitudinal and panel data. Teaching in the Master of Public Health program and the Ph.D. program. Theme leader in the "Epidemiological Transition" research at the Umeå Centre for Global Health Research. Chief Editor of Global Health Action open-access journal.

Maria Nilsson. PhD. 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. Left her position during 2015.

Margareta Norberg. Ass prof, MD, PhD. Medical coordinator of the Västerbotten Intervention Programme (VIP. Research activities are focused on cardiovascular 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.

Katrina Nordyke. R.N., MPH, PhD in Epidemiology and Global Health. Doctoral studies on: "Mass screening for celiac disease. A public health intervention from the perspectives of the participants and society." Left her position during 2015.

Fredrik Norström. PhD in Epidemiology and Public Health. PhLic in Mathematical Statistics. Lecturer in Biostatistics and Health Economics. Research interests are: i) health economic modelling, ii) unemployment and health, iii) quality in scientific publications, iv) development of statistical methodology within the epidemiology and public health fields, and v) celiac disease. Project leader for the research project: "Is better public health worth the price? - A health economic evaluation of increased staffing in home care".

Lennarth Nyström. Associate professor in epidemiology, Senior consultant. Research is focused 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 in Umeå, clinical audits of obstructed labour and fetal distress at the university hospital in Dar es Salaam and risk factors for type 2 diabetes in Java, Indonesia.

Monica Nyström. Associate professor. Organizational behavior and management in health service organizations, with a special interest in leadership, organizational change and development, quality improvement and organizational innovation and learning processes. 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.

Carolina Näslund. Study counselor at the Master Programme in Public Health. Study administrator for the courses given during the 1st year of the programme.

Sandra Pandey Modh. Postdoctoral Fellow with research focus on community perceptions of weather and climate, health and gender in eastern Indonesia, and local adaptations to climate change. Finalised her postdoc during 2015.

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), which focus health and health development over the school-years. Also holds an analyst position at the Public Health Agency of Swedish focusing questions on children and young people's living conditions, and mental health.

Raman Preet. BDS, MSc DPH, MPH. A dentist with masters in dental public health and public health working as Scientific Project Manager responsible for daily execution and management of European Union FP7 projects *INTREC* and *DengueTools*. Primarily, working as the contact between the consortium comprising thirteen organizations and the EC office at Brussels. Additionally, responsible for global health course module given to medical students in semester 5. Also, lecture on global oral health and health care management to public health students. Research interests are in: oral health integration in global health; climate change, gender and global health; supporting scientific exchange platforms in developing countries.

Anni-Maria Pulkki-Brännström. Health economist with a specific focus on the evaluation of complex public health interventions in maternal and child health in low income countries and in Sweden. She teaches health economics on the MPH programme. Currently working on an economic evaluation of the Salut child health promotion programme in Västerbotten,. Also involved in research collaborations with the National University of Rwanda, the UCL Institute for Global Health in the UK, and Mother and Infant Research Activities (MIRA) in Nepal.

Mikkel Quam. Doctoral student, MSc International health. Interested in modeling time dependent infectious disease dynamics governed by environmental drivers including weather and climate. Currently, much of his research is focused on modeling importations and novel emergence of dengue fever based on environmentally sensitive human, vector, and pathogen interactions related to travel, behavior, settlement, and ecological niches. Most recently, leading up to the COP 21 in Paris in December 2015, Quam worked closely with colleagues from Umeå and around the globe to contribute to the "Climate and Health Country Profiles-2015" report of the World Health Organization.

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. Also works at the Grants Office of Umeå University, primarily supporting researchers at the Faculty of Medicine.

Joacim Rocklöv. Dr. Rocklöv an Associate Professor within Epidemiology and Global Health. B.Sc. Mathematics, a M.Sc. in Statistics, and a PhD in Environmental Medicine. He is the scientific leader for a research area within the Umeå Centre for Global Health Research, Umeå University. Dr. Rocklöv´s group research the relationship between climate change and public health. The research group includes around 20 doctoral candidates, post-doctors, and mid-level and senior researchers. Dr. Rocklöv´s research focuses on modelling the relationships between weather, climate and climate change and health, and making predictions of climate sensitive diseases for adaptation and preparedness purposes

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 Sebastian. Medical Doctor with a MSc degree in control of infectious diseases and a Ph.D. degree in environmental epidemiology from the London School of Hygiene and Tropical Medicine. He practiced public health during 12 years among indigenous communities of the Amazon basin of Ecuador. Currently working as Professor in Public Health at the unit of Epidemiology and Global Health, Umeå university teaching different courses (public health, epidemiology, social epidemiology) 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.

Ailiana Santosa. PhD and Physician by training. Working in the Umeå Centre for Global Health Research on epidemiological transition in Sweden and low-and middle income countries. Research focuses on the epidemiological transition in Sweden. Left for a position at Centre for Demographic and Aging Research at Umeå University (CEDAR) during 2015 but is still affiliated to the Unit.

Julia Schröders. M.A., MMedSc (PH), PhD Student. Social scientist with training in medical anthropology as well as global public health and epidemiology. Currently a PhD student at the Umeå Centre for Global Health Research and affiliated to the CEDAR Graduate School for Population Dynamics and Public Policy. She regularly teaches and supervises MPH students at the Umeå International School of Public Health and currently holds the position as Managing Editor for Global Health Action.

Barbara Schumann. MPH, PhD. Researcher with a PhD in epidemiology, and master degrees in psychology and public health. Since 2011 deputy leader of the research group "Climate change and global health" with a research focus of climate and health in Sweden and India. Also interested in communities' vulnerabilities and adaptation to climate change in low and middle income countries, and supervising a PhD student researching weather variability and mortality in India.

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.

Jennifer Stewart Williams. BComm (Econ), Mcomm(Econ), GradDipClinEpi, PhD. Epidemiologist with a background in economics, health inequalities and health services research. She holds a conjoint academic position with the Research Centre for Gender, Health and Ageing, University of Newcastle, Australia and has ongoing collaboration with the Health Statistics and Health Information Systems, World Health Organization, Genève. Her current research focuses on understanding demographic and epidemiological transitions in low- and middle-income countries and facilitating the translation of research into policy. Jenny is Section Editor for Global Health Action and in 2014 was responsible editor for two Special Issues commissioned by WHO.

Lotta Strömsten. PhD. researcher at the Unit within Theme II - A life-course perspective on health interventions. These interventions are aimed at e.g. counteracting risk factors for cardiovascular disease and other adverse health effects due to, for example, obesity, tobacco- and alcohol use. Her research work within UCGHR is focused at developing the methodology for how these different types of health interventions can be evaluated. Teaching in statistics and research methodology.

Linda Sundberg. Doctoral student. Her research focuses on factors influencing knowledge dissemination and uptake for improved preventive- and mental 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. By exploring in what way the two professionals are mentally affected by their work, the research aims to improve knowledge about the forced repatriation process in order to create the most human forced repatriation; both for professionals and children.

Stig Wall. Professor Emeritus of epidemiology and health care research. Epidemiologist with a social science background. Research on epidemiology and international health, environmental 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. MPH and MSc-Nutrition, doctoral student. Also affiliated with the Umeå Centre for Gender Studies (UCGS) Research interests within social determinants of malnutrition, social capital and health, health inequalities, nutritional epidemiology, and nutritional risk factors. Also collaborating with Prof. SV Subramanian from Harvard University studying inter-individual inequalities in Body Mass Index (BMI) as well as variation in BMI over time and place utilizing multilevel statistical analysis.

Lars Weinehall. Senior Professor in Epidemiology and Family Medicine. Was 1985-2007 the coordinator of development and county wide 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). Since 1994 affiliated to Epidemiology and Global Health, was Head of that Division 2007-2013 and Prefect and Head of Dept of Public Health and Clinical Medicine 2012-2014. Has largely devoted his research on analysis of the role of primary care in population-oriented prevention and supervised a number of PhD students, highlighting CVD prevention and health system research, 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 FP7 project, “Innovative tools and strategies for surveillance and control of dengue”, DengueTools.

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

Affiliated staff

Helena Bogseth. Strategist and coordinator at the Registry Centre Northern Sweden. Organizing and taking part in registry based quality improvement work. Cooperates with Epidemiology and Global Health in quality improvement research projects.

Mark Collinson. Senior researcher the MRC/ Wits Rural Public Health and Health Transitions Research Unit, School of Public Health, Faculty of Health Sciences at the University of the Witwatersrand and visiting researcher at the Centre for Global Health Research, Umeå University, Sweden. He has led the INDEPTH Network Working Group in Migration, Urbanisation and Health for ten years.

Lucia D’Ambruoso. PhD. Post-doctoral research fellow. Research interests: maternal health in developing countries, care in obstetric emergencies, critical incident audit, verbal autopsy/social autopsy, community participation, the social determinants of health, social theory, qualitative methods, interdisciplinarity and research ethics. Involved in research in South Africa developing verbal autopsy for routine application.

Berit Edvardsson. MD, PhD, General Practitioner. Doctoral studies on patients with symptoms related to indoor environmental factors. Teaching in medical ethics. Also attached to the unit of Occupational medicine.

Eva Eurenius. PhD, project assistant within the Salut Child Health Intervention Programme in Västerbotten County. Studies within the Salut Programme focus on the health, lifestyle and life situation of pregnant women and their partners, with follow up for them and their child or children throughout the period after birth, during childhood, and into adolescence.

Martin Ferm. Statistician at the Registry Centre Northern Sweden.

Edward Fottrell. BSc MPH PhD. Post-doc research fellow. Research interests in demographic and health surveillance in developing countries, with a particular focus on methodological issues in measuring mortality and deriving causes of death through verbal autopsy, global health transitions, and the issues of health measurement particular to maternal and neonatal health.

Gabriel Granåsen. Statistician at the Registry Centre Northern Sweden.

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 multi-site 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.

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

Annika Nordström. PhD. Senior lecturer in public health. Studies on hazardous alcohol use related to health, social factors and gender. Attached to the Unit of research, education, development and public health at Västerbotten County Council.

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.

Mariano Salazar. Md, Msc, Ph.D. Dr. Salazar has conducted research on sexual and reproductive health, intimate partner violence and masculinity in the Nicaragua setting. Dr. Salazar is also a researcher at the Centre for Demography and Health Research (CIDS) at the Nicaraguan National Autonomous University, León.

Stephen Tollman. (MA MPH MMed PhD), Directs the Medical Research Council/Wits University Rural Public Health and Health Transitions Research Unit (Agincourt) in rural north-east 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.

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. Research manager for projects on 'Health professions, leadership and work organisation'; 'New forms of health promoting masculinities in Latin America'; and 'Swedish healthcare's readiness and governance on violence against women' She is Professor and Scientific Leader at Umeå Centre for Gender Studies, Umeå University.

Research

Umeå Centre for Global Health Research

Umeå Centre for Global Health Research

Research is a very important component of our work at Epidemiology and Global Health (EpiGH), based on a strong tradition of exploring the health needs and risks of particularly disadvantaged groups. In many of our global settings, disadvantage often stems from poverty and lack of adequate services and infrastructures, while in apparently more favoured settings, marginlisation may arise as a consequence of migration, disability or stigmatisation. We strongly believe in research that results in action and changed lives – simply enhancing our academic reputation is not a sufficient reward. Nevertheless we continue to publish widely, both in academically high-impact journals and through channels that maximise our impact on the ground. We are strongly committed to open-access publication, because research results should not only be available in academic circles, but to all stakeholders.

Our ten-year core funding from Forte as a centre of excellence in global health research concludes at the end of 2016, and we are actively seeking further funding to continue our important research activities. Research as a basic tool to underpin health policy is not a luxury; it is much more cost-effective to implement interventions on the basis of sound evidence than to guess what might be needed and risk investing in the wrong choices. New public health challenges arise continuously; 2015 finally saw the conclusion of the Ebola epidemic in West Africa, but also the advent of an as yet unexplained epidemic of Zika infection in South America. We are already planning how we can meaningfully contribute to this latest health crisis. We will continue to respond to people's needs around the world insofar as we are able.

Our research portfolio at the Unit of EpiGH is wide ranging – in scope, methods and geography – and is organised under the umbrella of the Umeå Centre for Global Health Research, a centre of excellence which was established in 2007 core funded by Forte, (the Swedish Research Council for Health, Working Life and Welfare). Of course many other funders including VR (the Swedish Research Council), EU (European Union), Sida (the Swedish International Development Cooperation Agency) and others are heavily involved in our research programmes, together with our international partners.

We arrange our research interests into five themes for the sake of convenience – although there are many cross-theme interactions too, which the Centre always encourages. The five themes outline their programmes in more detail separately. Figure 6 shows how they fit together:

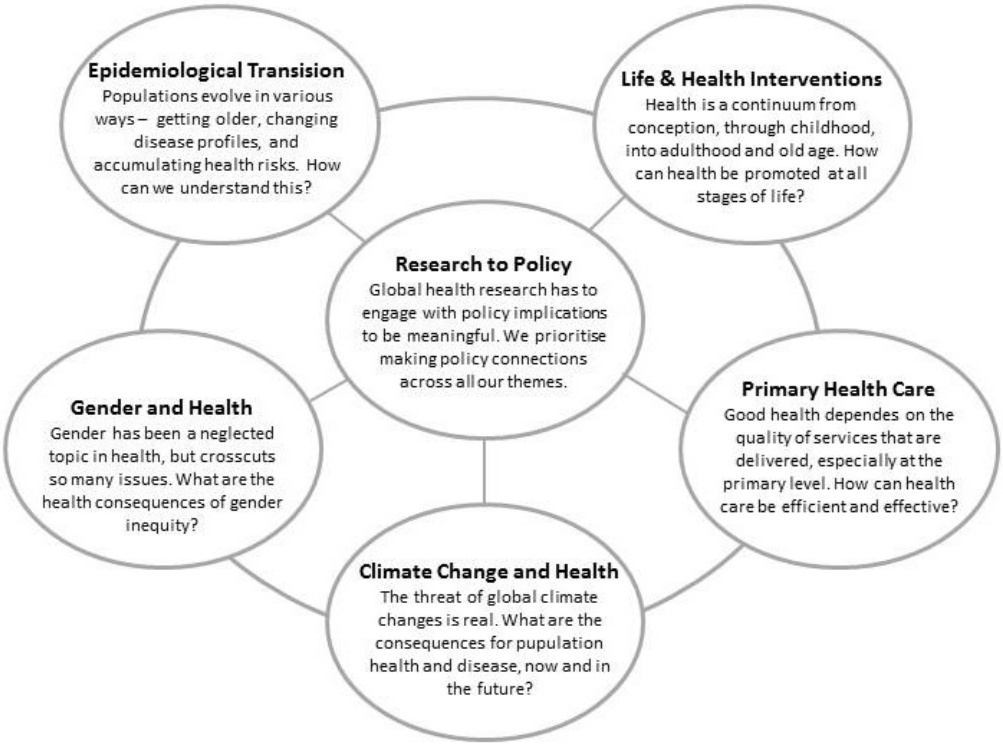

Figure 6. The five research themes

The Centre as a whole has a strong emphasis on moving towards global health equity through research and capacity building. We do this by engaging with relevant issues locally – within Sweden and Scandinavia – as well as with other parts of the world. Through our various collaborations, we have contributed to many successful PhD theses, originating from a wide range of countries (Page 72-76). We also very much see "global health" as inclusive of what happens in our own backyard. You can read more in this report and at our website: www.globalhealthresearch.net

Since the Centre's founding, under the initial leadership of Prof. Stig Wall, we have published over 1,150 scientific articles. Of course it's not just a question of quantity – we are also proud to have published some of our work in the world's leading journals. Richard Horton, editor of *The Lancet*, recently wrote "*The University of Umeå has carved out an utterly distinctive position as an academic centre in global health.*" (Lancet 2013; 381:1260).

Global collaborations are a critical component of our research. We collaborate with a large number of universities and other institutions around the world, many in low- and middle-income countries. In 2012, the World Health Organization appointed us to be the WHO Collaborating Centre for Verbal Autopsy, a specialist technical area in which we have developed a world-leading reputation. We also host the editorial function of Global Health Action, an open-access on-line journal which has published articles on a huge variety of global health topics.

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Theme I: Epidemiological Transitions

Research undertaken in this theme aims to improve the understanding of global epidemiological transitions by using quality register data in high-income countries, as well as population-based data from national health surveys and health and demographic surveillance system (HDSS) sites in low- and middle-income countries. Research within the theme has been based on long-term collaborations with researchers in the

African and Asian HDSS sites within the INDEPTH Network, international bodies such as the World Health Organization (WHO) and Swedish researchers within and outside Umeå University.

Projects

Mortality and verbal autopsy: Researchers within in this theme have taken the leading role in the development of InterVA (www.InterVA.net), which is a computer model for interpreting verbal autopsy interviews in a reliable and consistent manner. The collaboration with the researchers in the INDEPTH Network to analyse cause-specific mortality in 22 HDSS sites in 13 African and Asian countries resulted in a special issue published in the open-access journal, Global Health Action in 2014, with Prof. Peter Byass and Prof. Osman Sankoh (Director of INDEPTH) as the Guest Editors. The special issue was well-received and have 125 citations during 2014-2015. Prof. Byass is also the Director of the WHO Collaborating Centre for Verbal Autopsy, hosted by EpiGH.

Ageing: The implementation of the WHO Study on Adult Health and Ageing (SAGE) in collaboration with the INDEPTH Network has improved understanding of disability, quality of life and well-being among older adults in eight countries in Africa and Asia. The SAGE has also been implemented in China, Ghana, India, Mexico, the Russian Federation and South Africa. Researchers in the theme have utilized SAGE data from these six emerging economies for both research and educational purposes. In 2015, the theme received the network grant from the Swedish FORTE to establish the Network for International Longitudinal Studies on Ageing (NILSA). NILSA is a co-operative international multidisciplinary network to support students, researchers and policy makers working with publicly available longitudinal health and demographic data on ageing populations. During 2016-2018, NILSA will run workshops for data management, analysis, and writing policy briefs; create forums for students using longitudinal data; coordinate joint supervision and evaluation of students across participating universities; and host a website to promote sharing of scientific materials, discussion forums, and networking to similar networks. NILSA is coordinated by Prof. Nawi Ng, Dr. Jennifer Stewart Williams, and Dr. Ailiana Santosa, in collaboration with colleagues from the Department of Social Medicine and Global Health at Lund University. In its operation, NILSA will work closely with the Centre for Demographic and Ageing Research at Umeå University.

The researchers have also conducted ageing research using the rich longitudinal Linnaeus database which combines population register and health survey data on adults for the period 1990-2006. Prof. Ng participated in three successful research grants which utilized the Linnaeus database to: (i) understand the impacts of income inequality and mobility on health in Sweden (supported by the Swedish Research Council, 2013-2015); (ii) test whether Swedish older people experience the compression of morbidity (supported by FORTE, 2014-2019); and (iii) explore the disability patterns over life course in the DISLIFE project (Liveable disabilities: Life courses and opportunity structures across time), which is an ERC Consolidator Grant project (2016-2021) lead by Prof. Lotta Vikström, from the Department of Historical, Philosophical and Religious Studies at Umeå University.

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Theme II: Life-course perspective on health interventions

The research in this theme focuses on the design, implementation and evaluation of health interventions that target different stages of the life course, from the unborn child to old age, taking into account social contexts and gender aspects, in both advantaged and disadvantaged communities. Results to date illustrate the potential of the life-course approach for building evidence on associations between lifestyle and other risk factors at early ages and health outcomes in later life. This approach also enables studies of the contribution of different social, cultural and environmental factors to health and disease. The theme has

developed a methodological interest in how to best design, implement and evaluate complex interventions taking into account the specific complexity of community and population-based interventions as well as the complexity of the context in which these interventions are implemented. More than 20 interventions are being carried out under the umbrella of the theme. Further information is given on *some of them* below.

In 2005 the Västerbotten County Council initiated the Salut Programme, a multisectorial and universal child health promotion intervention prompted by alarming reports of child overweight. The programme aims to reach all parents and children 0-18 years, starting already during pregnancy. A family-centred approach is used and the combination of interventions are integrated within ordinary public services, as described in detail elsewhere [www.vll.se/salut]. Programme development, implementation and dissemination have been carried out stepwise with respect to geography, which facilitates evaluation efforts (Page 27).

Tobacco-free duo is a long-term programme aimed at reducing the use of tobacco amongst children and young people. By giving them a tobacco-free environment while growing up, and support in remaining tobacco free the programme wishes to promote health and reduce tobacco related illness.

The VIP is integrated in primary care routines and has now completed 26 consecutive annual examinations of most Västerbotten inhabitants turning 40, 50 and 60 years. Around 70% of these participate, resulting in comprehensive data from around 7,000 individuals per year. The data base now contains data from 167,100 examinations of 111,780 individuals. Around 44,900 individuals have participated twice and 10,300 have participated at three occasions. A series of papers are published on trends of major risk factors and identified different patterns across sex, age and educational groups. The first results from ongoing evaluations of the effect of the VIP in terms of mortality were published December 2015 and showed almost 10% reduction of SMR (Standardized mortality rate) in the target population, i.e. participants and non-participants taken together, in comparison with corresponding Swedish population adjusted for time, age, sex and education. Modified VIP community intervention models are being implemented in Indonesia and Vietnam; and weight maintenance programmes in Sweden and the US are being compared. A new addition is the VIP-VIZA project. This is a large RCT that is embedded in routine care and performed in collaboration with several units within the Department of public health and clinical medicine (EpiGH, Medicine, and Family medicine) and Departments of Radiation sciences and Psychology. More info is given on page 29 and on www.clinicaltrials.gov; identifier NCT01849575).

Coeliac disease (CD), also called gluten intolerance, has emerged as a global public health problem affecting all ages. We currently host the only prospective incidence child CD register with nationwide coverage. This has revealed that Sweden has experienced a unique epidemic of CD explained partly by changes over time in infant feeding. Within a CD screening study 12 year-olds (n=18,000) from birth cohorts that differ with respect to infant feeding have been approached. We have revealed an unexpectedly high CD prevalence in both cohorts, however; significantly lower in the cohort introduced to gluten in small amounts while still being breast-fed, which presently is the Swedish national recommendation.

We study issues of sustainability in organizational learning, improvement, development, innovation and implementation within health and social care institutions in research projects initiated with funding by the Vinnvård Programme and Vinnova. The research groups are multidisciplinary and involve the SOLIID research network, with members also from Karolinska Institutet and Luleå University of Technology. One of the projects follows the implementation process of development and learning strategies in specialized medical care and within the Salut Programme, both in the Västerbotten county. These and other studies include issues on how to facilitate the learning and implementation processes on core organizational level and enhance lifestyle changes among patients and changes in practices on behalf of professionals.

The potential impact of the research is a better knowledge on how to make innovation, implementation and organizational learning reachable and sustainable for every unique context. These plans have been developed and carried out in synergy with the other UCGHR themes and with the Umeå SIMSAM Lab and its research programme "A register-based research programme connecting childhood with lifelong health and welfare (Page 26).

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Theme III: Strengthening primary health care: the roles of rights, ethics and economic analyses

The research in this theme is designed to inform key decision-makers involved in actions and interventions to strengthen primary health care in poor and rich countries, through projects stemming from integrated rights-based approaches and economic analyses. Our research is mainly operational using multidisciplinary methods and underpinned by the values and principles expressed in primary health care focusing on the functions of health systems as articulated by WHO. The research group is interdisciplinary and includes doctoral students based in India, Iran, Rwanda, Bolivia, Ethiopia, Zambia, Tanzania, South Africa, Uganda, Germany, Oman, Spain and Sweden. During 2015 we moved forward in our new Sida supported research training partnership programmes with the National University of Rwanda and Universidad Mayor de San Simon, Cochabamba Bolivia and launched the next 5-year period of collaboration with Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania. These training partnerships focus on health systems and policy research.

Our group work with four interrelated research areas i) Local governance and participation; ii) Priority setting and fair procedures; iii) Financing: iv) Service delivery and human resources.

We would like to give some examples of our activities during 2015; the importance of strengthening local governance and management structures for quality of service delivery in rural areas have been shown in studies from Tanzania, Zambia and Uganda. The role of financial incentives for increasing institutional delivery has been the focus of a major study in India. Auxiliary nurses, health extension workers, community health assistant are utilized as front-line health workers in Guatemala, Ethiopia and Zambia providing primary care in rural communities. During the year we have conducted multiple case studies to explore their role in strengthening local health systems and how they can be supported in their multiple tasks.

In Europe we have participated in evaluations of the preparedness for emergent infectious diseases. The effects of the economic crisis on health and access to health services in Spain have been another topic.

In Sweden we have embarked on studies evaluating the youth friendliness of Youth clinics as well as social inequalities in health in the Northern region. Collaborative work with Umeå Center for Gender Studies investigates how citizen groups mobilize around safe public spaces and how they address gender and race/ethnicity through their activism.

We have also initiated work on how to construct "Capability-adjusted life-years (CALYs)" for evaluating public health and social interventions.

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Theme IV – Gender and Health

Health conditions in the world are strongly gendered and it is vital to include both women and men in global health research, as well as questions on various forms of sexual orientation. Gender is therefore one of the most important analytical categories (or variables) in research about human beings and their social conditions. The overall aim of our on-going and planned research is to generate new knowledge on

gender (inequalities) and health and to support health development. The theme uses empirical data from a variety of sources. One of our basic aims is to develop research designs that combine qualitative and quantitative approaches. During 2015 the theme has continued publishing work on Gender and Health, and has specifically finalized a special issue on Gender and Health in Global Health Action with Ann Öhman, Isabel Goicolea and Malin Ericsson as guest editors. The papers included in this cluster deal with topics such as Sexual and reproductive health and rights; Violence against women (VAW) or intimate partner violence (IPV); Men, masculinities and health; Epidemiological perspectives on gender and health; Access to health services from a gender perspective; and Health policy. We also initiated a new special issue about "Gender and health inequalities – intersections with other axes of oppression" in the same journal, with Carmen Vives Cases at Alicante University in Spain invited as an additional guest editor. This special issue will be finalized in the end of 2016.

During 2015, we invited Sarah Nettleton from York University as a visiting professor for one week and arranged open seminars and lectures as well as a one-day workshop on "Gender and Health". We have also initiated and successfully received funding for new research projects about social inequalities in child health, youth health clinics and Swedish health services' readiness and governance on violence against women. We have presented our research at several research conferences, for example at The 9th European Feminist Research Conference, held in Finland. Research collaboration with several institutions around the world continued, among them Alicante University in Spain and CIDS, UNAN-León in Nicaragua. Anna-Britt Coe and Evelina Landstedt were granted co-financing for a PhD position by the Graduate School of Gender Studies at Umeå University. This is an example of our on-going collaboration with Umeå Centre for Gender Studies.

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Theme V: Climate change and global health

The work on Climate Change and Health within The Centre for Global Health Research at Umeå University is carried out by a core team with both internal collaboration within the Centre and with researchers at other parts of Umeå University, as well as with external regional, national and international partners. We conduct research on health impacts, adaptation and mitigation of climate change globally. The overall aim is to i) strengthen the knowledge of how weather, climate and climate change affect the health of populations in the world, and to ii) build capacity, competence and knowledge in order to mitigate and adapt to climate-induced risks. The research theme is also involved in national and international collaborations and advocacy for policies.

Countries where we are working in are Sweden, Kenya, Indonesia, India, Sri Lanka, Costa Rica, Vietnam and USA, among others. Some projects are affiliated with the INDEPTH network whose databases we use to assess health impacts of weather.

A general description of the theme´s research and teaching is provided in the figure 7 below.

Projects

In 2015, the theme involved five researchers, twelve doctoral students and one project assistant from many different countries, in a large range of research projects and tasks. A list of all projects can be found on our web-site www.climateandhealth.net.

Involvement in international initiatives

Theme members contributed to the Lancet Commission "Health and climate change: policy responses to protect public health" published in June 2015. Members also contributed to the WHO country profiles on climate change impacts, adaptation and mitigation.

Research projects

- Environmental drivers of infectious diseases (funded by ECDC)
- DengueTools - novel tools and strategies to control dengue fever (funded by EU FP 7) (Page 27)

- Climate variability and mortality in Sweden before, during and after industrialization
- Household Preferences on lifestyles transformation in low greenhouse gas Emission societies – HOPE. Studying carbon emissions from households in Umeå, Sweden (JPI - a European Collaboration, the Swedish WP funded by Formas)
- Long-term outcomes of nephropathia epidemica in northern Sweden
- Adaptation to climate change in rural Indonesia from a gender perspective
- Research Links project: evidence for impacts of climate change and adaptation needs in Vietnam and Sri Lanka (funded by the Swedish Research Council)
- Research Links project: Climate change and health – a platform for research, policy and practice in Central America (funded by SSEESS)
- Research Links project: Public health preparedness to extreme weather events in Indian cities (funded by SSEESS)
- Public Health Emergency Preparedness activities in Europe (funded by ECDC)
- Dengue risk communication in a local community – understanding knowledge, attitudes and practice to improve action (funded by ICLD)

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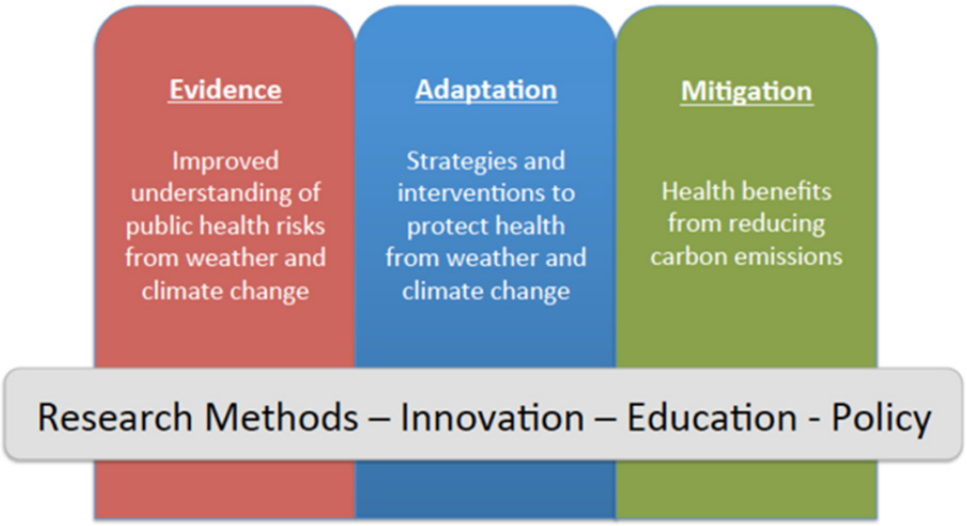

Figure 7. Core research elements

Showcase of selected research

Umeå SIMSAM Lab

The Umeå SIMSAM Lab is established to perform high quality, interdisciplinary microdata research on childhood and its relationship with lifelong health and welfare, focusing on areas of societal importance. The Lab has an exceptional microdata infrastructure combining social and medical data, innovative methodology, and awareness of the need to make research results available for policy development.

The Steering group has representation from the following disciplines: Epidemiology and Global Health, Geography and Economic History, Sociology and Statistics. We strive to become a nationally and internationally renowned centre of excellence on microdata research on childhood for lifelong health and welfare combining social and medical sciences. Linking data from several register sources enables analyses which in a unique way will elucidate the importance of childhood for the health and welfare of individuals in a life course and multigeneration perspective.

We apply an interdisciplinary approach to register-based research bringing together scientists from various parts of the social and medical sciences. In addition, we have a wide-spread net of collaborators both nationally and internationally. More information can be found on our webpage: http://www.org.umu.se/simsam/

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INTREC – INDEPTH Training & Research Centres of Excellence

INTREC was funded under the Health theme of the Seventh Framework Programme of the European Community. The work was conducted by a Consortium of five universities in Sweden, Germany, Netherlands, Indonesia and USA and by one research network of demographic surveillance sites in low- and middle-income countries (LMICs) with its headquarter in Ghana (INDEPTH). Umeå University was the consortium coordinator.

The WHO's Commission on Social Determinants of Health (SDH) argued that the dramatic differences in health status between and within countries are intimately linked with degrees of social disadvantage. These differences are unjust and avoidable, and it is the responsibility of governments, researchers, and civil society to reduce them. Part of this work requires the production of setting-specific, timely, and relevant evidence on the relationship between social determinants of health and health outcomes, and yet this information is limited.

INTREC was established with dual aims: i) Providing SDH-related training for INDEPTH researchers, thereby allowing the production of evidence on associations between SDH and health outcomes; and ii) Enabling the sharing of this information through facilitating links between researchers and decision makers, and by ensuring that research findings are presented to decision makers in an actionable, policy-relevant manner.

The project finished in June 2015. Having conducted an extensive needs assessment exercise in the target countries (Ghana, South Africa, Tanzania; Indonesia, Viet Nam, Bangladesh, and India), a total of 22 INDEPTH researchers participated in the online and face-to-face training. Based in specially established training centres in Ghana and Indonesia, the training included working with data from participants' own research sites, and then preparing policy briefs and disseminating the findings to relevant national-level decision makers. We conducted a comprehensive evaluation of the project, through which we identified key lessons for future 'on-the-job' training programmes on research in to the social determinants of health.

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DengueTools - Comprehensive control of Dengue fever under changing climatic conditions

The DengueTools project is funded by the European Commission under the Seventh Framework Programme. The project is led by Prof. Annelies Wilder Smith who is an expert on Dengue Fever, and EpiGH is the coordinating partner. DengueTools aims to expand knowledge on Dengue and develop tools for monitoring and control of the disease. It endeavors to achieve better diagnosis, surveillance, prediction and/or prevention of the spread of Dengue fever to previously uninfected regions (including Europe) in the context of climate change. The project started in Sept. 2011 and will conclude in April, 2016.

DengueTools is run by a consortium of 14 partners from Europe, Asia and South America. The work plan has 3 research areas:

- Research area 1 focuses on developing new tools for the surveillance of dengue fever.
- Research area 2 carries out laboratory and community based studies to develop new tools for the prevention of dengue fever in children.
- Research area 3 examines the risk of the global spread of dengue fever.

For more information, visit:
www.denguetools.net

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The Salut Programme - A Child-Health-Promoting Intervention Programme in Västerbotten

In 2005 the Västerbotten County Council initiated the Salut Programme, a multi-sectorial and universal child health promotion intervention prompted by alarming reports of child overweight. The programme aims to reach all parents and children 0-18 years, starting already during pregnancy, combining epidemiological surveillance and health promotion. Programme development, implementation and dissemination have been carried out stepwise with respect to geography, which facilitates evaluation efforts. A family-centred approach is used and the combination of interventions are integrated within ordinary public services, as described in detail elsewhere [www.vll.se/salut]. Lifestyle, health and living conditions are prospectively monitored using questionnaires and routine health check-ups. The Programme is stepwise becoming a quite unique infrastructure for research on children and their lives. The Salut Programme's main purpose is to improve the health of all children in Västerbotten, but also to increase knowledge on children's health, lifestyle and living conditions. The Programme constitutes a key element in the health authority's vision to have the healthiest population in the world by 2020. Part of it is integrated into the Umeå SIMSAM Lab (page 26).

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Public Health Emergency Preparedness activities in Europe

In 2014, EpiGH was contracted by the European Centre for Disease Prevention and Control (ECDC) to work over a four-year period (2014-2017) on a project entitled "Public Health Emergency Preparedness activities in support of EU/EEA, enlargement and European Neighbourhood Policy countries". ECDC is an agency within the European Union, which aims to strengthen Europe's protection against infectious diseases. Their mission is to identify, assess and communicate the threat to human health posed by infectious diseases. To do this the ECDC cooperates with authorities, organizations and experts across Europe to strengthen and develop surveillance and early warning systems for infections.

EpiGH has responsibility for two 'Lots' within this project; and we have been

working in collaboration with colleagues from the PrEPArE Consortium (Public Health Emergency Preparedness Activities for Europe) from Umeå University. 'PrEPArE' is a multi-disciplinary consortium of scientists from EpiGH, the Centre for Research and Development in Disaster Medicine, the Department of Clinical Microbiology, and the European CBRNE Center.

The first Lot, led by Associate Professor John Kinsman, involves conducting case studies on cross-border and inter-sectorial preparedness for public health emergencies. The case study conducted in 2015 focused on polio, within the context of WHO's declaration in 2014 that the continued international spread of the disease constitutes a Public Health Emergency of International Concern (PHEIC). Two EU Member States took part in the case study: Poland and Cyprus. Poland is neighbouring to the region of Ukraine where an outbreak of circulating vaccine-derived poliovirus was identified in mid-2015; and Cyprus is currently receiving migrants from North Africa and the Middle East, some of whom may not have been vaccinated against polio. Poland and Cyprus are both considered by the European Regional Certification Commission for Poliomyelitis Eradication (RCC) to be at 'intermediate risk' of experiencing a polio outbreak. The overall objective of this case study was to support these two EU member states in updating their polio preparedness planning, and in complying with the RCC's reporting requirements. Interviews were held with high level informants in the health and non-health sectors (such as border control, refugee centres, and civil protection etc.), focusing on five thematic areas: surveillance, vaccination, external communication and social mobilisation, national polio preparedness plans, and cross-border issues.

The second Lot, led by Dr Maria Nilsson, involves organizing and facilitating preparedness good-practice workshops with EU Member States. These are attended by the ECDC National Focal Points for preparedness and response from all EU Member States, along with invited experts, observers from WHO, and the European Commission. In 2014 a two-day meeting was organised at the ECDC premises in Stockholm discussing current practices for preparedness for infectious diseases. Much of the discussion was focused on MERS-Coronavirus, but the ongoing Ebola crisis became an additional and very important topic of discussion. In 2015 the planning started for the next meeting that will be arranged in 2016.

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Visualization of asymptomatic atherosclerotic disease for optimum cardiovascular prevention. A population based RCT within the VIP – VIPVIZA

VIPVIZA is a pragmatic randomized intervention trial that is nested within ordinary health care and a collaboration project within the Departments of Public health and clinical medicine, Radiation Sciences, Medical Biosciences and Psychology together with Primary care, Heart centre and the Clinical Research centre in Västerbotten County council.

Cardiovascular diseases (CVD) are still the number one cause of premature death in both men and women, despite the fact that around 90% are caused by modifiable factors. Also, there is still a social gap with higher CVD morbidity and mortality rates among socioeconomically underprivileged groups. Prevention of CVD fails, largely due to non-compliance among health care providers and patients to recommended preventive measures. Visualization of silent atherosclerosis has the potential to optimize the communication of CVD risk, lead to appropriate risk perception irrespective of for example educational level, enhanced motivation for prevention in all groups and optimum compliance among doctors to clinical guidelines and adherence among patients to life style change and medications for control of risk factors. Taken together, results are expected to contribute to reduction of premature CVD morbidity and mortality and reduced inequity in health.

In this intervention study, 3200 participants in the Västerbotten Intervention Programme, a county wide cardiovascular

disease (CVD) screening and prevention program, undergo two carotid ultrasonography exams, three years apart. Ultrasound examinations are performed with a portable machine and a user-friendly standardized methodology is applied, that can be used within primary care and at long distances from specialized care. Half of participants and their doctors receive image-based information with graphs in colour about the silent atherosclerosis in terms of vascular age and formation of plaques. The two groups will be compared regarding changes of conventional risk factors for CVD and quality of life, development of atherosclerosis and, on a long-term basis, regarding CV morbidity and mortality. Barriers and facilitators for prevention will be evaluated with qualitative and quantitative methods and statistical modelling methods will be used for evaluation of determinants of behavioural change. The results are expected to contribute to development of new methods for CVD prevention that are valid for direct implementation in other health care settings.

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A messaging strategy to promote Ebola treatment-seeking behaviour in Sierra Leone

This rapid, 3-month study conducted between January and April 2015 developed a set of Ebola messages based on the findings of qualitative research conducted in 'hotspot' areas of rural and urban Sierra Leone. The messages responded directly to community concerns about various aspects of the Ebola response and about Ebola itself.

Over the course of the West African Ebola epidemic, many people avoided going for treatment. One reason for this was a lack of trust in the health system, and, with sick people being cared for at home, the result was the continued spread of the virus through the community.

This project took an applied anthropological approach to developing messages designed to encourage people in Sierra Leone, who thought that they or members of their family may have Ebola, to go for treatment. The empirical foundation for the messaging strategy that we developed was in-depth interviews with religious and traditional leaders, as well as medical staff; and focus group discussions with ordinary people in the affected areas. Based on discussion with senior staff at the National Ebola Response Centre (NERC), our work followed two core principles: (i) It is critically important that the messenger is trusted if the message is to have any validity; and (ii) Messages must reflect the constraints of the infrastructure that is available. In other words, it is important not to promise something in a message that cannot be delivered by the available resources.

The project was conducted by a consortium including the Epidemiology and Global Health Unit, Umeå University, Sweden; the Medical Research Centre (MRC), Sierra Leone; and the Centre for Health and Research Training, Sierra Leone (CHaRT-SL). Financial support was provided by Research for Health in Humanitarian Crises (R2HC), as part of their £8 million Emergency Ebola Health Research Call, funded equally by the Wellcome Trust and DFID.

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Figure 8. Research collaborating countries during 2015.

Global Health Action

When we launched Global Health Action in 2008, we had a mission to 'contribute to fuelling 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. We also lived up to our ambition to build and strengthen research capacity for young researchers from low- and middle-income countries through our mentorship program.

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.

Our strategy towards this is to establish and sustain our role as the first choice for submission by young researchers from low- and middle-income countries, to offer scientific capacity building through mentorship, a fair and swift peer-review resulting in high-impact publications and to publish a number of papers on action and interventions suggesting and demonstrating global health impact.

Having successfully passed its seventh anniversary the journal is in as good health as ever. The journal's impact factor increased from 1.62 in 2014 to 1.93 in 2015. In 2015, we received 434 submissions and published 177 articles. During 2008–2015, GHA has published 824 articles, some of which appeared in the 29 special issues. The special issues covered different global health topics, among which are 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, etc.

A total of 6894 citations have originated from papers published in GHA during 2008-2015, with an average of 8.4 cites per paper and 862 citations per year. GHA's h-index is 34 by Feb 2015 (based on Google Scholar Citation).

Under the leadership of Prof. Stig Wall, the founding editor of Global Health Action, the journal has established itself as "a sustainable disseminator of health information of global reach and significance". As of January 2015, Prof. Stig Wall stepped down as Chief Editor and passed the baton over to Prof. Nawi Ng. Two deputy editors, Prof. Peter Byass and Dr. Malin Eriksson, as well as a managing editor, Julia Schröders, assist Dr. Ng in the core editorial team. In addition there are a number of editors in the editorial team and the international editorial board.

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Figure 9. Word clouds of titles of papers published in Global Health Action during 2008-2015.

Table 3. Unit seminars during 2015

January	**Kjerstin Dahlblom & Kristina Lindvall** To supervise students writing MPH thesis – role and responsibilities of supervisors
	Karl-Erik Renhorn Forte outline writing seminar in preparation for the next Forte deadline 29/1, 2015
	Eva Randell – *Midterm seminar* Adolescent boys' perceptions and experiences of health, emotion management, masculinity and social status
	Junia Joffer – *Midterm seminar* Health from an adolescent perspective
	Klara Johansson & Ziad El-Khatib Young MSM in Sweden: self-reported general health, risk factors and knowledge of STI (early stages of analyses)
February	**Andrea Mannberg** (*Economics*) Risky Sex in a Risky World"
	Kamila Al-Alawi - *PhD seminar* Exploring the feasibility of interdisciplinary teams in the management of diabetes at primary health care level in Oman
March	**Miguel San Sebastian** The post-15 development agenda. Is Gandhi´s thought relevant today?
	Medical library – DiVa publication database
	Mikkel Quam – *Midterm seminar* Modeling Potential Air-Travel Related Introduction & Emergence of Dengue
April	**Per Nordin** – *Midterm seminar* With a claim for effectiveness. Health interventions in context
	Nitin Gangane - *Midterm seminar* Breast cancer in India: Knowledge, attitude, practices and delays in presentation and management
	Tesfay Gebrehiwet - *Dissertation* No women should die while giving life. Does the Health Extension Program improve access to maternal health services in Tigray, Ethiopia?
May	**Yulia Blomstedt** Register-based research: EpiGH & RCN
	Joseph Zulu – *Dissertation* Integration of national community-based health worker programmes in health systems. Lessons learned from Zambia and other low and middle income countries.
	Anna Westerlund – *PhD seminar* Handling important conditions for change during initial implementation of interventions to develop work practices in healthcare
	Phan Minh Trang – *Midterm seminar* Weather and weather extremes in association to mental health among adults in Vietnam
	Anna-Britt Coe Future trends in global health financing: implications for EPIGH
June	**Ailiana Santosa** – *Pre-dissertation* Where are the world's disease patterns heading? The challenges of epidemiological transition
	Johanna Sundqvist – *Midterm seminar* Social workers' and police officers' mental health in relation to the repatriation work of unaccompanied asylum-seeking refugee children. A comparative study.
	Maquines Odhiambo Sewe – *Midterm seminar* Developing weather based malaria early warning system for KEMRI/CDC HDSS in Western Kenya
	Ailiana Santosa – *Dissertation* Where are the world's disease patterns heading? The challenges of epidemiological transition

September	**Thaddaeus Egondi** – *Pre-Dissertation* Making visible the invisible. Health risks from environmental exposures among socially deprived populations of Nairobi, Kenya
	Brian Williams An introduction to Bayesian networks - engaging decisionmakers
	Thaddaeus Egondi – *Dissertation* Making visible the invisible. Health risks from environmental exposures among socially deprived populations of Nairobi, Kenya
	Masoud Vaezghasemi – *Midterm seminar* The emergence of dual burden of malnutrition in Indonesia: The role of gender and social capital
October	**Paul Mee –** *Dissertation* HIV-related mortality in the era of anti-retroviral therapy in sub-Saharan Africa: An assessment of changing spatial patterns of mortality, risk factors for HIV and healthcare usage during the public roll out of ART in a rural South African community
	Kaaren Mathias – *Midterm seminar* Who is in? Who is out? Who is sad? A presentation on experiences of inclusion and exclusion of people with mental illness and on the prevalence and epidemiology of depression in North India
	Lars Lindholm What kind of public health research does the society need?
	Fredinah Namatovu – *Pre-Dissertation* The multifactorial etiology of celiac disease explored by combining several national registers
	Jonas Hansson – *Midterm seminar* Psychosocial job characteristics, coping and general mental health in relation to deportation work of unaccompanied children
	Setareh Forouzan – *Dissertation* Assessing responsiveness in the mental health care system: the case of Tehran
	Hagos Godefay – *Midterm seminar* Supporting the development of evidence-based policies aimed at reducing maternal mortality in Tigray region, Ethiopia
	Lars Weinehall Inventory of research, collaboration and application profiles in the five CGH Themes
November	**Fredinah Namatovu** – *Dissertation* The multifactorial etiology of celiac disease explored by combining several national registers
	Dickson Mkoka - *Pre-dissertation* Governance and decentralization barriers for delivery of maternal health care. The case of implementation and delivery of Emergency Obstetric Care in a rural district, Tanzania
	Jing Helmersson – *Midterm seminar* The development of a dynamic epidemiological weather driven model of dengue
	Anna Brydsten – *Midterm seminar* Health consequences of youth unemployment: a life course perspective
	Lennart Nygren Twenty child welfare cases - a case file and interview study
December	**Anna Westerlund** – *Midterm seminar* Managing conditions for change when initiating interventions to change work practices in health care
	Berit Edvardsson – *Dissertation* "Det är inte mig det är fel på, det är huset" En studie av prognosfaktorer och bemötande med fokus på sjuka hus- syndromet
	Bharat Randive – *Pre-dissertation* Study of conditional cash transfer programme Janani Suraksha Yojana for promotion of institutional births. Studies from selected provinces of India
	Marie Ernestad, et al FoU Välfärd – en arena för möten mellan forskning och praktik

Medical Faculty - The "Equity in health" theme

During 2015, Theme Equity in Health held eight seminars featuring speakers from each of the three participating departments: Nursing, Community Medicine and Rehabilitation, and Epidemiology and Global Health. Attendance ranged from 10-40 participants. Together with the Umeå International Network on Social Medicine, Theme Equity in Health organized the second Annual Symposium on Social Inequity in Health. This daylong event featured Prof. Bo Burström, Department of Public Health Sciences, Karolinska Institute as well as presentations by five PhD candidates. There were approximately 25 participants.

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Table 4. Theme Equity in Health Seminars 2015.

January	Masculinity construction, gender and health in male dominated occupations" **Susanne Backteman Erlanson**, Adjunct Lecturer, Department of Nursing
February	"Measuring health inequalities: value free or value-laden?" **Miguel San Sebastian**, Associate Professor, Epidemiology and Global Health Unit.
March	Reasons why people with dementia should not be excluded from rehabilitation" **Erik Rosendahl**, Associated Professor, Department of Community Medicine and Rehabilitation.
April	Sexual and reproductive health and rights from a gender perspective" **Kerstin Edin & Monica Christianson,** Senior Lecturers, Department of Nursing.
May	"Social inequalities in health – explanatory pathways" **Malin Eriksson**, Senior Lecturer, Epidemiology and Global Health Unit.
September	"The Unhealthiness of the Gender Equal Girl" Maria Strömbäck, Psychiatric Clinic, Norrland University Hospital and **Bodil Formark**, Coordinator, Nordic Network for Girlhood Studies.
October	"2nd Annual Symposium on Social Inequity in Health: Choice of Care in Sweden and Implications for Health Equity" Prof. **Bo Burström,** Department of Public Health Sciences, Karolinska Institute.
November	"Nurse-led 'Family Health Conversations' with Families with an Older Family Member Receiving Care" **Karin Sundin**, Associate Professor; **Åsa Dorell and Susanna Pusa**, PhD Candidates, Department of Nursing
December	"Can Equity be Considered in Health Economic Analysis?" **Lars Lindholm**, Professor, Epidemiology and Global Health Unit.

Education

Students and staff on the Graduation Ceremony at Aula Nordica, May 2015

Umeå International School of Public Health (UISPH)

An integral component of the development of the international collaborations has been the International Public Health training, starting from ad hoc training courses and workshops that formed a springboard for the research projects. What started as short courses in epidemiological methods has grown into full master programmes in public health taught in English and with major recruitment from abroad, mainly from low and middle income countries. Since 2001, these activities have had the status of an international school within the university. With their strong research orientation, the programmes have retained their role as channels into research training.

The first courses in public health in Umeå were given in 1986. Five years later, in 1991, a one-year master programme in public health was started. Its structure remained basically the same until 2007, although it was continuously revised in content. In 2007 there was a large change of the programme into a two-year programme focusing on epidemiology, health systems and social conditions and health.

A decision on tuition fees taken by the Swedish Parliament led to a drop of incoming students in the fall of 2011 since non-European students now have to pay tuition fees. To meet this situation we therefore started to offer both a one- year and a two-year programme. This year we have further developed our range of education. There is a large need for competence in health economics. Therefore we have, in collaboration with Umeå School of Business and Economics, started a new master programme in public health with a specialization in health economics. Health economists analyse resource use, health consequences, and how best to use resources to maximise health gains as well as analyse organizational and system change, and health financing.

To ensure flexibility for students, the first year in the three programmes is identical so

that the second year builds on the first year courses. The programmes include courses on global health conditions, health systems, the connections between social conditions and health and methods to carry out public health work. The programmes provide public health practitioners and researchers with the skills required to understand, and ultimately help improve and maintain the health status of the population. This academic year we have 20 new one-year students, 16 new two-year students and 13 new students in the health economic programme. We further have 23 students in their second year. Our students originate from Sweden, Europe and countries across the globe; the composition of students makes our programmes unique and is perceived as one of the strengths by our students.

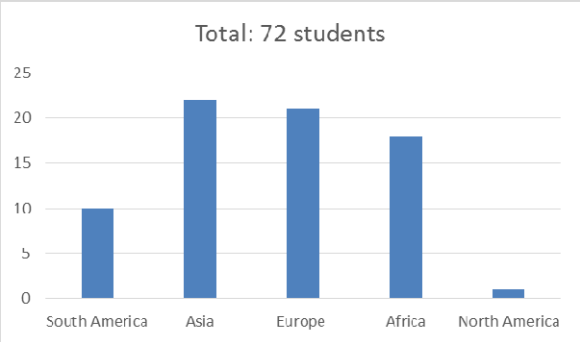

Figure 10. Master students 2015/16

Since the introduction of tuition fees, scholarships from Swedish Institute and other funders have been instrumental for the recruitment of students outside EU. Unfortunately, a dramatic reduction in numbers of scholarships was decided 2014, resulting in no scholarships at all for 2015/16. It is very unfortunate for the continuity in running the Master programmes that we have no control over the intake of students from low- and middle income countries through these decisions and we hope for more long-term solutions. The strength of our programmes has always been the mix of students with so many different experiences. Other scholarships covering the tuition fees have also been introduced, opening up the opportunities for these students to attend our programmes. So, for example, we have been awarded funds from the Erling-Persson Family Foundation making it possible for us to offer scholarships for students from outside EU for a number of years.

Master programme courses 2016

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
Methods and tools 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

Two students were selected to participate in the conference for students in the fields of global health throughout Europe. It was organized by students of the Master of Global Health in Barcelona with the aim to create a network of students and young professionals in the field of global health and to provide a platform for the exchange of knowledge, experiences and ideas on global health issues.

Penelope Hill and Isabelle Hempler participated in the Global Health Next Generation Network Conference "Ensure the Voice" – Barcelona 2015

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Korpen Veteranerna Västerbotten have made a generous donation so that, for a number of years, students can be awarded minor scholarships for high quality theses.

Nada Amroussia, Huzeifa A'Weesha and Septi Lestari were awarded scholarships from Korpen Veteranerna Västerbotten for high quality master theses

Other teaching activities

All courses within the master programmes can be taken as single subject courses by students not wishing to take the whole programme. Priority is given to those studying for the degree, but a number of non-programme students are always accepted as well. This is especially true with regards to research method oriented courses, such as *Biostatistics, Epidemiology* and *Qualitative methods,* and subject courses in e.g. *Health Systems and Health economic evaluation methods*, as we see it as essential that these subjects are accessible to research students in adjoining disciplines.

Master seminars, May 2015

International dinner May 2015

Figure 11. Home country of public health programme students 1993-2015

Since 2002 the Unit has been responsible for teaching the medical students community medicine, and since 2005, also global health; a course that was introduced by student request. The lectures in community health have been moved from semester 10 to semester 5, as a consequence of the new U2007 curriculum. The separate week in global health has also, due to the same reason, been moved from semester 9 to semester 5 so almost all public health lectures are given during this semester under the acronym of "Games", interpreted as Global health, Occupational and Environmental Medicine, Medical Law, Epidemiology and Social Medicine. The teaching is accomplished together with the Unit of occupational and environmental medicine and the department of law.

In addition to the Master Programmes in Public Health, and medical students, members of the Unit are also teaching in several other programmes. Teaching is carried out on all academic levels, from basic- to PhD-level. During the first semester of the 'Biomedical programme' (180 credits), our unit is responsible for a 7.5-credit course in *Epidemiology and biostatistics*. Examples of departments where the members of the Unit are teaching (on basic to master level) are the Departments of Nursing, Community Medicine and Rehabilitation, Ontology and Food and Nutrition. Teaching is also being carried out at Umeå School of Education and at the *Centre for Teaching and Learning* (UPL) in the central course for supervisors at Umeå University.

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Research training

Four aspects regarding the PhD training are worth mentioning for 2015. There has been a change in the director of studies, Anna Karin Hurtig leaving the post and Miguel San Sebastian entering as new director. In March, we celebrated in a special event the 100th thesis defended in our unit. The Medical Faculty decided to invest in courses at doctoral level which stimulated our unit´s staff to develop new courses that will be offered for next year 2016. Due to lack of funding, the recruitment of new PhD students has become complicated but at the same time new opportunities have arisen such as research training partnerships funded by SIDA. Under these programmes, one PhD student from Bolivia and another one from Rwanda were registered last year and 3 new doctoral students from Tanzania will be part of the new phase of the partnership.

We offer degrees in four PhD subjects: Epidemiology and Public Health, Public Health, Global Health and Family Medicine and Epidemiology.

During 2015, 57 research students were registered and active at the Unit, 25 men and 32 women. Thirty five of them have been recruited within international research collaborations, while 22 are Swedish based research students. In the period 1987 – 2015, 110 PhD theses and 9 licentiate theses were defended at the Unit. Several of the research students are also affiliated with another department, e.g. a clinical department, or to a university in another country. Corresponding representation of two or more departments is often found among the advisors to the research students.

On the PhD-level the Unit has main responsibility for the majority of the research training courses given at the Medical Faculty.

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PhD students going for a picknick by Nydala Lake

Doctoral day at Häljegård, May 2015

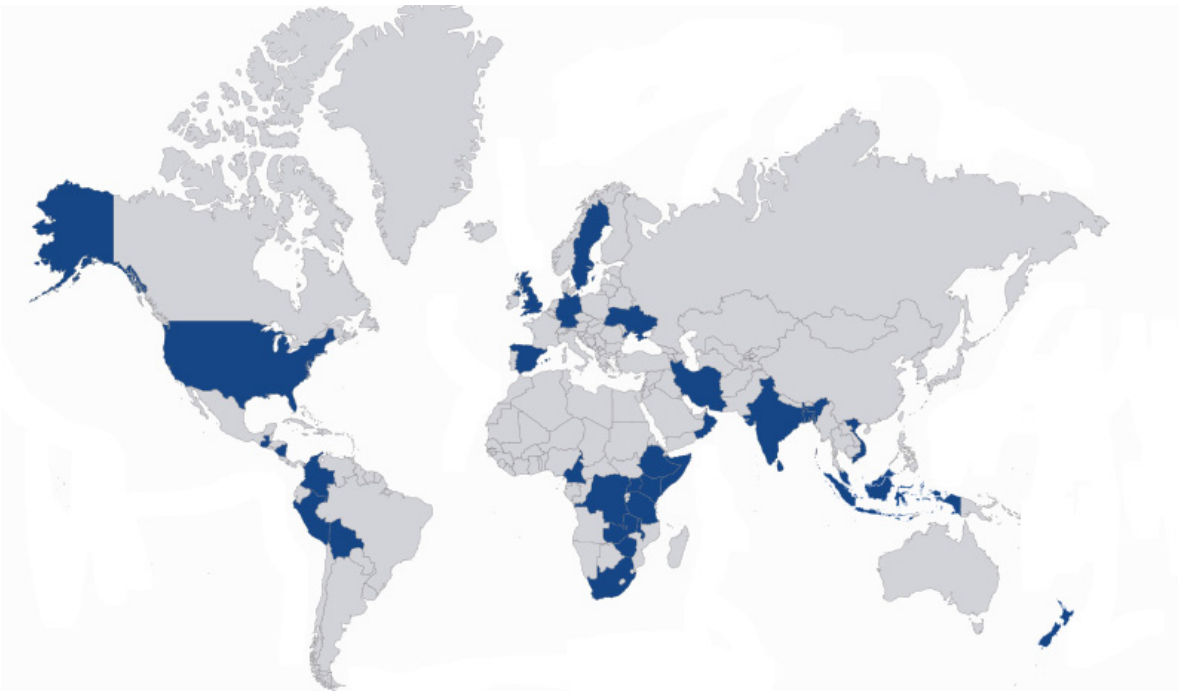

Figure 12. Home country of PhD students 1987-2015.

Swedish Research School for Global Health

In 2008, Umeå University and Karolinska Institutet launched the Swedish Research School for Global Health with financial support from the Swedish Research Council. In 2013, the financial support continued with a grant from FORTE and Lund University joined forces. The three institutions have different strengths within the area of global health research and the Research school takes advantage of the different capacities and complementary competences. The main aim is to develop and strengthen the capacity for research training in global health, through multi-disciplinary collaboration in education, research and training. The specific aims of the research school are to provide courses and seminars in global health on a doctoral level, to secure a base of new generations of researchers in global health and to provide a creative environment for students and teachers.

The Research School offers a broad variety of doctoral courses comprising topics in global health, advanced method courses, professional development and thematic workshops with networking opportunities.

Students of the Research School can attend the programme's courses at the cooperative institutions and can apply for funding of external national and international courses, workshops and conferences. Support for internationalisation has been much appreciated by students who have had the possibility to visit other research institutions and international agencies, participate in specialised courses and disseminate their findings at international and regional conferences.

Currently 86 students have been admitted to the School and by end of 2015 49 students had successfully defended their theses. The annual meeting 2015 took place in Sigtuna 7-8 September. One and a half days of the meeting was dedicated to a workshop on applied project management facilitated by Anders Tjernberg.

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Participants at the annual meeting in Sigtuna, September 2015

Dissertation events

Tesfay Gebregzabher Gebrehiwet

Joseph Zulu

Ailiana Santosa

Thaddaeus Egondi



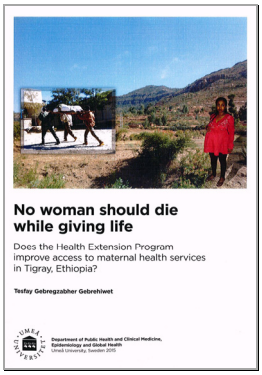
Paul Mee


Setareh Forouzan



Fredinah Namatovu

Tesfay Gebregzabher Gebrehiwet



No women should die while giving life. Does the Health Extension Program improve access to maternal health services in Tigray, Ethiopia?

Thesis defended: 24 April, 2015
Supervisors: Isabel Goicolea, Miguel San Sebastián, Kerstin Edin
Opponent: Associate Professor Anette Agardh, Social Medicine and Global Health, Lund University

Introduction. Ensuring access to universal primary health care is essential to secure a safe and pleasant motherhood and to provide compassionate care for mothers and newborns. However, inequalities in the access to maternal health services still remain a prominent problem in many countries. As part of reducing inequalities, Ethiopia launched the Health Extension Program (HEP) in 2003. The HEP is a community based program designed with a defined package of essential promotive, preventive and basic curative services targeting households, particularly mothers and children. Despite the construction of over 600 health posts and deploying more than 1200 Health Extension Workers (HEWs), preliminary data suggests a low utilization of maternal health care services. This thesis explores the HEP contribution in improving women's access to maternal health care, and the reasons for the low use of maternal health care services from the perspectives of the involved actors in the Tigray region in Ethiopia. The five dimensions of access were used as a framework to explore the access to maternal health care utilization in this setting.

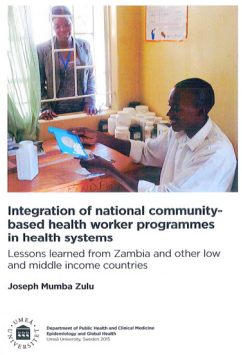
Methods. A total of four districts were included in the study. Both quantitative and qualitative methods were applied. In the first sub-study, we assessed the HEP and its association with change in the utilization of antenatal, delivery and postnatal care services. Retrospective longitudinal data for 10 years was extracted from three selected districts and checked for accuracy. Segmented linear regression technique was used to control the secular trends adjusted for correlation of the data. For the second sub-study, we conducted a cross sectional survey with 1115 women (aged 15-49 years who had given birth within five years prior to the survey period) to determine the prevalence of antenatal care and institutional delivery utilization and explore their determinant factors of low utilization. For the third sub-study, we conducted six focus group discussions (FGDs) with a total of 51 women to explore women's experiences of childbirth and maternal care. An interview with eight HEWs and four midwives were carried out to capture health workers' perspective on access to maternal health care services in the fourth sub-study. Grounded theory for the former and thematic analysis for the latter were used for the analysis.

Main findings. The finding of the first sub-study showed a statistically significant upward trend for delivery care (DC) and postnatal care (PNC) in all facilities during the HEP late implementation period (July 2008-June 2012). In addition, a substantial trend of antenatal care (ANC) service use was observed at health centres after the intervention. In the second sub-study, the determinant predictors for ANC utilization were: proximity to health facilities, to be married, ≥5 years of education and having non-farming husbands. The last three factors were also significantly associated with institutional delivery, but also lower parity, previous history of obstructed/prolonged labour and ANC counselling. Findings from the qualitative studies pointed out that elderly women influenced women's decision making about where to give birth. Women were mostly positive about giving birth at health facilities, but were concerned about the poor quality of care, inaccessibility and unavailability of transport. From the health workers 'perspective: specialized performance of hospital services, community assistance during referral and an increased awareness among women regarding the benefits of giving birth at a health facility were perceived as facilitators for institutional deliveries. Poor perceived competence of HEWs, poor conditions of health care facilities and inaccessibility of transportation, among others, were perceived as barriers for giving birth at health facilities.

Conclusion. Overall, this research revealed a considerable contribution of the HEP in improving the access and coverage of maternal health services (ANC, DC and PNC). However, cultural traditions, scattered localities, mountainous roads without adequate transportation and low quality of care are still the major obstacles to accessing the services. Mechanisms need to be designed to enable health facility access of safe delivery for women in hard to reach areas, improving the proficiency of health workers and introducing a women centered approach that enhances acceptability of the services.

Joseph Zulu

Integration of national community-based health worker programmes in health systems: Lessons learned from Zambia and other low and middle income countries



Thesis defended: 8 May, 2015
Supervisors: Anna-Karin Hurtig, John Kinsman, Charles Michelo
Opponent: Professor Helen Schneider, School of Public Healh, University of Western Cape, Republic of South Africa

Background: To address the huge human resources for health (HRH) crisis that Zambia and other low and middle income countries (LMICs) are experiencing, most LMICs have engaged the services of small scale community-based health worker (CBHW) programmes. However, several challenges affect the CBHWs' ability to deliver services. Integration of national CBHW programmes into health systems is an emerging innovative strategy for addressing the challenges. Integration is important because it facilitates recognition of CBHWs in the national primary health care system. However, the integration process has not been optimal, and a more comprehensive understanding of the factors that shape the integration process is lacking. This study aimed at addressing this gap by analysing the integration process of national CBHW programmes in health systems in LMICs, with a special emphasis on Zambia.

Methodology: This was a qualitative study that used case study and systematic review study designs. The case study focused on Zambia and analysed the integration processes of Community Health Assistants (CHAs) into the health system at district level (Papers I-III). Data collected using key informant interviews, participant observation, in-depth interviews and focus group discussions were analysed using thematic analysis. The systematic review analysed, using thematic and pathways analysis, the integration process of national CBHWs into health systems in LMICs (Brazil, Ethiopia, India and Pakistan)-(Paper IV). The framework on the integration of health innovations into health systems guided the overall analysis.

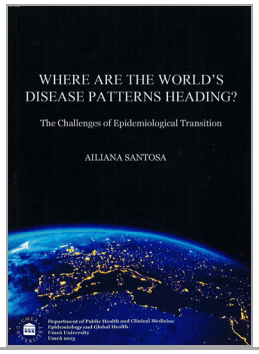
Results: Factors that facilitated the integration of CHAs into the health system in Zambia included the HRH crisis which triggered the willingness by the Ministry of Health to develop and support implementation of the integration strategy-the CHA strategy. In addition, the attributes of the CHA strategy, such as the perceived competence of CHAs compared to other CBHWs, enhanced the community's confidence in the CHA services. Involvement of the community in selecting CHAs also increased the community's sense of programme ownership. However, health system characteristics such as limited support by some support staff, supply shortages as well as limited integration of CHAs into the district governance system affected CHAs' ability to deliver services. In other LMICs, as in Zambia, the HRH problems necessitated the development of integration strategies. In addition, the perceived relative advantage of national CBHWs with regard to delivering health services compared to the other CBHWs also facilitated the integration process. Furthermore, the involvement of community members and some politicians in programme processes enhanced the perceived legitimacy, credibility and relevance of programmes in other LMICs. Finally, the integration process within the existing health systems enhanced programme compatibility with health system elements such as financing. However, a rapid scale-up process, resistance from other health workers, ineffective incentive structures, and discrimination of CBHWs based on social, gender and economic status inhibited the integration process of national CBHWs into the health systems.

Conclusion: Strengthening the integration process requires fully integrating the programme into the district health governance system; being aware of the factors that can influence the integration process such as incentives, supplies and communication systems; clear definition of tasks and work relationships; and adopting a stepwise approach to integration process.

Ailiana Santosa

Where are the world's disease patterns heading?: The challenges of epidemiological transition

Thesis defended: 12 June, 2015
Supervisors: Peter Byass, Ulf Högberg, Joacim Rocklöv
Opponent: Professor Sarah Wild, Center for Population Health Science, University of Edinburgh, UK



INTRODUCTION: Epidemiological transition theory, first postulated by Omran in 1971, provides a useful framework for understanding cause-specific mortality changes and may contribute usefully to predictions about cause-specific mortality. However, understandings of mortality transitions and associated epidemiological changes remain poorly defined for public health practitioners due to lack of evidence from low- and middle-income countries. Therefore, understanding of the concept and development of epidemiological transition theory as well as population burden of premature mortality attributable to risk factors is needed.

OBJECTIVES: This thesis aims to understand how epidemiological transition theory has been applied in different contexts, using available evidence on mortality transitions from high, middle- and low- income countries, as well as the contribution of risk factors to mortality transitions, particularly for premature mortality.

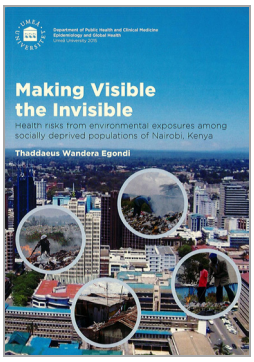
METHODS: A Medline literature search from 1971 to 2013 was conducted to synthesise published evidence on mortality transition (paper I). A descriptive analysis of trends in cause of death using INDEPTH data was conducted, focusing on specific causes of death in 12 INDEPTH sites in Africa and Asia, using the INDEPTH 2013 standard population structure for appropriate comparisons across sites (paper II). A retrospective dynamic cohort database was constructed from Swedish population registers for the age range 30-69 years during 1991-2006, to measure reductions in premature non-communicable disease mortality using a life table method (paper III). Prospective cohort data from Västerbotten Intervention Programme from 1990 to 2006 were used to measure the magnitude of premature non-communicable disease mortality reductions associated with risk factor changes for each period of time (paper IV).

FINDINGS: There were changes in emphasis in research on epidemiological transition over the four decades from 1971 to 2013, from cause of death to wide-ranging aspects of the determinants of mortality with increasing research interests in low-and middle-income countries, with some unconsidered aspects of social determinants contributing to deviations from classic theoretical pathways. Mortality rates declined in most sites, with the annual reductions in premature adult mortality varied across INDEPTH sites, Sweden, which now is at late stage of epidemiological transition stage, achieved a 25% reduction in premature mortality during 1991-2006. Overall downward trends in risk factors have helped to reduce premature mortality in the population of Västerbotten County, but some benefits were offset by other increasing risks. The largest mortality changes accrued from reductions in smoking, hypertension and hypercholesterolaemia.

CONCLUSIONS: This thesis established patterns of current epidemiological transition in high, middle-and low-income countries (Asia and Africa), where the theory fits the transition patterns in some countries, but with some needs for further adjustments in other settings, as well as deviations from the classical ET theory in the last four decades. It highlights the need to identify the burden of mortality and morbidity, particularly for reducing mortality occurring before the age of 70 years and its attribution to risk factors, which are a major public health challenge. This informs shifting of public health priorities and resources towards prevention and control of chronic non-communicable disease risk factors.

Thaddaeus Egondi

Making visible the invisible: Health risks from environmental exposures among socially deprived populations of Nairobi, Kenya



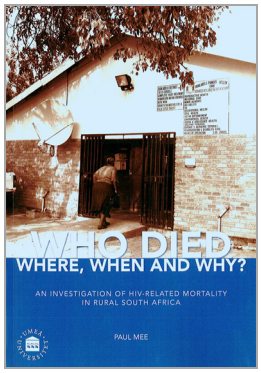
Thesis defended: 11 September, 2015
Supervisors: Joacim Rocklöv, Nawi Ng, Michael Gatari, Remare Ettarh
Opponent: Professor Patrick Kinney, Environmental Health Sciences, Mailman School of Public Health, New York, USA

Background: Most countries of sub-Saharan Africa (SSA) are experiencing a high rate of urbanization accompanied with unplanned development resulting into sprawl of slums. The weather patterns and air pollution sources in most urban areas are changing with significant effects on health. Studies have established a link between environmental exposures, such as weather variation and air pollution, and adverse health outcomes. However, little is known about this relationship in urban populations of SSA where more than half the population resides in slums, or slum like conditions. A major reason for this is the lack of systematic collection of data on exposure and health outcomes. High quality prospective data collection and census registers still remain a great challenge. However, within small and spatially defined areas, dynamic cohorts have been established with continuous monitoring of health outcomes. Collection of environmental exposure data can complement cohort studies to investigate health effects in relation to environmental exposures. The objective of this research was to study the health effects of selected environmental exposure among the urban poor population in Nairobi, Kenya.
Methods: We used the platform of the Nairobi Urban Health and Demographic Surveillance System (NUHDSS), including two nested research studies, to provide data on mortality and morbidity. The NUHDSS was established in two areas of Nairobi, Korogocho and Viwandani, in 2003 and provides a unique opportunity for access to longitudinal population data. In addition, we conducted real-time measurements of particulate matter (PM2.5) in the areas from February to October in 2013. We obtained meteorological measurements from the Moi Air Base and Nairobi airport weather stations for the study period. We also conducted a cross-sectional survey to establish the communities' perceptions about air pollution and its related health risks. Time series regression models with a distributed lag approach were used to model the relationship between weather and mortality. A semi-ecological study with group level exposure assignment to individuals was used to assess the relationship between child health (morbidity and mortality) and the extent of PM2.5 exposure.
Results: There was a significant association between daily mean temperature and all-cause mortality with minimum mortality temperature (MMT) in the range of 18 to 20 °C. Both mortality risk and years of life lost analysis showed risk increases in relation to cold temperatures, with pronounced effect among children under-five. Overall, mortality risks were found to be high during cold periods of the year, rising with lower temperature from MMT to about 40% in the 0–4 age group, and by about v 20% among all ages. The results from air pollution assessment showed high levels of PM2.5 concentration exceeding World Health Organization (WHO) guideline limits in the two study areas. The air pollution concentration showed similar seasonal and diurnal variation in the two slums. The majority of community residents reported to be exposed to air pollution at work, with 66% reporting to be exposed to different sources of air pollution. Despite the observed high level of exposure, residents had poor perception of air pollution levels and associated health risks. Children in the high-pollution areas (PM2.5≥ 25 µg/m3) were at significantly higher risk for morbidity (OR = 1.30, 95% CI: 1.13-1.48) and cough as the only form of morbidity (OR = 1.33, 95% CI: 1.15-1.53) compared to those in low-pollution areas. In addition, exposure to high levels of pollution was associated with high child mortality from all-causes (IRR=1.15, 95% CI: 1.03-1.28), and indicated a positive association to respiratory related mortality (IRR=1.10, 95% CI: 0.91-1.33).
Conclusion: The study findings extend our knowledge on health impacts related to environmental exposure by providing novel evidence on the risks in disadvantaged urban populations in Africa. More specifically, the study illustrates the invisible health burden that the urban poor population is facing in relation to weather and air pollution exposures. The effect of cold on population is preventable. This is manifested by the effective adaptation to cold conditions in high-latitude Nordic countries by housing standards and clothing, as well as a well-functioning health system. Further, awareness and knowledge of consequences, and reductions in exposure to air pollution, are necessary to improve public health in the slum areas. In conclusion, adverse health impacts caused by environmental stressors are critical to assess further in disadvantaged populations, and should be followed by development of mitigation measures leading to improved health and wellbeing in SSA.

Paul Mee

Who died, where, when and why?: an investigation of HIV-related mortality in rural South Africa

Thesis defended: 9 October, 2015
Supervisors: Peter Byass
Opponent: Associate Professor Frank Tanser, Africa Centre for Health and Population Studies, Mtubatuba, KwaZulu-Natal, South Africa



Background

South Africa has experienced the most severe consequences of the HIV/AIDS pandemic. Every community has been affected in some way, many experiencing huge increases in mortality,particularly before antiretroviral therapies (ART) were readily available. However, the micro-level understanding of the HIV epidemic in South Africa is weak, because of a lack of detailed data for most of the population. This thesis is based on detailed individual follow-up in the Agincourt Health and Demographic Surveillance Site (HDSS) located in the Agincourt subdistrict of Mpumalanga Province and investigates micro-level determinants of HIV epidemiology and the impact of treatment provided.

Methods

The Agincourt HDSS has followed a geographically defined population since 1992,approximately the time when the HIV/AIDS epidemic first became apparent. This population based surveillance has included capturing details of all deaths, with cause of death determined by verbal autopsy, as well as the geographical location of individual households within the overall Agincourt area. Background information on the roll-out of ART over time was also recorded.

Results

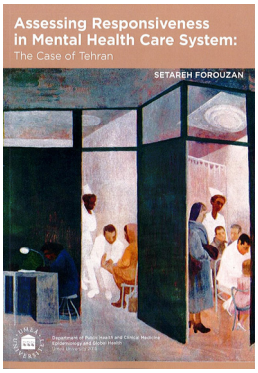
A comparison immediately before and after the major roll-out of ART showed a substantial decrease in HIV-related mortality, greater in some local communities within the area than others. Individual determinants associated with a decreased risk of HIV/AIDS mortality included proximity to ART services, as well as being female, younger, and in higher socioeconomic and educational strata. There was a decrease in the use of traditional healthcare sources and an increase in the use of biomedical healthcare amongst those dying of HIV/AIDS between periods before and after the roll-out of ART.

Conclusions

Understanding micro-level determinants of HIV/AIDS infection and mortality was very important in terms of characterising the overall epidemic in this community. This approach will enable public health interventions to be more effectively targeted towards those who need them most in the continuing evolution of the HIV/AIDS epidemic.

Setareh Forouzan

Assessing responsiveness in the mental health care system: the case of Tehran



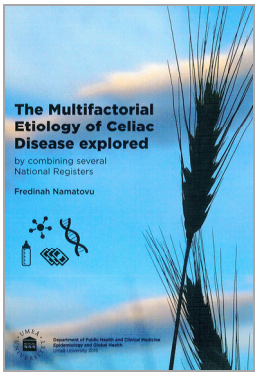
Thesis defended: 23 October, 2015
Supervisors: Miguel San Sebastian, Mehdi Gazinour, Mojgan Padyab
Opponent: Professor Ahmad Mohit, Department of Social determinants of Health, High Institute of Public Health, Tehran University of Medical Sciences and Health Service, Tehran, Iran

Introduction: Understanding health service user perceptions of the quality of care is critical to developing measures to increase the utilisation of healthcare services. To relate patient experiences to a common set of standards, the World Health Organization (WHO) developed the concept of health system responsiveness. This measures what happens during user's interactions with the system, using a common scale, and requires that the user has had a specified encounter, which they evaluate. The concept of responsiveness has only been used in a very few studies previously to evaluate healthcare sub-systems, such as mental healthcare. Since the concept of responsiveness had not been previously applied to a middle income country, such as Iran, there is a need to investigate its applicability and to develop a valid instrument for evaluating health system performance. The aim of this study is to assess the responsiveness of the mental healthcare system in Tehran, the capital of Iran, in accordance with the WHO responsiveness concept.
Methods: This thesis is a health system research, based on qualitative and quantitative methods. During the qualitative phase of the study, six focus group discussions were carried out in Tehran, from June to August 2010. In total, 74 participants, comprising 21 health providers and 53 users of the mental healthcare system, were interviewed. Interviews were analysed through content analysis. The coding was synchronised between the researchers through two discussion sessions to ensure the credibility of the findings. The results were then discussed with two senior researchers to strengthen plausibility. Responses were examined in relation to the eight domains of the WHO's responsiveness model. In accordance with the WHO health system responsiveness questionnaire and the findings of the qualitative studies, a Farsi version of the Mental Health System Responsiveness Questionnaire (MHSRQ) was tailored to suit the mental healthcare system in Iran. This version was tested in a cross-sectional study at nine public mental health clinics in Tehran. A sample of 500 mental health services patients was recruited and subsequently completed the questionnaire. The item missing rate was used to check the feasibility, while the reliability of the scale was determined by assessing the Cronbach's alpha and item total correlations. The factor structure of the questionnaire was investigated by performing confirmatory factor analysis (CFA). To assess how the domains of responsiveness were performing in the mental healthcare system, I used the data collected during the second phase of the study. Utilising the same method used by the WHO for its responsiveness survey, we evaluated the responsiveness of outpatient mental healthcare, using a validated Farsi questionnaire.
Results: There were many commonalities between the findings of my study and the eight domains of the WHO responsiveness model, although some variations were found. Effective care was a new domain generated from my findings. In addition, the domain of prompt attention was included in two newly labelled domains: attention and access to care. Participants could not differentiate autonomy from choice of healthcare provider, believing that free choice is part of autonomy. Therefore these domains were unified under the name of autonomy. The domains of quality of basic amenities, access to social support, dignity, and confidentiality were considered important for the responsiveness concept. Some differences regarding how these domains should be defined were observed, however. The results of the qualitative study were used to tailor a Farsi version of the MHSRQ. A satisfactory feasibility, as the item missing value was lower than 5.2%, was found. With the exception of the access domain, the reliability of the different domains in the questionnaire was within a desirable range. The factor loading showed an acceptable uni-dimensionality of the scale, despite the fact that the three items related to access did not perform well. The CFA also indicated good fit indices for the model (CFI = 0.99, GFI = 0.97, IFI = 0.99, AGFI = 0.97). The results of the mental healthcare system responsiveness survey showed that, on average, 47% of participants reported experiencing poor responsiveness. Among the responsiveness domains, confidentiality and dignity were the best performing factors, while autonomy, access to care and quality of basic amenities were the worst performing. Respondents who reported their social status as low were more likely to experience poor responsiveness overall. Autonomy, quality of basic amenities and clear communication were dimensions that performed poorly but were considered to be highly important by the study participants.
Conclusion and implications: This is the first time that mental healthcare system responsiveness has been measured in Iran. Our results showed that the concept of responsiveness developed by the WHO is applicable to mental health services in this country. Dignity and confidentiality were domains which performed well, while the domains of autonomy, quality of basic amenities and access performed poorly. Any improvement in these poorly performing domains is dependent on resources. In addition, attention and access to care, which were rated high in importance and poor in performance, should be priority areas for intervention and the reengineering of referral systems and admission processes. The role of subjective social status in responsiveness should be further studied. These findings might help policymakers to better understand what is required for the improvement of mental health services.

Fredinah Namatovu

The multifactorial etiology of celiac disease explored by combining several national registers

Thesis defended: 6 November, 2015
Supervisors: Olof Sandström, Anneli Ivarsson, Marie Lindkvist and Cecilia Olsson
Opponent: Assistant Professor Benjamin Lebwohl, Department of Clinical Medicine and Epidemiology, Columbia University, New York USA



Background. Celiac Disease (CD) is a systemic disease with chronic small intestinal immune-mediated enter-opathy occurring in genetically predisposed individuals. CD is triggered by dietary gluten found in wheat, rye, and barley and is considered a public health problem.
Objective. The aim of this thesis was to estimate CD incidence in Sweden and to investigate environmental and lifestyle factors that might influence the risk of developing CD during childhood, which might guide future approaches to CD prevention.
Methods. A quantitative approach was used to analyze data obtained from Swedish national registers accessed through the Umeå SIMSAM Lab. CD cases aged 0–14.9 years at diagnosis were obtained through the National Swedish Childhood CD Register. Data on total child population with demographic and socioeconomic conditions were provided by Statistics Sweden, and health data were from the National Board of Health and Welfare. Data linkage was performed by Statistics Sweden using the personal identity number (PIN). During the study duration of 1973 to 2009, we identified 9 107 children with CD, out of these data linkage was possible for 6 959 cases reported with a PIN. The total number of live births were 1 578 094, and there were 28 039 741 person-years of follow-up.
Results. During the follow-up period from 1973 to 2009, the CD incidence among all ages (0–14.9 years) gradually increased, aside from a temporary decline in 1996–1997. At the end of follow-up, a significant decline in the incidence of CD among those aged <2 years occurred, while children aged 2–14.9 years experienced a continuing gradual increase. The median age at diagnosis increased from 1.0 years of age in the 1970s to 6.8 years of age in 2009. CD risk was much higher in children born in southern Sweden (adjusted hazard ratio [HR] 1.59; 95% confidence interval [CI] 1.48–1.72) compared to those in the north. Variation in CD incidence was more pronounced on the municipality level compared to the regional level. On the neighborhood level, we found a positive association between work income and CD risk (odds ratio [OR] 2.06; 95% CI 1.61–2.64), but the risk was significantly reduced by increased average age and in areas with high level of industrial and commercial activity. On the individual level, a reduction in risk was observed in children whose mothers were aged ≥35 years (OR 0.8; 95% CI 0.7–0.9) and with high maternal income (OR 0.9; 95% CI 0.8–0.9). Being a second-born child was positively associated with CD. Among boys, elective caesarean delivery increased CD risk (OR 1.2; 95% CI 1.0–1.4), while maternal overweight, premature rupture of the membrane, and low birth weight all showed negative associations. In girls, the risk of developing CD was associated with repeated maternal urinary tract infections during pregnancy. With regard to season of birth, we found an increased CD risk in children aged <2 years if they were born during the spring, while those aged 2–14.9 years had a more prominent risk if they were born during summer or autumn.
Conclusion. Our findings reveal an increased CD incidence over time and an increase in age at diagnosis. CD risk varied between birth cohorts and with season of birth, suggesting cyclic environmental and/or lifestyle risk factors in CD etiology. Neighborhood composition influenced CD incidence, and this is one of the first attempts at identifying factors associated with the geographical variation of CD. The observed effect of elective caesarean delivery, repeated maternal urinary tract infections, and season of birth might be due to infections and/or unfavorable colonization of the microbiota during early life. Reduced CD risk associated with high maternal age and income might be due to other lifestyle conditions. More research on underlying risk factors for CD is required in order to develop more effective preventive strategies

Table 5. PhD students registered at the unit.

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
Juan Cordoba	MD, MPH	Spain	Economic crisis and health inequalities in Spain and Andalusia	Per Gustafsson
Laila Daerga	Nurse	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
Thaddaeus Egondi	MSc in biostat *(dissertation 2015)*	Kenya	Assessing exposure to urban outdoor air pollution and associated mortality in Nairobi, Kenya	Joacim Rocklöv
Daniel Eid Rodriguez	MD	Bolivia	Public health strategies for the control of Leishmaniasis in Bolivia.	Miguel San Sebastian
Setareh Forouzan	MD *(dissertation 2015)*	Iran	The mental health care system responsiveness in Iran	Miguel San Sebastian
Maria Furberg	MD	Sweden	Climate change related aspects of health in northern Sweden	Maria Nilsson
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
Tesfay Gebrehiwet	BSc Public Health, MPH *(dissertation 2015)*	Ethiopia	Improving the utilization of maternal health care in health extension program context in Tigray region, Ethiopia	Isabel Goicolea
Tsigemariam Teklu Gebereslassie	BSc Public Health	Ethiopia	Epidemiology of Visceral Leishmaniasis and epidemiological interaction with concomitant infections in north Ethiopia.	Peter Byass
Hagos Godefay Debeb	MPH	Ethiopia	Supporting the development of evidence-based policies aimed at reducing maternal mortality in Tigray region, Ethiopia	John Kinsman
Jonas Hansson	Police, MA behavioural sciences	Sweden	Psychosocial job characteristics, coping and mental health among Swedish police officers in relation to deportation work of unaccompanied children	Mehdi Ghazinour
Christina Hedlund	MD	Sweden	Epidemiology and Surveillance of Climate sensitive Infectious Diseases in the Circumpolar area	Birgitta Evengård
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.	Lars Lindholm
Vijendra Ingole	MSc	India	A study of weather effects, susceptibilities and potential impacts of climate change on mortality in Vadu HDSS, India	Barbara Schumann
Junia Joffer	BSc Social Science, MPH	Sweden	Self-rated health in adolescence – Experiences of and predictors for good health	Lars Jerdén
Robert Jonzon	Nurse, MPH	Sweden	Health examinations of asylum seekers within the Swedish health care system	Anna-Karin Hurtig
Kateryna Karhina	MPH	Ukraine	The role of social capital and gender for mental health. Comparative studies between Sweden and Ukraine	Malin Eriksson

Name	Background	Country	Thesis subject	Main supervisor
Therese Kardakis	MSc Business & Economics, MPH	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
Vu Duy Kien	MD, MPH	Vietnam	Inequalities in chronic non-communicable diseases in urban Vietnam: Patterns, social determinants and health system responses	Nawi Ng
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
Utami Puji Lestari	Nurse	Indonesia	Risk factor of type 2 diabetes and their trends in Purworejo district, Indonesia	Nawi Ng
Lubin Lobo	MA theology	Sweden	The right to health of asylum seekers in Sweden	Anna-Karin Hurtig
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
Karen Mathias	MPH, Fellow of New Zealand Coll of Public Health Med	New Zeeland	Assessing the components of community mental health competence in the upp Ganga region of north India. Can they be supported an amplified?	Isabel Goicolea
Paul Mee	MSc Epidemiology *(dissertation 2015)*	South Africa	Analysis of the effectiveness of a community health clinic via analysis of population level measures of mortality and morbidity	Peter Byass
Kanyiva Muindi	MSc in Epidemiology and biostatistics	Kenya	Indoor air pollution and adverse pregnancy outcomes in Kenya	Nawi Ng
Fredinah Namatovu	MA health and society *(dissertation 2015)*	Sweden	Exploring the multifactorial etiology of childhood celiac disease combining national registers	Olof Sandström
Anne Neumann	Master of Med Sc	Germany	Prevention of Type 2 Diabetes Mellitus: modeling the cost-effectiveness of diabetes prevention	Lars Lindholm
Per Nordin	Statistician	Sweden	Kontaktgrad och vårdkonsumtion, en alternativ ansats för att belysa behov av sjukvård	Lars Lindholm
Trang Phan Minh	MD, MPH	Vietnam	Weather and weather extremes in association to mental health among adults in Vietnam	Maria Nilsson
Mikkel Quam	MSc international health	US	Modeling potential air-travel related introduction & emergence of dengue in Europe	Joacim Rocklöv
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	Nawi Ng
Eva Randell	MA social work	Sweden	Tonårspojkars hälsa och självbild	Renée Flacking
Bharat Randive	BSc of Ayurvedic Med & Surg; Masters (Sociology)	India	Study of conditional cash transfer programme for promotion of institutional births in India: Studies from selected provinces of India	Lars Lindholm
Ailiana Santosa	MD, MPH *(dissertation 2015)*	Sweden	Towards a better understanding of epidemiological transition, based on Sweden´s experience	Peter Byass

Name	Background	Country	Thesis subject	Main supervisor
Julia Schröders	MPH	Sweden	Interdisciplinary perspectives on the chronic non-communicable disease challenge in a transitional lower middle-income country: evidences from Indonesia	Nawi Ng
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	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	Lars Lindholm
Sulistyawati	MPH	Indonesia	Mapping human health vulnerability and response to climate change in Yogyakarta, Indonesia	Nawi Ng
Linda Sundberg	Psychologist	Sweden	Development and implementation of national clinical guidelines in Swedish healthcare. The challenge to transform new knowledge to clinical practice	Monica Nyström
Johanna Sundqvist	Social worker	Sweden	Social workers and police officers mental health in relation to the repatriation work of unaccompanied asylum-seeking refugee children. A comparative study.	Mehdi Ghazinour
Moses Tetui	Sociologist, MPH	Uganda	Participatory approaches to program design and implementation: lessons from a maternal health program in Eastern Uganda.	Anna-Britt Coe
Masoud Vaezghasemi	MSc Publ health and epidemiology	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
Ryan Wagner	MSc	South Africa	The economics of epilepsy: Modelling cost-effective interventions for the treatment of epilepsy in sub-Saharan Africa	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
Joseph Zulu	MSc in Social and cultural anthropology *(dissertation 2015)*	Zambia	Integrating community health workers (CHWs into the health system and NIV/AIDS interventions in Zambia	Anna-Karin Hurtig

Engaging with society - a mission for research and education

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

We seek to contribute to equitable and sustainable improvements in health and welfare across the globe. We believe that this can be achieved by conducting good research and education only provided that the commitment for engagement with society is strong.

To address policy and society relevant questions, in low and middle income countries, Europe and Sweden, we must deepen present collaborations but also introduce new partners and areas. In addition, we must continue to reduce our own structural and administrative hinder for engaging in society.

During 2015, we continued our collaboration with partners in low and middle income countries as well as the Västerbotten County Council. We developed 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.

When the first university in Bologna was established the objective was to promote societal development. However, gradually interaction with society diminished. 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 and recognized as universities' *third mission*. Umeå University considers it as an integrated part of teaching and research.

Translating Research into Practice

When EpiGH was established 1986 a core objective was, and still is, to be interactive with society. Working with problems in villages such as Butajira in Ethiopia, ideas in cities like Hanoi in Vietnam, and possible solutions to health issues in the county of Västerbotten, are all examples when our research and teaching has 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 that country's health system strengthening. We envisage that this partnership will link initial capacity building with a formal academic research training that will generate a critical mass of Somali researchers. The basis will be a mutually beneficial research partnership with establish links between the Somali and Swedish universities on the one hand, and the academic institutions within each country, respectively.

Another collaboration focused on climate change and health and involved Västerbotten County Council, Sweden, and Yogyakarta City Government, Indonesia. The project focused on creating an Early Warning System for a climate sensitive disease – Dengue Fever, involving all important stakeholders. Researchers involved in the project have been invited to the White House Office of Science and Technology Policy in Washington, D.C. in USA. Together with other participants, including representatives from National Aeronautical and Space Administration (NASA), National Oceanic and Atmospheric Administration (NOAA), and Centers for Disease Control and Prevention (CDC), they have discussed how to accelerate the development and federal application of models for predicting dengue epidemics.

Increasing Health Literacy

In addition to translating research into policy and practice, we aim to increase health literacy and awareness on global health issues. For example, our researchers have given presentations during FORTE Talks in Stockholm, and the annual primary health care personnel learning days in Västerbotten County, etc. Outside Sweden, in 2015, our researchers contributed to organizing several workshops on different subjects, all with a societal "need" perspective. To further increase awareness on various global health issues, we continuously spread information about our activities and their results. The unit's website provides detailed and up-to-date information on research, training, and the third mission. When it comes to the Unit's research, this can also be found on the webpage of Umeå Centre for Global Health Research. Several of our researchers also communicate on twitter and blogs.

Promoting Educational Exchange

Finally, we aim to promote opportunities for educational exchanges with low and middle income countries. For the first time, a member of our staff, Anna-Britt Coe, participated in "contact seminars" organized by the Swedish Council for Higher Education. This one, held in Colombia and Peru, included approximately 25 representatives from higher education institutions in Sweden and other Nordic countries. The seminar involved five days in Bogota, Colombia; two days in Medellin, Colombia; and four days in Lima, Peru. During the seminar, participants learned about teacher-student exchange funding programs (Linnaeus-Palme and Erasmus+) and our respective higher education systems. Participants also met with representatives of similar academic departments to their home department. Coe met with representatives from public health and medicine at six universities.

Since 1992, we have administered the SIDA-allocated Minor Field Study (MFS) scholarships given to Swedish students within global health, medicine and health related fields. These scholarships make it possible for students to perform field research during a two-month period in a low or middle income country. During 2015, we gave out seven such scholarships to students from medicine, nursing and dentistry; 4 from Umeå University and 3 from other Swedish universities. This year field research was carried out in India, Indonesia, Thailand, and Vietnam.

Summarizing, 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 of 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 but also thanks to collaborators from all around the world including Sweden, Indonesia, South Africa, England, New Zealand, Bolivia, Tanzania, etc. For us it is important that the engagement in society is truly incorporated with research and education and not seen as a separate *third mission* and thus contribute positively to the development of societies regarding health and welfare.

Figure 13. We have been engaging with society via many different media.

Collaboration locally and regionally

Region Västerbotten

Region Västerbotten is involved in the nationwide work to build regional support structures that are sustainable in the long term, for the development of knowledge within social services and relevant areas within health and medical care. The support structure is coordinated and operated by FoU Välfärd, the research and development division at Region Västerbotten in partnership with other R&D environments, Umeå University, county councils and municipalities. Key elements of this support structure include the Knowledge Network, where representatives from organisations including Umeå University, R&D environments within the county, Memeologen and FORSA Norr come together four times a year, and the development potential represented by the county's 30 R&D agents.

Region Västerbotten shall contribute towards increasing the level of expertise for those who work in social services and related county council operations. FoU Västerbotten's assignment is to assist the responsible authorities with knowledge, method and implementation support, and to disseminate current research and new knowledge within the field of social welfare. Its operations shall support improvements and carry out practical research, ideally in partnership with other knowledge environments.

FoU Västerbotten works within the target group areas of the elderly, children and young people, substance abuse and addiction, and people with disabilities. Its operations provide education and practical support for evidence-based practice. One important part of the work involving the three knowledge sources – research, the user/patient and the profession – involves carrying out monitoring and evaluations at individual, group and operational levels. This includes the use of various monitoring

tools, open comparisons and quality registers. FoU Västerbotten provides analysis support in order for operations to be able to make concrete improvements.

FoU Västerbotten works together with Umeå University, and one of FoU Västerbotten's directors of research holds an adjunct lectureship at the Unit for Epidemiology and Global Health, providing an exchange of services and knowledge. Increased collaboration has been initiated in order to strengthen the link between research and practice during the year. 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.

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Västerbotten County Council

For many years now the County Council has been working closely with EpiGH The collaboration is regulated by an agreement between the University and the County Council.

The County Council has the advantage -the only one in Sweden to have such an agreement- to have access to new scientific base for the 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 organization and can therefore quickly learn and observe the difficulties in implementing new evidence based methods. No matter how good research, the organization will always have to adopt to new ways of working or new ways of thinking – not always an easy task. In this mutual world of improving preventive work carried out within the County Council, the Västerbotten Intervention Programme has developed immensely during this collaboration, and is now one of the most important preventive strategic (population based) contributions to the people in the county of Västerbotten. This is in many ways due to interchange and collaboration between, on one hand, researchers at the EpiGH and results from the extensive research carried out by the university, and, on the other hand, the administrative, coordinating and supporting team within the County Council, as well as the many VIP-nurses who carry through the program in daily practice. Within the health initiative Salut, professionals from health – and hospital care have together with researchers from the Unit and health promotion officers from the County Council developed health questionnaires within the antenatal care system, children's health program within the child health care system, health talks within the dental care system and with staff and teachers also developed health programs within schools.

These are some of the positive outcomes thanks to the close collaboration between our different organizations, but last and not least – we get to know new good friends and colleagues.

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Register Centre North

The Centre of Quality Registries North (CQN) is part of a national organisation for support of Sweden's approximately 100 national quality registries. CQN like the other five similar centres, one in each health care region, provides skills in IT, statistics, scientific advice and methodology for feedback and improvement. CQN has a close collaboration with the Swedish Regional Cancer Centres (RCC), especially RCC North among other things concerning the most commonly used Swedish IT-platform for quality registries, INCA.

CQN is part of the Västerbotten County Council's infrastructure for R&D, and both run and participate in projects both on a national and regional level on health care quality improvement and clinical research together with Memeologen, Clinical Trial Unit, Clinical Research Centre Umeå, Biobank North Sweden and KBN, a platform for clinical trials in all four counties in Norrland.

Consequently CQN provides a broad platform of operational processes in health care

and several collaborations of value for clinical research.

CQN collaborates with EpiGH in several different ways. We provide joint courses, including a PhD course on register-based research, master-level course in biostatistics, to name a few. We are also exploring the possibilities for partnership in research in health economy, on development of PROM, and for implementation research.

The collaboration is mutually beneficial. By taking part in education at EpiGH, CQN statisticians can provide rootedness in clinical practice, and also develop their skills in statistics and above all epidemiology together with the staff at EpiGH. EpiGH's skills in health economy are important for the development of the format for the feedback from quality registries to health care.

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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 in 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 healthcare 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 present in relation to health and social care
- To serve as the center for preventative health care, research and development in relation to the County's 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 both national and international knowledge of funding sources, as well as locally based competence where such professionals are also scientifically qualified. A valuable asset within those GMC are seeking, is to have connections and networks within both the inland municipalities and the Community Hospitals in southern Lapland, An area of focus will be to develop rural health care within the four northernmost Counties of Sweden.

GMC continues to broaden its research and development practices through working collaboratively with university departments appropriate to active projects. GMC are additionally seeking to create opportunities for graduate work.

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Consultancy and advisory functions

We are contributing with our time and expertise within Umeå University and externally, the latter locally, regionally, nationally and internationally. Examples of different consultancy ad advisory roles are given below (Table 6). In addition, our researchers are of course referees 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 annually in more than one hundred 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 6. Consultancy and advisory tasks among the staff.

Name	Institution	Task
Peter Byass	Norwegian Research Council	Assessment of research grant applications
	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 Commission on Climate Change and Health
Maria Furberg	Arctic Council	Member of Arctic Human Health Expert Group (AHHEG)
Anna-Karin Hurtig	The Swedish Research Council - Vetenskapsrådet	Assessment of grant applications for development research in global health
Anneli Ivarsson	Umeå University	Member, Faculty of Medicine Board
		Member, Educational Strategic Board, Faculty of Medicine
		Chair, International Committee, Faculty of Medicine
	The Swedish Foundation for Humanities and Social Sciences - Riksbankens Jubileumsfond	Assessment of applications for research infrastructure
	Swedish Research Council for Health, Working Life and Welfare - Forte	Assessment of applications for research networks and publications
		Member of the election committee for a new board
	American Gastroenterology Association, the Intestinal Disorders Section	Advisor on celiac disease issues
	Swedish Medical Association	Chair, Working Group for Celiac Disease
		Member, International Committee for Global Health
	Swedish Epidemiological Association	Board member
Helene Johansson	Västerbotten County Council	Assessment of applications for FoU-grants
Klara Johansson	Public Health Agency of Sweden - Folkhälsomyndigheten	Analyses support to the unit for health and sexuality
	Injury Prevention (BMJ Journals)	Part of the social media team

Curt Löfgren	Umeå University	Member, International Committee, Faculty of Medicine
		Member, Marketing Council, Faculty of Medicine
Maria Nilsson	Ministry of Social Affaires	Member, Advisory board for ANDT-control and prevention (Alcohol, Narcotics, Doping, Tobacco)
	Public Health Agency of Sweden - Folkhälsomyndigheten	Expert support for scientific assessments of publications
	Lancet	Member, Lancet Commission on Climate Change and Health
Margareta Norberg	Umeå University	Member, Expert group on Cardiovascular Diseases, Unit of Biobank Research
Klas-Göran Sahlén	Västerbotten County Council	Assessment of applications for FoU-grants
Stig Wall	Vetenskapsrådet	Assessment of applications in Global Health
	Swedish Research Council for Health, Working Life and Welfare - - Forte	Assessment of individual fellowships COFAS 2
Lars Weinehall	Umeå University	Member, Sliperiet board.
		Member, Assessment group for AFA's international postdoctoral scholarships
		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
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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