

Annual report 2018



Greenland Centre for Health Research

Institute of Nursing and Health Research, University of Greenland



Preface from the Pro-rector

This year I am again delighted to be able to present to you a thorough overview report of the activities at Greenland's Centre for Health Research at the Institute of Nursing and Health Research. The Centre is developing greatly, where more and more activities are carried out in collaboration with the Centre. This positively affects the nursing education and the society in general.

We continue to focus on increasing this development and are looking forward to an exciting new year with both internal and external collaborations.

I would like to thank Greenland's health care system as well as the municipalities for always being positive and willing to collaborate.

With kind regards

Suzanne Møller

Pro-rector and Head of Institution of the Institute of Nursing and Health Research

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In this annual report, the advisory committee is presenting its scientific activities conducted in 2018. Greenland's Centre for Health Research aspires this annual report to serve as an overview of health research in and to be an inspiration for future research projects in Greenland.

Letter from the chair

I am pleased to present to you our annual report, which provides an overview of the very active year we have had. We have, for example, held two PhD courses and been co-organizers of the 17th International Congress in Circumpolar Health (ICCH) in Copenhagen, where many of our researchers presented their work, and our Postdoc researcher Aviaaja Hauptmann and PhD student Karsten Rex were keynote speakers. The ICCH was also a great opportunity for our Centre to strengthen our international networks.

The Greenland Centre for Health Research focuses on network-building between universities in the Arctic region through UArctic Thematic Networks. The mission of the Network on Health and Well-being in the Arctic is to improve the sustainable development of health and wellbeing in circumpolar regions by promoting research projects on health people, and by organizing research training and by distributing scientific information. The main task of the network is to increase the quantity and quality of scientific research carried out at the circumpolar area by the means of the graduate school and the international Master and PhD programs for Circumpolar Health and Wellbeing.

Building local capacity through the University of Greenland is an important step to addressing challenges such as recruitment and retainment of well-trained health workers. In response, higher education has been actively developing programs over the past decade to address these challenges, of which three are demonstrating notable success: 1) Specialist Education for Medical Doctors, 2) Nursing Education, and 3) the creation of the Greenland Centre for Health Research.

Gert Mulvad



In memory of Henning Sloth Pedersen



On the morning of the 17th of September physician and researcher Henning Sloth Pedersen left us. Henning Sloth Pedersen was born a Dane but became Greenlandic in mind and heart. He was a passionate family physician and a researcher in environmental medicine. He dedicated his life to Greenland and the Arctic, which included the dedication to patients, friends and the nature. Henning was an inspiring person who managed to connect science and patients with his empathetic attitude and language skills.

After participating in the UN peacekeeping force in Cyprus and being an Elite Gymnast in Denmark, Henning arrived in Greenland in 1979 to become a lecturer in Qaarsut. Here, he learned the Greenlandic language and got familiar with the Greenlandic food, music and humour. This was only the beginning of a lifelong commitment in Greenland as a physician, researcher, debater and citizen.

With more than 25 years in Greenlandic health care, Henning's medical care and research took him to all cities in Greenland and became known as the doctor who understood the individual patient and their needs.

Starting out with his PhD thesis on 'The Greenlandic Autopsy Project: atherosclerosis and intracerebral haemorrhagia in relation to fatty acid composition in adipose tissue and validation of the cause of death', Henning has for several years researched Arctic health under AMAP, Arctic Council Working Group, which monitors the pollution of heavy metals in, for example, Arctic fish. He participated in several major research projects primarily in the field of environmental medicine including EU projects and CLEAR (Climate Change, Environmental Contaminants and Reproductive Health). With more than 100 scientific articles as author or co-author he also guided PhD students. Henning was a former associate professor at the Centre for Arctic Environmental Medicine at the Faculty of Health Sciences at Aarhus University. In 2014, he became an associate professor at Greenland's Centre for Health Research. For the great contributions to research, Henning received the Arctic Hildes Medal and the Greenland Medical Association's honorary award in 2015. On June 22nd, 2018, he received *Nersornaat* in silver, which is an honorary medal awarded by the Government of Greenland.

Rest in peace, Henning. You will always be remembered by people in Greenland and the Arctic.

Written by Gert Mulvad

About Greenland's Centre for Health Research

Our vision

Improving the health status in Greenland through initiation and coordination of health research.

Our mission

- Increasing coordination among research institutions
- Developing, exchanging, disseminating and applying scientific knowledge
- Creating national and international networks
- Building local capacity through PhD programs and mentoring
- Improving community involvement and local partnerships

Our objectives

The aim of the Centre is to enhance cooperation between researchers from other countries and health professionals in Greenland, to facilitate research cooperation within Greenland, and to facilitate the interaction of researchers from other countries with the Greenland community at large. The Centre is active in teaching at all levels from classroom teaching of nursing students to supervision of PhD students. In a longer perspective, the Centre will work for the establishment of data archive and archive of specimens collected in Greenland.

The Centre's history

On the 28th of May 2008 Greenland's Centre for Health Research (GCHR) was established. Back then a number of research-interested professionals working in Greenland's health care system had been discussing how a health research institute physically placed in Greenland was lacking. The ambition was that such an institute could facilitate the transfer of competencies to Greenland, be the base for PhD students, provide affiliated researchers with a Greenlandic identity for their international research network, and provide evidence-based content for the nursing education, health professionals' training and perhaps at some point arctic MPH and PhD educations. Since 2008, five PhD students have graduated from the Centre and currently four PhD students are affiliated with the Centre.

Our partnerships & networks

The Centre works to forge links between research centres, independent scholars and students as well as health professionals in Greenland. GCHR is organised within the Institute of Nursing and Health Research at the University of Greenland. We collaborated with the Greenland Institute of Natural Resources on building project for the Centre. The Centre has signed *Memorandum of Understanding* with Canadian Institute for Circumpolar Health in Yellowknife (North West Territories) and the UArctic.

The Centre cooperates with:

- Centre for Care Research at the Arctic University of Norway (UiT)
- ICN Rural and Remote Nursing Network
- Arctic Transatlantic Telehealth Research Network

Furthermore, GCHR is co-organisation of NUNAMED, part of Thematic Network on Health and Well-being in the Arctic under University of the Arctic, and member of the Circumpolar Health Research Network.

Advisory Board

- Gert Mulvad, MD, GP, Doctor h.c. - Chairman of the local dep. of the Danish-Greenlandic Society for Circumpolar Health
- Suzanne Møller, pro-rector and head of institute - Institute of Nursing and Health Science
- Berit Bjerre Handberg, Chief physician - Board of Health and Prevention
- Peter Bjerregaard, Professor, MD, Dr. Med. Sci. - Ministry of Health
- Sten Lund, Research coordinator at the Ministry of Research
- Henrik L. Hansen, Medical officer at the National Medical Board/office
- *Appointed:* Michael Lynge Pedersen, Physician and PhD, Greenland Centre for Health Research

Researchers

- **Gert Mulvad**, MD, GP, Doctor h.c.
- **Lise Hounsgaard**, Professor, Ph.D., RN
- **Lene Seibæk**, RN, MHH, PhD
- **Aviaaja L. Hauptmann**, Postdoc
- **Ingelise Olesen**, Research assistant

Assigned researchers

- **Anders Koch**, Professor, Chief physician, PhD, MPH
- **Eva C. Bonefeld-Jørgensen**, Professor, PhD
- **Marit E. Jørgensen**, Professor, senior physician, PhD
- **Michael Lynge Pedersen**, MD, GP, associate professor, PhD
- **Peter Bjerregaard**, Professor, MD, Dr. Med. Sci.
- **Preben Homøe**, Professor, senior physician, Dr. Med., PhD
- **Stig Andersen**, Clinical professor

Affiliated researchers

- **Karen Bjørn Mortensen**, PhD & physician
- **Ruth Montgomery-Andersen**, DrPH & independent researcher
- **Tenna Jensen**, Associate professor, PhD
- **Tine Aagaard**, PhD, adjunct

PhD students 2018

- **Mette M. Schlütter**, MA anthropology
- **Mikaela Augustussen**, BScN & MSc
- **Karsten Rex**, Physician
- **Paneeraq Noahsen**, Physician
- **Trine Jul Larsen**, BScN & MSc public health

Contact information and biographies of the researchers associated with GCHR can be found on our homepage (www.uni.gl).

Centre activities in 2018

Meetings of the Danish-Greenlandic Society for Circumpolar Health

On the 24th of May, the local department of the Danish-Greenlandic Society for Circumpolar Health held an open meeting at the Centre with the following presentation:

- 'Arbejdsmiljøet i fiske- og skaldyrsindustrien i Grønland, allergiforekomst og vigtigste allergener i Arktis' by Jakob Bønløkke, head-physician at Aalborg University Hospital & Zille K.B. Petersen, nurse
- 'En rejse under isbjerget. Patientsikkerhed og utilsigtede hændelser' by Tina Nielsen, consultant in patient safety
- 'Pregnancy diabetes in Greenland' by Michael Lyng Pedersen, PhD and physician, Queen Ingrid health centre Nuuk
- 'Arctic Aging. Living conditions, quality of life and health promotion among elderly in Greenland' by Tenna Jensen, lector Copenhagen University & Mette M. Schlütter, PhD student

On the 22nd of November, another open meeting was held at the Centre with presentations from the ICCH17:

- 'Diabetes - a challenge in Greenland' by Michael Lyng Pedersen, PhD & physician, Queen Ingrid health centre Nuuk
- 'Becoming a health professional abroad and returning to serve your native population' by Karsten Rex, physician and PhD student
- 'Patient involvement in Greenland hospital care: a clinical research project' by Lene Seibæk, associate professor at Ilisimatusarfik
- 'Moving Circumpolar Health Forward - Opening speech at the ICCH17' by Gert Mulvad, MD, GP, Doctor h.c.

New researchers at the Centre



Tenna Jensen has become affiliated researcher in 2018. She is associated professor in health and ageing research at the University of Copenhagen. Since the beginning of 2017 she has managed the research and development project Ageing in the Arctic (AgeArc). The project aims to investigate health, well-being and quality of life among older people and in collaboration with the municipalities to develop suggestions for welfare products, solutions and educational materials for use in the health and care sector. Ageing in the Arctic is a collaborative project that besides from Ilisimatusarfik involves the municipalities and a number of Danish research and education institutions. In 2018 I became affiliated to the Greenland Centre for Health Research. The affiliation has allowed her to strengthen ties to the Centre and to other parts of Ilisimatusarfik and to interact, engage and exchange knowledge with both researchers and students.



Lene Seibæk is an associate professor at Aarhus University, Institute for Clinical Medicine, and senior researcher at Aarhus University Hospital, Department of Gynaecology and Obstetrics in Aarhus, Denmark. The 1st of March 2018, Lene was appointed to a 25% position at the Greenland Centre for Health Research and University of Greenland. Her research field in Greenland focuses on patient- and family-centred care. Next to assignments in teaching and supervision, Lene is responsible for the research project 'Patient involvement in Greenland hospital care'. The project is conducted in close cooperation with the Institute of Nursing and Health Science and the Queen Ingrid's Hospital in Nuuk.

The 17th International Congress on Circumpolar Health in Copenhagen

In mid-august, just as the pride festival started and the rain started to return to Denmark, we from the Greenland Centre of Health Research took part in organising and hosting the 17th International Congress on Circumpolar Health (ICCH) from the 12th to 15th of August 2018. The ICCH conferences are held every third year in different locations in the Arctic region, last time it was held in Oulu (Finland) and in 2021 we will meet our colleagues again in St. Petersburg (Russia). This was the second time that the ICCH was hosted in Copenhagen, first time being 1981.



The ICCH is initiated and supported by the International Union for Circumpolar Health and the conference represents the largest scientific meeting on circumpolar health worldwide. This year we had about 400 participants from Greenland, Canada, Alaska (USA), Sweden, Norway, Finland, Denmark, Russia, Iceland and Australia. Participants were primarily researchers, but also many policy-makers, students, practitioners and representatives of indigenous populations attended.

The program of the ICCH was tightly packed from eight in the morning until nine in the evening with talks, presentations, meetings and of course great cultural and social events. During the day participants got to choose from the many interesting keynotes, oral and poster presentations on various health topics spanning from environmental issues to genetics, from chronic to infectious diseases, ageing, maternal health, mental health, cultural sensitivity, and health care systems in the Arctic. With 21 keynote-speakers participants got the opportunity to taste a bit of everything. All keynote presentations were filmed, and the videos are available on our homepage (www.icch2018.com).



We also organised some fun social events and cultural performances to make sure participants also get to experience some of the Greenlandic culture and see beautiful Copenhagen. Overall the conference was very successful, and participants appreciated the familiar and relaxed atmosphere present throughout the conference.

Written by Christine Ingemann

13th General Assembly of the Inuit Circumpolar Council

From the 16th to 19th of July 2018, the 13th General Assembly of the Inuit Circumpolar Council (ICC) took place in Utiquaġvik, Alaska. In the context of the Assembly theme 'Inuit – The Arctic We Want' the *Utiquaġvik Declaration 2018* was declared by the Inuit of Alaska, Canada, Greenland and Chukotka. Gert Mulvad represented Greenland in ICC Health Committee. In this annual report, we would like to present two aspects of the declaration, being *Families and Youth* and *Health and Wellness*. The text below is directly taken from the declaration.



Families and Youth

Healthy Inuit families are central to the sustainability of our communities. Our families are changing, and we recognize that the future lies with our youth to achieve “Inuit - The Arctic We Want”. There are many strong families and youth that find pride, empowerment and strength within our culture, language and identity. However, our families are facing many challenges and require culturally relevant support based upon our cultural values, which are central to the sustainability of our families and communities. The most important needs of families include poverty reduction, access to adequate housing, access to affordable energy, enhanced food security, improved health and wellbeing, and educational attainment. Inuit, states and the international community must immediately address these priorities within Inuit Nunaat. The following actions are needed to support families and youth in Inuit Nunaat:

19. Urge ICC to support UN member states and international activities that recognize the relationship between family and culture, that address the United Nations Sustainable Development Goals within Inuit Nunaat and that share best practices that support and strengthen Inuit families;
20. Support Inuit youth organizations and encourage Inuit youth to share and participate fully in all ICC activities;
21. Advocate for infrastructure and Inuit-specific interventions that will address family violence;
22. Consider the unique needs and challenges based on gender in Inuit communities.

Health and Wellness

Inuit health and wellness must be approached in a holistic way that recognizes that physical and mental health cannot be addressed separately, and solutions should build upon the knowledge and strengths found within our communities. Children with mental health issues require our special support and help as acknowledged by the United Nations Convention on the Rights of the Child in Article 19 and 39.

Inuit face significant health disparities today. We experience unacceptably high rates of cancer, diabetes, infectious diseases including tuberculosis, sexually transmitted infections and diseases, addiction, and suicide which have serious, negative impacts on our families and our communities. The appropriate physical and mental health services, including necessary clinical,

financial and human resources, are inadequate or non-existent in Inuit Nunaat. In particular, the ongoing mental health crisis facing Inuit of all ages today is unacceptable by any world standard. The elevated rate of suicide among Inuit is an urgent challenge.

A combination of community and evidence-based, globally informed and culturally specific suicide prevention strategies and initiatives must be further developed and implemented throughout Inuit Nunaat to address risk factors and reduce suicide. To achieve health and wellness in our communities we must start by undertaking the following:

23. Direct ICC to host a Circumpolar Inuit Summit on Health and Wellness focusing on efforts and initiatives to reduce and eradicate health disparities harming our families and prioritizing mental wellness, addictions, and suicide prevention;
24. Facilitate and support the ongoing development and implementation of regional and national evidence-based, suicide prevention strategies;
25. Instruct ICC to support knowledge sharing and communication of Inuit innovation and best practices around mental health and wellness, including community-based solutions and to continue to take leadership in projects and initiatives, specifically on suicide prevention and addictions to encourage meaningful connection with communities, children, and youth, and link Indigenous Knowledge and action with scientific research.

Thematic Network on Health and Well-being in the Arctic

The University of the Arctic (UArctic) is a cooperative network of universities, colleges, research institutes and other organizations concerned with education and research in and about the North. The goal of the Thematic Network on Health and Well-being in the Arctic is to support sustainable development on health and well-being in populations in the circumpolar regions. The network aims to do so by

- promoting research projects and education on health;
- organising research training;
- distributing scientific information.

The network will base its research and higher education activities on the contemporary needs and priorities of the circumpolar regions and aims to promote a multidisciplinary approach to improve social circumstances for the populations, both in regard to health and well-being as well as delivery of health care and social services in the Arctic.

- Gert Mulvad (Lead) Institution: Ilisimatusarfik/University of Greenland
- Anastasia Emelyanova (Vice-Lead) Institution: University of Oulu
- Anna Reetta Rönkä (Vice-Lead) Institution: University of Oulu
- Sandra Juutilainen (Vice-Lead) Institution: University of Waterloo

PhD students



This summer our PhD student **Mikael Augustussen** received her PhD degree for her dissertation with the title 'Palliation to Greenlandic Cancer Patients in Greenland and in Denmark'. Mikaela is the first nurse educated in Greenland to receive a PhD degree. In her project, Mikaela conducted three studies with the aims to examine symptomatology and health-related quality of life among Greenlandic patients with advanced cancer, to examine relatives' level of satisfaction with advanced cancer care, and to uncover the health professionals' perspectives on the organization of palliative care with focus on barriers and potentials for the development of palliative care.

In August, the Centre's former research assistant **Trine Jul Larsen** started as a PhD student. In the coming three years, she will work on her research project with the title 'The use of artificial intelligence and telemedicine solutions, to assess diabetic eye diseases in Green-land'. A short description of her study is provided below:

According to population health surveys conducted since 1999 10% of the Greenlandic population has type 2 diabetes. Several genetic traits, including the TBC1D4 gene, have been identified and been associated with insulin resistance. However, long-term complications from diabetes, such as diabetic retinopathy (DR), have not yet been investigated in Greenland. The aim of this PhD study is (1) to test if deep learning based automatic grading can replace manual ophthalmological grading of retina fundus photos using Optos ultra-wide-field cameras, (2) to estimate the incidence of diabetic eye disease in individuals with diabetes and pre-diabetes, and (3) to investigate whether monogenetic diabetes forms, primarily the TBC1D4 gene, are associated with higher incidence of DR, and investigate if diet and physical activity modifies the genetically increased risk.



The study population consists of participants identified with diabetes or pre-diabetes in previous or on-going population health surveys (approximately 700 persons), who are invited for complications screening including eye screening using the Optos camera in the current Greenland population health survey conducted from 2017-2019. All retina fundus photos are graded by trained ophthalmological nurses and an ophthalmologist and graded by an automatic grading algorithm developed using neural networks. Incidence of DR will be assessed using Cox- and Poisson regression models and methods for grading retina photos will be compared using Bland-Altman plots and the variation will be assessed using a variance component model. The effect of the TBC1D4 variant and the potential modifying effect of lifestyle is modelled in a linear mixed effects model assuming a recessive interaction structure.

Extending our research capacity: a Greenlandic Steno Diabetes Centre

As a representative of GCHR, Gert Mulvad takes part in the steering committee for the establishment of a Greenlandic Steno Diabetes Centre. The steering committee was initiated in 2017. Marit E. Jørgensen and Postdoc Michael Lyng Pedersen are members of working groups. Our Centre has been active in diabetes research the past many years, such as the Greenlandic health surveys, research conducted by our adjunct researchers Marit E. Jørgensen and Michael Lyng Pedersen, and most recently our new PhD student Trine Jul Larsen. The past 10 years Michael Lyng Pedersen has worked with diabetes in Greenland's health care system, which includes treatment, monitoring and research.

It is the ambition that the Greenlandic Steno Diabetes Centre becomes a national knowledge centre for diabetes and related lifestyle diseases in Greenland, and that it will play a crucial role in advancing efforts in the field of diabetes and lifestyle throughout Greenland. Our centre will closely collaborate in the development of the diabetes centre with aim to strengthen research and cultivate capacity building in Greenland through PhDs and Postdocs.

In the future, the ambition is also to establish a data and tissue/specimen bank in Greenland in collaboration with biobanks in Denmark. Greenland is also increasingly taking part and building capacity in genetic research and health service research. Our research collaborations are expanding from the Greenlandic health care system, to other Danish and Arctic research centres and also Inuit collaborations in the Arctic.

Written by Gert Mulvad & Christine Ingemann

News from our researchers

Michael Lynge Pedersen – Post doc: Aspects of diabetes epidemiology and diabetes care in Greenland. Ten years of observation.

Since 2017, associate professor Michael Lynge Pedersen has been working on a post doc about diabetes based on 10 years observational research in Greenland. Funding was donated from Greenland's Research Council in 2016. A first draft was finalized in 2018 and the research project continues until the end of 2019.

Anders Koch – now employed as an infectious medicine physician at Queen Ingrid's Hospital



Anders Koch, specialist in infectious medicine, is now employed as an infectious medicine physician at the Medical Department, Queen Ingrid's Hospital, in Nuuk. The position is a shared position between *Rigshospitalet*, the National Serum Institute and the Greenlandic Health Service. Anders will 3 times a year be in Greenland for 2 weeks and the remaining time be an infectious medicine consultant for the Greenlandic Health Service. He will specifically be responsible for the tuberculosis area in Greenland, while also dealing with infectious diseases in general, including HIV.

Besides clinical experience, Anders has many years of research experience with infectious diseases in Greenland. He is an adjunct professor at Ilisimatusarfik, University of Greenland and is chairman of the Greenland Society of Health Research.

Ruth Montgomery-Andersen leaves GCHR

Ruth Montgomery-Andersen, independent researcher in the field of maternal and arctic health, has received the position as head of the Acting School at Greenland's National Theatre. This is an opportunity where she can make a difference in the Greenlandic society using both her artistic and research skills. She will therefore now have less time to research in areas that are not closely related to her new work. We are sad to see her step back from the arctic health research field, but we wish her the best luck in her new position and future projects.

Ageing in the Arctic (AgeArc) – research and activities in 2019

In the past two years AgeArc has focused primarily on fieldwork and data collection. The project is still engaged in research activities such as data processing and completion of research reports. Moreover, PhD student Mette M. Schlütter will continue her fieldwork activities. However, we now focus more on development and education activities based on the results of the research. The development and educational activities are planned and conducted in collaboration with a range of stakeholders and partners from various levels of society. Among these activities are:

- Internships for students of physiotherapy and psychomotorical therapy in two municipalities
- Development and testing of a book for reminiscence work
- Follow-up on the use of the accessible outdoor area Asiarfik
- Teaching at Culture and Social history, Ilisimatusarfik
- Development of educational material for the nursing program

Written by Tenna Jensen

The SIUTIT trial – a randomized control trial on children with middle ear infection

Preben Homøe has since the beginning of the late 1980s focused his research on middle ear infections in Greenland. A disease that is still very frequent and causes lifelong hearing loss. The high prevalence in Greenland should be demanding urgent health care efforts according to WHO's guidelines in order to improve the situation.

Preben is a professor in Otorhinolaryngology at the University of Copenhagen and has been appointed adjunct professor at Ilisimatusarfik, University of Greenland. Besides middle ear disease, Preben also performs studies of head and neck cancer in Greenland. At the moment Preben and his research group are engaged in a randomized controlled study - the SIUTIT trial - to investigate (1) the potential value of tympanostomy tube insertion in children with otitis media in Greenland, (2) the potential effect of the pneumococcal vaccine concerning otitis media in Greenlandic children, and (3) school children's hearing problems by applying a school-based survey.

Preben was in 2018 honoured with the Jack Hildes medal given for a long and outstanding research effort in the Arctic and has been serving in the board of the Danish/Greenlandic Society for Circumpolar Health for many years, nine years of these as a chairman.

Research project on diet-iodine-metabolism-hepatitis-BMI-bone-vitamin D – now with 20 years follow-up



The team in front of the nursing home Ipiarsuk in Nuuk, 2018. From left: Stig Andersen, Freja K. Andersen, Paneeraq Noahsen

It's been 20 years since the initial survey. This first study was conducted in 1998 by Stig Andersen and Peter Laurberg. In 2008, 10 years later, the study was repeated when Karsten Rex collected data with Stig and Peter as part of his PhD study on hepatitis in Greenland. Now another 10 years have passed and therefore a third data collection was conducted. Narkorsaq/physician and current PhD student Paneeraq Noahsen will collect the data and conduct the analysis focusing on metabolism in Greenland.

In the summer of 2018, Paneeraq examined study participants in Nuuk together with Stig Andersen and project employee Freja K Andersen. Elderly were examined either in the medical clinic if capable, or in the nursing home or Ippiarsuk.

In order to make the data from 1998 and 2008 comparable to 2018, the same questionnaire and the same methods for collecting urine and blood samples were used. We examined the same participants as before and added new participants within the same age group. New participants were selected based on the exact same criteria and method as prior.

This enables us to compare results across descriptions of developments over the past 20 years. Furthermore, data was compared with the Sagild and Lithauer's study from 1962-64. This made it possible to perform a 55-year follow-up on the development in BMI, supplementing 20-year follow-up with description of hepatitis, changes in vitamin D and calcium and bone turnover.



Paneeraq Noahsen examining participants in Nuuk,



Paneeraq Noahsen working at the laboratory in Nuuk.

Lifestyle changes and being Greenlandic provide new insights through comparisons across participant groups. The final data still needs to be collected before analyses can be commenced, which we are currently seeking funding for. The previous studies were supported by Karen Elise Jensen's fund and the Government of Greenland, and the initial data collection by The Obel Family Foundation. This summer's data collection was supported by the Beckett Foundation and the Government of Greenland.

And in the future? Of course, we have the ambition to re-examine participants in 10 and 20 years in order to provide both 30 and 40 years of follow-up and descriptions of the development in metabolism and iodine intake, hepatitis, calcium and vitamin D, and BMI in Greenland.

The study is based in Greenland and is part of Greenland's Centre for Health Research in collaboration with Arctic Health Research Centre at Aalborg University. The study was conducted by the following:

- Paneeraq Noahsen, specialist registrar at Queen Ingrid's Health Centre in Nuuk and PhD student at Ilisimatusarfik (University of Greenland) and Aalborg University.
- Karsten Rex, consultant at the Department of Internal Medicine, Queen Ingrid's Hospital in Nuuk and has deadline for his PhD on hepatitis in Greenland by February 2019.
- Freja K. Andersen, a high school student volunteering as a project assistant on the study in Nuuk.
- Stig Andersen, long-time consultant at the Medical Department of Queen Ingrid's Hospital in Nuuk, professor at Ilisimatusarfik (University of Greenland) and Aalborg University, and senior consultant at the Geriatric Department, Aalborg University Hospital. And a researcher in Greenland for more than two decades.

Written by Stig Andersen

Greenland's Health Survey 2018

As the fifth countrywide health survey in a row since 1993, data was collected from the autumn of 2017 and throughout 2018. Information included living conditions and life style, self-reported health and clinical examinations/blood samples for diabetes, cardiovascular and respiratory diseases, and sexually transmitted diseases. As a new component a specific questionnaire for youth and the elderly were added. Data collection will end in January 2019 and will comprise a total of 2300 participants from 19 towns and villages. Beginning in April 2019 the results will be published in reports to the Greenland Government as an input to the next Public Health Programme (Inuuneritta) and in scientific journals.

As a supplement to the general health survey, a study of diabetes complications in kidneys, eyes, nerves and cardiovascular system was conducted among participants identified with diabetes and prediabetes in the current and previous health surveys. Information was successfully collected among 500 participants.

Written by Peter Bjerregaard & Marit E. Jørgensen

Planned studies on the genetic diabetes variant TBC1D4 in 2019

During 2019 a dietary intervention study will take place in three towns on the west coast of Greenland. Carriers and non-carriers of the genetic diabetes variant TBC1D4 will be invited to participate in a dietary intervention. The trial compares cardiometabolic effects of four weeks intake of traditional Greenlandic foods with four weeks intake of western foods. It is expected that carriers of the genetic variant will reduce blood sugar levels after meals with the traditional diet low in carbohydrates and high in marine fats. The study will be carried out in collaboration between Steno Diabetes Centre Copenhagen, University of Copenhagen, and Ilisimatusarfik with Marit Eika Jørgensen and Aviaja Hauptmann being involved.

Written by Marit Eika Jørgensen

The Greenlandic geographic Birth Cohort ACCEPT

ACCEPT, established during 2010-2015 includes approximately 600 pregnant Inuit women and their child. The sampling was conducted in five regions North, Disko Bay, West, South and East with a participation reflecting the population density. The pregnant women belongings were set to where they had lived longest (more than 50% of their life).

Four papers have been published (Knudsen et al. 2015, Long et al. 2015, Terkelsen et al. 2017, Knudsen et al. 2018) and four manuscripts are in preparation; expected published before summer 2019.

Questionnaires for the mother's lifestyle and diet showed that the intake of traditional marine diet has decreased among pregnant women being 12-18% of total diet. Thus, imported food items are dominating.

The study population has a median age of 27.0 years (range: 18-43 years of age) and median pre-pregnancy BMI of 24.3 kg/m². Fifty percent had normal BMI $18.5 \leq 25$ kg/m², 46% BMI > 25 kg/m² (overweight) and 4% BMI < 18.5 kg/m² (underweight). Thus, if the Caucasian BMI norm can be used on Inuit, then there is a bit high percentage of overweight.

More than a third (35.5%) of the women were current smokers at the beginning of their pregnancy being significant different among the regions with the highest frequency in East (68%) and lowest in West (30.6%) following the order: East (E) > North (N) > South (S) > Disko Bay (DB) > West (W). The smoking status was confirmed by plasma cotinine, a marker of current smoking. Although there are signs of a decrease, the smoking among Inuit pregnant women is still too high.

In 2013 - 2015, 55% of the pregnant women reported to have smoked cannabis at some point of life. For alcohol consumption during pregnancy, the frequency was in general very low < 1 drink/month in 98-100%, but for North only 90%. There was a difference among the regions for parity, defined as a full-term pregnancy, being highest in the East region. In general, 50% of the pregnant women planned to breastfeed 6 to 12 months.

The blood level of lipophilic Persistent Organic Pollutants (POPs), perfluorinated alkyl acids (PFAS) and mercury correlated positively to age, marine food intake and smoking and were generally higher in the North and the East regions in accordance with higher intake of marine mammals. Compared to studies on pregnant women in Disko Bay and Nuuk during 1994-1999, the lipophilic POPs and lead levels had decreased.

The fetal growth seems to be affected by POP exposures and smoking. Smoking also seems to lower the blood Iron level (not published, in preparation).

Current ACCEPT research, the BioSund-ACCEPT project 2018-2021: In collaboration with Greenland Center for Health Research Ilisimatusarfik, we conduct the BioSund-ACCEPT project. BioSund-ACCEPT includes questionnaires to follow-up on the ACCEPT child health and development and follow-up on possible change in the mother's lifestyle and health. Also, the ACCEPT fathers health and lifestyle will be included. Blood, hair, nail and urine will be collected for POP and metal measurements and toxicological analyses.

Written by Eva Cecilie Bonefeld-Jørgensen

Breast cancer risk in Greenland: Associations with lifestyle and diet, environmental exposures, and genetics

- PhD dissertation by Maria Wielsøe 15th May 2018.
- Supervisor Professor, Eva C. Bonefeld-Jørgensen and co-supervisor Associated Professor Manhai Long, Aarhus University.
 - Assessment committee: Chairman Professor Kim Overvad, Professor Arja Ratio, Oulu, Finland; Associated Professor Caroline Diorio, Quebec, Canada

The study was conducted in collaboration with the Greenlandic Health System, Nuuk. It was a case-control study matched on age and region with the sampling period 2000-03 & 2010-2014. The total number of study participants was 97 Inuit women cases and 93 Inuit controls equal to approximately 80% of all breast cancer cases in this period. The study included questionnaires on diet and lifestyle, and measurement of POP blood levels and genetic analyses.



Summary:

Diet and breast cancer in Greenland

- No significant association between traditional or imported food items and breast cancer was observed
- Significant protective effect of fruit and vegetables was found

Environmental contaminants (POPs) and breast cancer in Greenland

- Higher POP blood levels were found in cases compared to controls
- Significant positive association between POPs and the risk of breast cancer
- The risk seems stronger for perfluorinated alkyl acids (PFAS) than lipophilic POPs

Gene-environmental (POP) interaction and breast cancer risk

- Genetic variations in the P450 fase-1 and fase-2 enzyme system can increase the individual risk of breast cancer upon exposure to POPs especially PFAS.

Written by Maria Wielsøe

Patient involvement in Greenland hospital care: a clinical research project

Healthcare is undergoing a paradigm shift towards family- and patient centeredness. However, to ensure implementation, the concept needs adjustment to health care in Greenland. The aim is to identify areas for patient involvement by investigating:

- Patients and relatives' motivation, opportunities and action competences
- Health professional attitudes and organization of pathways

The project takes place in a partnership between Greenland Centre for Health Research and Department of Surgery at Queen Ingrid's Hospital in Nuuk. The results will be action-oriented and form a basis to develop and implement patient involvement in clinical practice. The time frame of the research project is 1.10.2018-30.9.2020.

Written by Lene Seibæk & Lise Hounsgaard

The Centre's educational activities

Double PhD enrolment (double/joint degree)

The PhD School at the University of Greenland (Ilisimatusarfik) offers an international research education in three different programs: 1) Arctic Studies - Health and Social Conditions, 2) Arctic Studies - Pedagogy and the Science of Education, and 3) Arctic Studies - Culture, Language and Social Conditions. The purpose of the education is to qualify the student to do research, development and instructional tasks and to transmit scientific problems and issues in the Arctic. All students must be assigned to one of the programs.

The PhD School offers two kinds of PhD educations with various lengths: an ordinary program (for an expected three years) and an assistant professor with PhD-program (for an expected six years). The PhD School is willing to make partnership agreements with other research institutions and foreign universities e.g. regarding double enrolment (double /joint degree). Double enrolment as an assistant professor with a PhD program requires an individual agreement approved by the PhD council and the head of the institute.

The application to apply for enrolment as a PhD student at Ilisimatusarfik is available at the university website. If interested, please feel free to contact head of PhD council at Arctic Studies, Health and Social Conditions, Head of Research, Professor Lise Hounsgaard, lhounsgaard@health.sdu.dk.

Nursing students enjoying their new classrooms

After the summer break, 5th semester nursing students became the first ones to enjoy the new facilities of the new University building. The nine nursing students received a classroom right across the offices of the GCHR researchers, thereby physically moving education and research closer to each other. In their 5th semester the students receive lectures in research methods and ethics. The students are very happy with their new study environment and enjoy the academic atmosphere.



Second Ph.D. course at the University of Greenland in collaboration with UArctic

15 Students from various health disciplines and from across the Arctic have come together in Nuuk (Greenland) to learn more about circumpolar health from experienced scholars. This 5-day Ph.D. course was organised by UArctic in collaboration with the University of Greenland Ilisimatusarfik hosted by the Greenlandic Centre for Health Research. The course took place from the 25th to 30th of June 2018.

The attending students have travelled to Nuuk from five different regions in the Arctic, such as Alaska, Russia and Greenland. The course did not only provide the students with valuable insights into research methods and health trends in the Arctic but facilitated a platform where young researchers can exchange knowledge, start collaborations and network. Establishing such a forum for this next generation of Arctic researchers is crucial



for current and future research collaborations. One way the course facilitated this was by inviting all students to present their research projects and inviting fellow students and lecturers to provide feedback and give comments on the presentations.

As Norwegian Professor Jon Øvind Odland pointed out in his lecture on Arctic Global Health “we need to research and collaborate across disciplines in order to be able to solve the complex challenges we are confronted with in the Arctic”. This is also something the course emphasised by inviting participants from various research disciplines and backgrounds. These included backgrounds in Medicine, Nursing, Pharmacology, Biology, Natural-, Social- or Health Sciences, and Public- or Global Health Sciences.

On the first day Jon Øvind Odland (Tromsø University) jumpstarted the course with a global perspective on Arctic Health and how the challenge of the contaminated waters in the Arctic are closely connected to environmental pollutions from the rest of the World. The following days, the students received skills in demography and participatory research, the former taught by Anastasia Emelyanova (UArctic, Oulu) and the latter by Rhonda Johnson (Anchorage University). Christina VL Larsen (Centre of Public Health in Greenland) provided insights into Greenland’s national health surveys, Maria Wielsøe (Centre of Arctic Health & Molecular Epidemiology, Aarhus University) introduced the ACCEPT study in Greenland, and Arja Rautio (Oulu University) discussed the importance of ethics and multidisciplinary research with the students.

Next to all the vibrant, scientific discussions there was also time for getting to know each other on a personal level. Here, Gert Mulvad, the host of the course, organised different social events. Students and lecturers enjoyed tapas at the old harbour in Nuuk, learned about the history of Greenland's University and gathered in smaller groups throughout the week.



*Written by Christine Ingemann & Ivalu K. Sørensen
(Centre of Public Health in Greenland, SIF, SDU)*

Global Health course for SDU Master students

In August, 9 Global Health students from the University of Southern Denmark travelled to Kangerlussuaq, Sisimiut and Nuuk. Prior to their two weeks stay in Greenland, they attended the ICCH17 (17th International Congress on Circumpolar Health). In Greenland, they first visited the nursing station in Kangerlussuaq and the regional hospital in Sisimiut. They then travelled to Nuuk with the coastal ship, where they received a thorough introduction to the Greenlandic culture, history and politics through presentations from representatives of the Board of Health and Prevention, Ilisimatusarfik (the University of Greenland) and the national hospital (Queen Ingrid's hospital). The presentations provided the students with a better understanding of the health system's many strengths as well as its challenges. Finally, they visited the different departments of the national hospital.

Written by Mette M. Schlütter

PhD course 'Ethnographic methods and qualitative analysis in the Arctic'

From the 24th to 28th of September the Centre held a Ph.D. course on 'Ethnographic methods and qualitative analysis in the Arctic'. Here, researchers from Ilisimatusarfik, Aarhus, Aalborg and Copenhagen University provided students with insights into their field experiences. Rector and associate professor Gitte Adler Reimer and professor Lill Rastad Bjørst taught the students about conducting field work in Greenland, while professor and anthropologist Line Dalsgård provided insights from her research in Brazil. MA Tenna Jensen introduced the students to methods used in history research, and associate professor Kennet Pedersen introduced to arctic and Greenlandic literature. In group work sessions students had the opportunity to receive hands-on feedback and input to their current research and data. The course was organized by professor Lise Hounsgaard and Ph.D. student Mette M. Schlütter.

Written by Christine Ingemann

Upcoming activities in 2019

Global Health course for SDU Master students

As in 2018, we will host Master students taking the Global Health course at the University of Southern Denmark in August 2019. The course program is expected to be slightly different, since there won't be any relevant conference for the students attend. However, we already have interesting ideas for providing a 'global' program for the students.

NNEN field course on 'Remote nursing education & life-long learning'

The UArctic Northern Nursing Education Network (NNEN) is jointly led by the UiT Arctic University of Norway and the University of Saskatchewan (U of S). Ilisimatusarfik (University of Greenland) is part of this network and will be hosting the Interprofessional Innovative Learning Institute on Circumpolar Health Field School in August 2019.

1st Announcement - Call for applications 21st to 30th of August, 2019

Field school on 'Remote nursing education & life-long learning'

Interprofessional Innovative Learning Institute on Circumpolar Health





Tentative program

- Visit to nursing station in Kangerlussuaq
- Visit to healthcare center in Sisimiut
- With the Coastal ship to Nuuk
- Visit to national hospital in Nuuk
- Relevant educational & social program throughout the week



Apply for attending our Field School in Greenland! 21st to 30th of August 2019

You will learn about Greenland's healthcare system and the current and future practices in remote learning in the Arctic

The UArctic Northern Nursing Education Network (NNEN) is jointly led by the UiT Arctic University of Norway and the University of Saskatchewan (U of S). Ilisimatusarfik (University of Greenland) is part of this network and will be hosting the Interprofessional Innovative Learning Institute on Circumpolar Health Field School in August 2019.

WHY SHOULD YOU APPLY?	WHAT WILL YOU GAIN?	HOW TO APPLY?	Collaborative partners   
<p>You will:</p> <ul style="list-style-type: none">• meet fellow students from the Arctic region• meet the beautiful Greenlandic culture and nature	<p>You will:</p> <ul style="list-style-type: none">• learn alternative ways of thinking about access to education & service in health• collaborate & contribute to an innovative model on remote learning	<ul style="list-style-type: none">• Contact your local student counsellor• We have 10 scholarships for nursing students: 2 from Greenland 8 from the circumpolar area	

NUNAMED & PhD course



From the 5th to 7th of October 2019 the NUNAMED conference will take place in Nuuk. The conference provides an opportunity for Greenlandic health professionals and researchers to learn about the many research projects conducted in Greenland, while also presenting their own. Therefore, there will be sessions in English as well as Greenlandic. Also, many international researchers from our Arctic neighbours attend this conference to present work, learn more about Greenland and to network. We are looking very much forward to this event, which the Greenland Centre of Health Research is co-organising.

Prior to the conference, a PhD course for Master students and PhD candidates will be held from the 2nd to 4th of October 2019.



PhD-Course
Community based health research – methods and strategies
 October 2nd – October 7th, 2019

Course Overview

Lectures about general population in the Arctic. Planning Community based health research and implementation
 Case study in Arctic Health: Group work.
 Lecture to introduce the multidisciplinary research, collaboration, questions of ethics from research examples.
 All session will have group work and discussion

NUNAMED conference will be a part of the PhD course and all students have a presentation at the NUNAMED conference.

Specific topics:

- Arctic Population modeling its future by levels of education
- Demographic measures
- Participatory research methods
- Community engagement
- Ethical challenges.
- Multidisciplinary research
- Good practices of study design
- All student have presentation at the NUNAMED conference

More specific program a literature list will be send to all participants

Course details and program on page 2



Course Details

Academic level(s)	PhD, pre-PhD
Country	Greenland
Language	English
Institution	University of Greenland
Start date	2nd October 2019
End date	7th October 2019 (5th-7th NUNAMED)
Registration deadline	1.08.2019 (gm@peqqik.gl)
ECTS credits	3.0
Location	Greenland Centre of Health Research, University of Greenland, Nuuk, Greenland

Tags: Community based Research, Implementation, Involvement, Multidisciplinary

Program

Community Based Health Research

Gwen Healey MSc, PhD, Executive Director Qaujigiartit Health Research Centre
 Beth Rink Associate Professor, Community Health, Montana State University

Arctic Health and Diet

Magritt Brustad Professor, dr.scient., Head of Department of Community Medicine, Arctic University of Norway
 Jon Ø. Odland Professor of Global Health University for Science and Technology, Trondheim

Diabetes and Inuit

Michael Lyng Pedersen MD GP Associated professor Ilisimatusarfik
 Marit E. Jørgensen Professor PhD Ilisimatusarfik and Steno Diabetes Center Copenhagen.

Health research at the Hospital

Lene Seibæk, Associate professor, PhD, Ilisimatusarfik and Aarhus University
 Karsten Rex MD, GP, PhD - stud. Department of Clinical Medicine, Aalborg University Hospital / Greenland Centre of Health Research, University of Greenland

To be old in the Arctic

Tenna Jensen Associated Professor SAXO Institute
 Stig Andersen Professor Ilisimatusarfik and Aalborg University

Examples of Arctic health research project Contaminant, Ear diseases and Infectious diseases, Community Based Research

Anders Koch Professor Ilisimatusarfik
 Preben Homoe Professor Ilisimatusarfik and Copenhagen University
 Eva Bonfeld-Jørgensen Professor Ilisimatusarfik and Aarhus University
 Peter Vedsted Professor, Leading regional doctor, Region Avannaq, Greenland

For further information contact Gert Mulvad gm@peqqik.gl

Course Directors

Professor Lise Hounsgaard
 Ilisimatusarfik/University of Greenland

MD, Doctor h.c Gert Mulvad
 Ilisimatusarfik/University of Greenland

Publications in 2018

Peer-reviewed articles

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Oral & poster presentations

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Aagaard, T. (2015). Etik, kultur & viden. *Tikiusaaq* nr.2, side 10.

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