

Annual report 2019



Greenland Centre for Health Research

Institute of Nursing and Health Research, University of Greenland



Preface from the Head of the Institute

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

Head of Institution of the Institute of Nursing and Health Research

Content list

Preface from the Head of the Institute	2
Letter from the chair	3
Recognition of Peter Bjerregaard's contribution to GCHR	4
About Greenland's Centre for Health Research	5
Centre activities in 2019	7
News from our researchers	16
The Centre's educational activities	21
Upcoming activities in 2020	24
Publications in 2019	25
Publications from previous years	28

In this annual report, the advisory committee is presenting its scientific activities conducted in 2019. 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 of 2019, which provides an overview of another active year. The NUNAMED conference and the PhD course were very important events with more than 100 presentations at NUNAMED, and 36 students and professors participating in the PhD course that took place in relation to NUNAMED.

The relation between Steno Diabetes Center Greenland (SDCG) and Greenland Centre for Health Research is important for health research in Greenland. Strengthening research is one of the SDCG's core efforts. Therefore, in the vision statement for SDCG it was recommended that Greenland Centre for Health Research appoints a representative to the Board of SDCG.

Greenland's natural conditions, the rapid social changes taking place in the Greenlandic society, and the development of technology place great demands on people in Greenland and create unique health challenges. The nature and extent of health challenges differ from those of other countries.

The health care efforts in Greenland must therefore be based on a combination of general medical knowledge and knowledge generated through studies of health conditions in Greenland's population. Finding and applying a solution to Greenland's health problems must take place on the country's own premises under the participation of Greenland's own healthcare and health research system. Essential to reaching a satisfying and improved health care is having necessary quality controls carried out continuously. These must be supported with ongoing research into optimizing preventive and therapeutic efforts, and innovative research.

The Greenland Centre for Health Research promotes and strengthens Greenlandic health research for the benefit of the Greenlandic population and society. This is done by anchoring research in the Greenlandic healthcare system and society through research training and capacity building, and by promoting high quality research through solid network-building.

Gert Mulvad



Recognition of Peter Bjerregaard's contribution to GCHR

Since 1979, Peter Bjerregaard has been and still is an active health researcher in Greenland. Peter is a professor at the National Institute of Public Health at the University of Southern Denmark. Here, he has held a professorship in Arctic health since 1996 and since 2013 he has been an adjunct professor at Ilisimatusarfik – the University of Greenland.

Peter has devoted his academic life to strengthening public health in Greenland and in other Inuit communities through research, monitoring and the development of the Greenland Population Health Surveys.

There is a great need for us to adapt our health efforts to the specific cultural and societal conditions of the Arctic. It is an area that is not otherwise a high priority at national level, but it is precisely one area that Peter's research has focused on in the Arctic context.

Peter has made a great contribution and taken part in a number of activities such as the Greenland Medical conference NUNAMED, the establishment of our Greenland Centre for Health Research and Danish Greenlandic Society for Circumpolar Health (Grønlandsmedicinsk Selskab).

We sincerely thank Peter for his participation in the Advisory Committee for the Greenland Centre for Health Research.

*On behalf of the GCHR advisory committee,
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)
- 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
- Tine Pars, PhD - 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 Lyng 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**, Associate professor, RN, PhD
- **Aviaaja L. Hauptmann**, Postdoc
- **Ingelise Olesen**, Research assistant

PhD students

- **Anna Maria Anderson**, Physician
- **Christine Ingemann**, BScN & (Res)MSc Global Health
- **Karsten Rex**, Physician (graduated)
- **Mette M. Schlütter**, MA anthropology
- **Paneeraq Noahsen**, Physician
- **Trine Jul Larsen**, BScN & MSc Public Health

Assigned researchers

- **Anders Koch**, Professor, Chief physician, PhD, MPH
- **Christina VL Larsen**, Senior Advisor, Centre director, PhD
- **Eva C. Bonefeld-Jørgensen**, Professor, Centre director, PhD
- **Marit E. Jørgensen**, Professor, senior physician, PhD
- **Michael Lyng Pedersen**, MD, GP, associate professor, PhD
- **Peter Bjerregaard**, Professor, MD, Dr. Med. Sci.
- **Preben Homøe**, Professor, senior physician, Dr. Med., PhD
- **Stig Andersen**, MD, PhD, PGCME, Clinical professor, Department Head
- **Tenna Jensen**, Associate professor, PhD

Affiliated researchers

- **Karen Bjørn Mortensen**, PhD & physician
- **Tine Aagaard**, PhD, adjunct

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

Centre activities in 2019

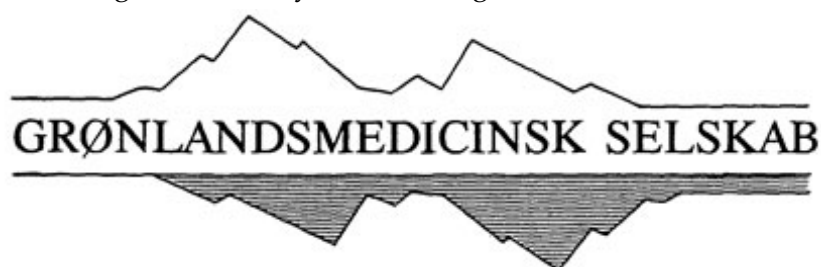
Open meetings of the Danish-Greenlandic Society for Circumpolar Health

On the 26th of March, the local department of the Danish-Greenlandic Society for Circumpolar Health held an open meeting at the Centre with the following presentations:

- 'Præsentation af Steno Diabetes Center Grønland' by Marie Backe, consultant at DIH, & Ella Skifte head in-charge nurse of the Greenlandic Healthcare System
- 'Forskning på Steno Diabetes Center Grønland' by Gert Mulvad, physician & GCHR
- 'Brug af kunstig intelligens og telemedicinske løsninger til undersøgelse af diabetisk øjensygdom i Grønland' by Trine Jul Larsen, PhD student, Ilisimatusarfik
- 'Smagen af Grønland' by Aviaja Lyberth Hauptmann, PhD, Postdoc Ilisimatusarfik
- 'Kostens kulturelle forankring' by Tenna Jensen, associate professor, KU & Ilisimatusarfik

On the 2nd of December, another open meeting was held at the Centre with presentations from the 10th NUNAMED and PhD students:

- 'Hepatitis among Greenlanders in Denmark and in Greenland, and the outcome of chronic HBV-infection in Greenland' by Karsten Rex, PhD & physician
- 'Atopic dermatitis amongst children and adolescents in the Arctic region: A systematic literature review between 1990-2019' by Anna Maria Andersson, PhD student & physician
- 'Syphilis in Greenland 2012-2019' by Marianne Welzel Andersen, physician
- 'Prevalence of latent tuberculosis in Greenland' by Andreas Brix Juel Pedersen, physician
- 'Befolkningsundersøgelsen 2018' by Christine Ingemann, research assistant



Researchers at the Centre

On the 8th of March 2019, **Michael Lyng Pedersen** defended his postdoc thesis on diabetes in Greenland conducted at the Greenland Centre for Health Research. The doctoral thesis was defended at the Faculty of Health Sciences at the University of Aarhus. The results were presented on March 21st at the Greenland Centre for Health Research and subsequently received by the Health Management of the Greenlandic Health Service.

Some of the studies learning points were:

- A health care model based on continued monitoring, analysis, and adjustment of initiatives taken can be used to improve diabetes care even in the dispersed population of Greenland.
- A universal electronical medical record system represents a possibility to facilitate diabetes care in the clinical consultation, at regional and national level.

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- A multifaceted initiative targeting the organization, the health care professionals, and the patients can be used to increase diagnostic activity, prevalence of diagnosed diabetes, quality of diabetes care, testing for gestational diabetes and microvascular complications.
 - The Greenland model of diabetes care potentially can improve health care of other chronic diseases in Greenland and may be useful in other remote settings.



Nick Wareham, Michael Lyng Pedersen, Guy Rutten, Bjørn Richelsen



Christina Viskum Lytken Larsen has become assigned senior researcher in 2019.

Christina Viskum Lytken Larsen, Senior advisor and research group director Centre for Public Health in Greenland, National Institute of Public Health, University of Southern Denmark.

Dr. Larsen is a sociologist by training (University of Copenhagen, 2006) and completed her PhD in Public Health (University of Southern Denmark, 2014). She has lived and worked in the Arctic with her

family since 2006. She is the research director of the Centre for Public Health in Greenland (based in Copenhagen) and responsible for the research-based consultancy for the Greenland Ministry of Health (Government of Greenland). She is the PI for the Greenland Health Survey conducted for the Ministry of Health every four-six years.

Dr. Larsen is also a Fulbright Scholar and part of the second Fulbright Arctic Initiative cohort (2018-19). Recently Dr. Larsen became adjunct senior researcher at Greenland's Center for Health Research at the University of Greenland (Ilisimatusarfik).

Her research interests are especially implementation science, social inequality in health, mental health and resilience, youth, suicide prevention and the influence of the ongoing social transition

on the health of the Greenland Inuit. Based on The Greenland Health Surveys she works with social epidemiological research to improve our understanding of health among indigenous populations in the Arctic. Furthermore, her ambition is to move public health research in Greenland in a more community- based direction with a focus on interventions as well as building on and strengthening local capacities.

Dr. Larsen has been the President of the Circumpolar Health Research Network since 2015 and member of the Board for the Danish/Greenlandic Society for Circumpolar Health from 2015-2019. Dr. Larsen has been involved in Arctic Council Mental Health Projects under the Sustainable Development Working Group for a decade and has represented the Greenlandic Ministry of Health in the Arctic Human Health Expert Group (AHHEG) since 2015, which serves as an advisory expert group to SDWG.



Tenna Jensen, who became an affiliated researcher at GCHR in 2018, is now an assigned associate professor at the Greenland Centre for Health Research.

Health and Wellbeing in the Arctic - UArctic Thematic Network

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, and 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 population 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

Main Activities

- PhD Program in Arctic health
- Summer and winter schools (graduate level)
- International research projects
- Working groups

Current and Planned Activities

- One Health One Future Conference – University of Alaska, Fairbanks (March 11-14, 2020)
- PhD Course – Community based health research methods and strategies – Nuuk, Greenland (October 2-7, 2019)
- Nunamed conference, Movement in Health – Nuuk, Greenland (October 5-7, 2019)

The 10th NUNAMED – Greenlandic medical conference in Nuuk



Greenland Centre of Health Research is co-organised from the 5th to 7th of October 2019 the 10th NUNAMED – Greenlandic medical conference was held in Nuuk by the following organisations: The Danish Greenlandic Society for Circumpolar Health (Grønlandmedicinsk Selskab), Peqqissaasut Kattuffiat (Grønlands Sygeplejeorganisation), The Physicians' Association for Greenland (Grønlands Lægekredsforening) and the Greenland Institute for Nursing and Health Research.

The NUNAMED conferences are organized approximately every third year in Nuuk. With 165 participants at the first conference in 1991, we again broke our own record this year with about 340 participants. While the majority of participants were from Greenland and Denmark, we also had a great international and circumpolar representation from Canada, Norway, Alaska, Finland, Sweden, Faroes Islands, and Australia.

In total 12 keynotes and 33 sessions with 140 presentations and 5 posters in both Danish and English were held. Research and discussions from across health disciplines and thematic areas were represented, ranging from genetics, infectious diseases, environmental health, mental health, perspectives of the arctic youth, research ethics, diabetes and heart diseases, ageing in the arctic, patient care and experiences, traditional diet and much more. All abstracts are available in the NUNAMED abstract book on www.nunamed.org

Overall the conference was very successful, and participants appreciated the familiar and relaxed atmosphere present throughout the conference.



Keynote - Michael Lynge Pedersen



Presenters from the session: Hørelse og Mellemeinfektioner

GCHR's representation at the 7th Arctic Circle Assembly 2019

Gert Mulvad and assigned/affiliated researchers of the GCHR attended and presented at the 7th Arctic Circle Assembly 2019. Peter Bjerregaard and Christina VL Larsen, for example, presented the most recent results from the Greenlandic population survey in the sessions 'Public Health among Indigenous peoples of Greenland and Sápmi' and 'Ageing and social relations'.

PhD students

The day after the 10th NUNAMED conference in Nuuk our PhD student **Karsten Rex Fleischer** received his PhD degree for his dissertation with the title 'Hepatitis among Greenlanders in Denmark and in Greenland, and the outcome of chronic HBV-infection in Greenland'.

Hepatitis B-infection (HBV-infection) is a global health problem that can lead to comorbidities such as cirrhosis of the liver and hepatocellular

carcinoma (HCC). Due to poor prognosis, liver cancer (HCC) is the third most common cause of cancer-related deaths. In areas in Greenland, the prevalence of HBV has been found to be as high as 29%. Due to the low incidence of HCC among chronically infected Hepatitis B carriers in Greenland, a more benign course has been assumed here than in other places in the world.

The overall aim of this PhD dissertation is to highlight the burden of disease in HBV infection in the Greenlandic population. This was assessed through two population-based studies by comparing the incidence of hepatitis B, D and C infections in Greenland with Greenlanders in Denmark. In addition, to assess survival and disease burden over a 10-year period, review all available records and electronic patient records for participants from Greenland. Secondly, cultivating a foundation for a possible monitoring program is based on work in Greenland.

A total of 671 Greenlanders in Greenland and Denmark were included in the study. There were no differences in the prevalence of serological markers for hepatitis B, D and C found. Our study showed no evidence of differences in liver or clinical signs of disease when comparing HBV-infected with non-infected. However, there may be differences in liver biochemistry based on ethnicity. The survival analysis shows a markedly reduced lifespan for the HBV-infected middle-aged compared to non-infected over a 10-year period.



Developments in general in Greenland provide good opportunities for improvements in HBV-monitoring. HBV-vaccine for all unexposed Greenlanders and immigrants will be an effective way of reducing HBV-related problems in the future.

Academic supervisors:

- Stig Andersen, MD, PhD, Professor, Head, Arctic Health Research Centre, Department of Clinical Medicine, Aalborg University Hospital, Denmark & Professor adj. Ilisimatusarfik
- Henrik Krarup, MD, PhD, Head, Department of Molecular Diagnostics, Aalborg University Hospital, Denmark
- Michael Lynge Pedersen, MD, PhD, DrMedSci, District Medical Officer, Dronning Ingrid's Sundhedscenter, Nuuk, Greenland & Associate Professor, Ilisimatusarfik

Assessment committee:

- Gerda Elisabeth Villadsen, MD, PhD, Associate Professor, MD Department of Clinical Medicine, Aarhus University, Denmark
- Prabhu P. Gounder, MD, MPH, FACP, Medical Director, Bureau of Disease Control/Communicable Disease & Prevention, Department of Public Health, Los Angeles, USA
- Anne Merrild Hansen (formand), Professor, Center for Environmental Assessment, Aalborg University Hospital, Denmark & Professor adj. Ilisimatusarfik



In November 2019 **Malene Nøhr Demant** received her PhD degree for her dissertation with the title 'Otitis media in Greenlandic Inuit children – Management, intervention and perceptions in a high-risk population'.

Academic supervisors:

- Preben Homøe, Professor, Zealand University Hospital, Køge, Denmark
- Ann Hermansson, Professor, Lund University Hospital, Lund, Sweden
- Ramon Gordon Jensen, Associate professor, Rigshospitalet, Copenhagen, Denmark

Assessment committee:

- Anders Koch, Professor, Ilisimatusarfik and University of Copenhagen, Denmark
- Peter Morris, Professor, Menzies School of Health Research, Australia
- Sten Hellström, Professor, Karolinska University Hospital, Sweden



In August **Anna Maria Anderson**, a PhD student from the University of Copenhagen and Ilisimatusarfik, arrived in Greenland together with her family. She is planning on staying in Nuuk for one year in order to collect data for her PhD project with the title 'Investigation of atopic dermatitis in Greenland; distinct genotypes, phenotypes and immunotypes'. A short description of her study is provided below:

Atopic dermatitis (AD) is a chronic inflammatory itchy skin disease, associated with allergic and psychiatric comorbidities. It is the most common skin disease in childhood and affects approximately 20% of children in western countries. Despite intensive research over the past decades there is still poor insight in environmental and genetic risk factors of AD. Notably, the main part of our knowledge relies on research conducted in adults in western countries.

The settings in Greenland differ on many parameters from the conventional western society, such as living conditions, diet, climate and genetic admixture. Based upon successful findings from studies performed in small populations, we hypothesize that, by studying atopic dermatitis in Greenland, we may provide a break-through in AD research.

We will establish a large cohort of 1,400 children in Greenland to describe prevalence of and genotypes associated with AD. By examining children with AD we will be able to describe phenotype and immunotype, bacterial load and specific risk factors for AD amongst Inuit children. Of this cohort, we will establish a sub-cohort of 25 Danish children with AD for further phenotype, immunotype, and microbiome comparisons.

This study foresees a unique opportunity to examine AD from a different perspective and hopefully identify meaningful environmental and genetic risk factors.

The following 3 papers are anticipated:

- A questionnaire-based cross-sectional study of atopic dermatitis in Greenlandic Inuit children
- A phenotype, immunotype and microbiome comparison of Danish and Inuit children with atopic dermatitis
- A genome-wide association study in Greenlandic Inuit children – an investigation of common genetic variants associated with atopic dermatitis



In September, the Centre's former research assistant **Christine Ingemann** started as a PhD student. In the coming three years, she will work on her research project with the title 'From manual to practice: The implementation process of the parent-education program MANU 0-1 in Greenland – A qualitative study in dialogue with practice'. A short description of her study is provided below:

Figures from the 2014 Greenland Population Survey showed that 66% of the adult population had grown up in a childhood home characterized by problems with alcohol, violence, or sexual abuse. In MANU 0-1, an educational program for expecting parents, the focus is therefore on parents reflecting on their

own childhood, while figuring out together what childhood they want to give their own child. The purpose of this PhD project is to investigate how MANU 0-1 is implemented from manual to practice locally and how the program is perceived by parents. This will be investigated through case studies from three different health regions where qualitative interviews with professionals and parents will be conducted. The theoretical framework of the project is based on system perspective and implementation theory. Through the use of participatory methods, an ongoing dialogue with practices is ensured, with the aim to create anchoring and application of the PhD project.

Steno Diabetes Center Greenland in relation to the Greenland Centre for Health Research

Close cooperation with other research institutions is central to ensuring the breadth and quality of the Steno Diabetes Center Greenland's research. The Greenland Centre for Health Research and the other research institutions in Greenland currently have well-established networks. GCHR collaborates with a large number of Greenlandic and international research institutions, which support interdisciplinary research projects as well as teaching and lectures at the centre. It would be an obvious choice for SDCG's research to tie in on these existing research institutions and networks.

The Healthcare system and GCHR also already have a close collaboration with Danish hospitals and institutions, for example, Statens Serum Institute and Danish hospitals that store Greenlandic tissue, data, blood tests and more.

Strengthened collaboration

Based on the established collaborations in health research, SDCG will use the opportunity to establish new and closer ties. Close collaboration is important between SDCG's areas of research: research and treatment, interdisciplinary collaboration, competence development, quality and telemedicine. The collaboration should support research-based and clinical development measures to assess the implementation into practice in the healthcare system. SDCG's research should be coordinated with research from GCHR. The research must be practice-oriented and promote quick knowledge dissemination to support and improve nationwide practice and quality. Essential to this is a close collaboration with the healthcare system and its personnel on, for example, coordinating data collection, quality advancements, and competence development.

To the Board of SDCG - A representative appointed by the Greenland Centre for Health Research

A strengthened research effort is one of SDCG's aims. Therefore, it was recommended that the Greenland Centre for Health Research may appoint a representative. This recommendation has been approved by both Naalakkersuisut and the Board of Trustees in relation with the presentation of the SDCG's vision.

From SDCG's presentation of their vision

Lancet Commission on Arctic Health

Gert Mulvad will as a chair of GCHR serve as a member of the Lancet Commission on Arctic Health. The launch meeting will take place in February 2020 at Dartmouth College in Hanover, New Hampshire, USA. The vision statement of the commission is as follows:

The Lancet strives to make science widely available so that healthcare delivery and knowledge can transform society and improve lives. As part of this goal, The Lancet has endeavored to bring leading researchers and advocates together to form Commissions arranged around health topics where progress must be made. Global Health Commissions gather global perspectives and comprise the most current data and guidelines to identify where there are gaps in the literature or policy agenda. Commissions stand as authoritative, cutting-edge, scholarly reports but they also serve as powerful advocacy tools and levers for policy change.

In response to the dramatic challenges confronting Arctic populations and to the conspicuous neglect of this region by the global health literature and policy agenda, The Lancet is organizing a Commission on a topic of critical importance – **Arctic Health**.

In partnership with Dartmouth College and the Institute for Circumpolar Health Research, The Lancet has organized a group of 25 Commissioners to examine health challenges facing Arctic communities, explore linkages between the traditional global health agenda and Arctic Health frameworks, and define priorities for global cooperation around Arctic Health. Lessons from the Arctic for the global health community, including Arctic governance and cooperation and community-based methodologies, will be a central focus of the Commission's work.

At the launch meeting the vision for the Commission will be reviewed, key priorities for the report and accompanying materials will be discussed, and a roadmap for the commission's collaboration will be developed.

News from our researchers

At the end of 2019, Aviaja L. Hauptman will end her postdoc project *The Greenland Diet Revolution*, which looked at microorganisms on traditionally dried foods from Greenland and initiated projects about our intestinal flora in Greenland as well as a project on fermented little auk (seabirds) from North Greenland.

In November, Aviaja received the Carlsberg Foundation's internationalization grant of DKK 850,000 for a two-year residency at the University of California Davis, where she will have the opportunity to gain expertise in the microbiology of fermentation while advancing projects developed during the dietary revolution project. Aviaja's new project is called *UMAMI: Unusual Microbiomes and Metabolites of Inuit foods* and is about traditional fermented foods from Greenland.

Aviaja L. Hauptman

During Spring 2019 we launched the results from the latest Greenland Population Health Survey conducted in 2018. The report states the general health and well-being in Greenland among the population aged 15 years or older. The Survey was carried out by Centre for Public Health in Greenland in close collaboration with Steno Diabetes Centre Copenhagen and in Nuuk based out of Greenland's Centre for Health Research. Please find the report in Danish and Kalaallisut at www.sdu.dk/sif.

For me personally 2019 was also the year where I was granted the opportunity to represent Greenland and Denmark in the Arctic Fulbright Initiative II. During 18 months a transdisciplinary and cross-Arctic collaboration I worked with scholars from the eight Arctic Nations with a focus on strengthening the conditions for 'Resilient Communities' and 'Sustainable Economies' in the Arctic. Please find our recommendations presented in October at the Woodrow Wilson Center here: https://www.wilsoncenter.org/sites/default/files/fulbright_arctic_policy_brief_web.pdf and a link to the seminar itself: <https://www.wilsoncenter.org/event/fulbright-arctic-initiative-research-and-policy-findings-for-sustainable-arctic-communities>

And stay tuned for a third round of Fulbright Arctic Initiative here:

<https://www.cies.org/program/fulbright-arctic-initiative>

Christina Viskum Lytken Larsen

Senior Researcher, PhD, Research Director of Centre for Public Health in Greenland, NIPH, SDU

In 2020 the anthology 'Human - Health, Society, Culture' (*Menneske - sundhed, samfund, kultur*) is under development. It will be a collection of 25 chapters about Greenland's research and development in the healthcare field with related topic areas. The book is aimed at undergraduate and graduate level programs at Ilisimatusarfik. The book is being edited by Tine Aagaard and Lise Hounsgaard.

Lise Hounsgaard

The Danish Greenlandic Society for Circumpolar Health (Grønlandsmedicinsk Selskab) was founded June 4, 1970, at the Institute of Medical Anatomy, the University of Copenhagen, Denmark. Thus, in 2020 the Society has its 50th anniversary.

The Danish Greenlandic Society for Circumpolar Health is the Danish/Greenlandic society for everyone interested in circumpolar health in its broadest sense. Main purposes of the society are to arrange membership meetings on topics within circumpolar health and to participate in national and international activities and collaboration within member organizations such as the International Union for Circumpolar Health and the Nordic Society for Arctic Medicine. Four annual membership meetings take place in Copenhagen and Nuuk and are always well-attended. **The 50th anniversary will be celebrated with a jubilee symposium on Saturday, June 6, 2020, in Copenhagen.**

If you are interested in circumpolar health and health conditions in Greenland, please join the Society. Everyone is welcome. And mark June 6, 2020 in your calendar for a great symposium on the exciting field of circumpolar health!

Anders Koch
Chairman, Danish Greenlandic Society on Circumpolar Health
www.gmsnet.dk



Karen Bjørn-Mortensen is a medical doctor, currently specializing in Infectious Diseases. Since 2010, she has worked in Greenland as a physician in Greenland on a regular basis. In 2016, she finished her PhD thesis on tuberculosis in East Greenland which included whole-genome-sequencing of the circulation tuberculosis bacteria. She is the first/co-author of a number of articles on infectious diseases in Greenland, e.g. on HIV and gonorrhoea. Currently she is involved in studies in urethritis, syphilis, trichinellosis and tuberculosis. Karen is also an active member of the organizing committee for Nunamed, member of national and international networks and collaborative groups and a board member of Greenland Society of Health Research.

Karen Bjørn-Mortensen

Update on the project 'Patient involvement in Greenland hospital care'

The project takes place in close cooperation with Institute for Nursing and Health Science and Queen Ingrid's Hospital, Nuuk. During 2019 we completed data collection: Three individual and focus-group interviews and 12 observations with a total of 23 health professionals from eight different disciplines at the hospital, and 11 interviews and three observations with a total of 14 patients. The material has now been analysed and we have started the dissemination and implementation of results which will continue during 2020.

Lene Seibæk, primary investigator

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

2019 was a very productive year for the AgeArc project. The activities have involved set-up of 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, fieldwork regarding a manager development project in a municipality, fieldwork regarding the *Fortæl for Livet* project, fieldwork in towns and settlements in North and East, teaching at Culture and Social history, Ilisimatusarfik, participation at NunaMed, Arctic Circle, Greenland Science Week, and the conference *Demensomsorg i Nord* and EGV Fondens conference in Nyborg. The project has also published and presented the report *Ældre menneskers liv og helbred i Grønland* and developed the exhibition *Ældreliv i Grønland*, which is currently on display at Greenland National Museum. Project participants Christina Viskum Lytken Larsen, Kamilla Nørtoft, and Tenna Jensen have also received funding from KEJ foundation for the Alliararneq project, a pilot study of intergenerational summer runs from 2020 until 2022. AgeArc has also received funding from NIS Grønlands Forskningsråd Forskningsfremme II to the subproject *Aktiviering af svage ældre mennesker*. The project runs in 2020, is hosted by Ilisimatusarfik and will be based at the center. Moreover, project participants Lise Hounsgaard, Kamilla Nørtoft and Tenna Jensen has become part of a network on Arctic Gerontology and will participate in a workshop funded by UArctic under the TN Health and Well-being in the Arctic in Oulu in April.

Tenna Jensen

Update on The Greenlandic geographic Birth Cohort ACCEPT

ACCEPT GRL Birth Cohort



The ACCEPT birth cohort, was established during 2010-2015 in a collaboration between the Greenlandic Health Care, Greenland Centre for Health Research, Ilisimatusarfik and Center for Arctic Health, Aarhus University. ACCEPT includes approximately 600 pregnant Inuit women and their child from 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).

Eight papers have been published (Knudsen et al. 2015, Long et al. 2015, Terkelsen et al. 2017, Bjerregaard-Olesen et al. 2017, Knudsen et al. 2018, Bank-Nielsen et al. 2019, Hjermitsev et al. 2019, Rasmussen et al. 2019) and two manuscripts are in preparation being submitted before summer 2020.

The study population had a median age of 27.0 years (range: 18-43 years of age) and median pre-pregnancy BMI of 24.3 kg/m². Forty-six percent had a BMI > 25 kg/m² (overweight). Thus, using the Caucasian BMI norm, there is a bit high percentage of overweight.

Questionnaires 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.

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%). Plasma cotinine documented the smoking status. Although there are signs of a decrease, the smoking among Inuit pregnant women is still too high and of concern. 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%. The regions showed difference 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 in ACCEPT had decreased.

The fetal growth was negatively affected by POP exposures and smoking. Smoking also seems to lower the blood Iron level.

Current ACCEPT research, the BioSund-ACCEPT project 2018-2021. The BioSund-ACCEPT project is conducted in a collaboration between Center for Arctic Health, Aarhus University, Greenland Center for Health Research, Ilisimatusarfik and Health Care. BioSund-ACCEPT includes 100 families (mother, father and child) with follow-up on the ACCEPT child health and development at 3-5 years of age and follow-up on the mother's lifestyle and health including also the father's data. Blood, hair, nail and urine are collected for POP and metal measurements and toxicological analyses. Data analyses are ongoing expected finalized end 2020.



Professor & Project lead Eva Cecilie Bonefeld-Jørgensen

Contributions by Arctic Health Research Centre in Aalborg 2019

A number of projects are in progress. 1) Karsten Rex defended his PhD in Nuuk in connection with NunaMed in October on Hepatitis B in Greenland as described above. 2) Paneeraq Noahsen and Stig Andersen completed the fieldwork initiated in 2018 by collecting data in Ammassalik in April on the diet and iodine-monitoring programme that is a 20-year follow-up. This further includes a 55-year follow-up on BMI and obesity as well as vitamin D, bone metabolism and skeletal health. 3) The study included a screening for cardiac arrhythmias for the relation to thyroid function, which is to be extended into 2020. 4) The study on activities of daily living, comorbidity and polypharmacy among nursing home residents covering two thirds of Greenland was presented in Greenland in 2019 and is further underway. 5) Finally, Inaluk Kleist extended her work on a schedule for work-up of dementia. The importance of her work is emphasized by the impact of cultural background on the reliability of the tools used. These tools have been translated into a Greenlandic context, and data for validation are now collected.

Stig Andersen

Professor, Head of Department, Aalborg University Hospital; AAU Arctic & Ilisimatusarfik

Cardiometabolic research and activities in 2019

A study on late diabetic complications was accomplished in 2019 with information on diabetic eye-, kidney-, nerve-, and cardiovascular disease among participants identified with diabetes or prediabetes in the Greenland Population Health Surveys. Three ongoing PhD studies will analyse the prevalence and incidence of these micro- and macrovascular complications and their risk factors. A secondary aim is to test the feasibility of novel methods for complication screening, particularly the use of the Ultra widefield camera Optos for retinal photos with a deep-learning-based automatic photo grading, and VAGUS® for autonomic nerve disease (figures). These devices do not require specialist staff, and for both practical and economic reasons, the implementation of such methods could ensure a far better screening for diabetes complications in remote areas.

Dietary studies have been carried out. One PhD study focus on gene-diet interaction and its health influences, and a dietary intervention comparing metabolic effects of traditional vs western diet has been conducted in Nuuk and Qaanaaq. The last part of the intervention study will take place in Qasigianguit from January – March 2020.

Professor Marit Eika Jørgensen



The Centre's educational activities

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

The field school on 'Remote nursing education & life-long learning 20th to 29th of august 2019' by 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 hosted the *Inter-professional Innovative Learning Institute on Circumpolar Health Field School* in august 2019.



Ten nursing students from the circumpolar region participated in the 10-day-course and were from Canada (3), Greenland (2), Finland (2), Russia, Sweden, and Norway. The course began with a stay in Kangerlussuaq, where students got to visit the local nursing station and were able to discuss strengths and challenges in remote nursing with the local nurse. After a few days they travelled to Sisimiut, where the students met an employee from the local municipality who described their collaboration with the healthcare system,

as well as visited the regional hospital and learned more about coordinating care with settlements. Finally, they travelled with the coastal ship to Nuuk. After being introduced to the University of Greenland and the National Hospital, final discussions and group presentations were held.

Conclusions drawn from this course were that lifelong learning for nurses in the Arctic is of high importance. The professionals need to have the skills that support them in the health challenges they meet in communities while respecting the culture of the people living in the area. Quality education is a combination of using advanced technologies and educators motivated to develop methods of learning that reflect students and communities, while appreciating the opportunities of an education that is local, academic and trades. This includes using relevant community resources to stimulate learning, such as visual methodologies.

Christine Ingemann

NUNAMED PhD course at GCHR in collaboration with UArctic

Prior to and during the NUNAMED conference, a PhD course for Master students and PhD candidates was held from the 2nd to 7th of October 2019. The PhD course was organized by GCHR with support from UArctic. 21 students from various health disciplines and from across the Arctic participated in the PhD course coming from Greenland, Denmark, Canada, Alaska, Finland, Sweden, and Norway.

The course overall focus was on Community-based health research – methods and strategies. Next to providing students with valuable insights into community-based research methods, they also gained insights from its application in various health disciplines through the 16 different lecturers throughout the course. You can find an overview of the program and literature list below.

Lectures dealt with health in the general population in the Arctic, planning community-based health research and implementing it. Each session contained group work and discussions, and students learned about multidisciplinary research and collaboration, as well as discussed ethical issues in research. The NUNAMED conference was part of the PhD course and all students were asked to give an oral presentation at the conference.

The course also facilitated a platform where young researchers could exchange knowledge, start collaborations and network with each other and researchers teaching at the course or attending the NUNAMED conference. Establishing such a forum for this next generation of Arctic researchers is crucial for current and future research collaborations.

The obligatory assignment for this course was for students to present their research projects at the NUNAMED conference. Student presentations did on purpose not have an PhD course-only session but were put into sessions based on the topic of their research project. This secured that students would get the opportunity to receive feedback from researchers within their thematic field and possibility to engage in discussions relevant for them.



Christine Ingemann

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.

Upcoming activities in 2020

50th anniversary of the Danish Greenlandic Society for Circumpolar Health

On the 4th of June 1970, Danish Greenlandic Society for Circumpolar Health (Grønlandskmedicinsk Selskab) was founded. For this reason, the society will hold its 50th anniversary seminar on Saturday the 6th of June 2020 in the auditorium of the Faculty of Science of Copenhagen, University of Copenhagen, Bülowsvej 17, 1870 Frederiksberg C.

GCHR Research Forum in Nuuk 2 - 4 November 2020

One of GCHR's objectives is to increase coordination between researchers involved in Greenland medical research by creating a forum for collaboration between researchers in Greenland, Denmark and abroad who are involved in health science research in relation to Greenland. Therefore, GCHR will invite the centre's researchers, PhD fellows, assigned and affiliated researchers to participate in a research forum in November 2020.

Publications in 2019

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Healey Akearok, G., Cueva, K., Stoor, J. P. A., **Larsen, C.V.L., Rink, E., Kanayurak, N., ... & Hiratsuka, V. Y.** (2019). Exploring the Term "Resilience" in Arctic Health and Well-Being Using a Sharing Circle as a Community-Centered Approach: Insights from a Conference Workshop. *Social Sciences*, 8(2), 45.

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Seibæk L. Sundhedsprofessionelle perspektiver på patientinddragelse i det grønlandske hospitalsvæsen [Health professional perspectives on patient involvement in Greenland hospital care] contribution to article in Tikiusaaq 2019.

Timm H, **Aagaard T**, Augustussen, M. (2019). Palliation i Grønland. Omsorg – Nordisk tidsskrift for palliativ medicin, nr. 3.

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Oral & poster presentations

Mulvad, G. (2019). Health and Wellbeing in relation to Climate Change. Klimadag Nuuk; February 2019.

Mulvad, G. (2019). The ethics of research with indigenous populations. NordForsk Bioethics conference, Torshavn; september 2019.

Mulvad, G. (2019). Mental Sundhed - Seksuelle overgreb. Foredrag - Rådet for Grønlands Retsvæsen; september 2019.

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Mulvad, G. (2019). Åbningstale fra Grønlands Center for Sundhedsforskning, NUNAMED.

Mulvad, G. (2019). Fordele og ulemper ved Grønlands Kost. Abstract and presentation NUNAMED.

Rask de Neergaard, R., **Hounsgaard, L**, Gerfelt, M. Jensen, A.B. Tuberkulose og social udsathed, - Screening af brugere af Herberg i Nuuk, Abstract, NUNAMED 2019

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Publications from previous years

Publications in 2018

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