

PhD Defence – Mie Møller

On Monday, 23 March 2026 at 13:00, Mie Møller from the Department of Health & Nature, Ilisimatusarfik, and the Faculty of Health and Medical Sciences, University of Copenhagen, will defend her PhD dissertation “Aspects of the Covid-19 pandemic in Greenland”.

Assessment Committee:

- Marit Eika Jørgensen, adjungeret professor, Ilisimatusarfik og Steno Diabetes Center Grønland
- Gitte Kronborg, klinisk lektor, Københavns Universitet
- Michael G. Bruce, Director (past), Arctic Investigations Program (AIP), Centers for Disease Control and Prevention (CDC), Alaska, USA

Supervisors:

- Main supervisor: Anders Koch, adjungeret professor, Ilisimatusarfik og Statens Serum Institut
- Co-supervisor: Kåre Mølbak, professor, Statens Serum Institut
- Co-supervisor: Peter Vedsted, professor, Aarhus Universitet

Programme:

Auditorium, Campus Ilisimarfik – Monday, 23 March 2026, at 13:00 (Greenland time)

- Introduction and welcome by the defence chair (max 10 min)
- Presentation of the PhD dissertation by Mie Møller (max 1 hour)
- Break (15 min)
- Assessment committee:
 - Michael G. Bruce (max 25 min)
 - Gitte Kronborg (max 25 min)
 - Marit Eika Jørgensen (max 25 min)
- *Ex auditorio* – Questions from the audience (max 15 min)
- Conclusion of the defence
- Assessment committee's evaluation of the defence and reception

The defence will be conducted in English.

Please note that the doors will be closed during the defence proceedings, and it will not be possible to enter or leave the auditorium during this time.

The defence can be accessed online via [Teams Link](#)

Copies of the dissertation can be found at the Ilisimatusarfik Library.



Abstract

Background

The COVID-19 pandemic had a profound global impact, with Greenland facing presumably unique vulnerabilities due to, among others, limited resources to manage a high burden of severe cases and fatalities. In response, Greenlandic authorities, very early in the pandemic, implemented stringent public health and social measures, including strict travel restrictions, to slow the spread of SARS-CoV-2. Subsequently, a nationwide vaccination campaign was launched to mitigate severe courses of infection. This strategy proved effective in the country, as community transmission did not begin until relatively late in the pandemic, in the fall of 2021, with low recorded morbidity and mortality.

Aim

This PhD project aimed to document four specific aspects of the course of the COVID-19 pandemic in Greenland and to provide insights for Arctic regions in preparing for similar future health crises. The four aspects concerned a description of the pandemic impact in Greenland in terms of both short- and long-term morbidity, the effectiveness of key interventions implemented, such as travel restrictions and vaccines, and potential secondary public health impacts following pandemic interventions.

Methods

The thesis is organized into four studies. The first study analyzed data from Danish and Greenlandic electronic medical records, focusing on PCR test results of travellers from Denmark to Greenland between 2020 and 2022. The second study investigated the humoral and cellular immune responses to mRNA COVID-19 vaccines in Greenlanders, monitoring these responses in plasma and saliva up to one year after primary vaccination. The third study explored the prevalence of acute and long-term symptoms in Greenlanders infected with SARS-CoV-2 through three questionnaires administered over a year, comparing findings to a test-negative population. Lastly, the fourth study examined the nationwide incidence of non-COVID acute respiratory infections from 2018 to 2023 using Greenlandic electronic medical records containing data on disease diagnosis codes, prescription data, and microbiological samples.

Results

We found that pre-departure screening of travellers for SARS-CoV-2 was an effective measure in delaying the import of the virus during the early stages of the pandemic until a large part of the population was vaccinated, and the highly contagious Omicron variant allowed for widespread community transmission in Greenland. Additionally, we discovered that the COVID-19 vaccines used in Greenland caused a strong immunological response in 98% of participants up to 11 months after primary vaccination, indicating a long-term and high level of vaccine protection. However, protection decreased with increasing age, suggesting that individuals over 60 years, among others, should be prioritized for future booster efforts. Despite the high vaccine protection, individuals in Greenland were infected with SARS-CoV-2, yet most infected experienced mild acute infections, with only a moderate risk of reporting long-term sequelae up to one year after infection compared to test-negative individuals in Greenland. Finally, we observed that the restrictions implemented during the pandemic did not significantly affect the incidence of other acute respiratory infections in Greenland, in contrast to many other countries.

Conclusion

This thesis shows that the combined efforts helped Greenland navigate through the pandemic more easily than expected. It contributes to the global understanding of the COVID-19 pandemic and provides valuable insights specific to the Greenlandic population. The findings offer important knowledge that can support Greenland and other geographically and structurally similar regions, e.g., the Arctic, in preparing for future outbreaks, including stronger surveillance and response systems

