

News from CMSS

The maritime evacuation project is finalized

Three years of research work within the Danish Maritime Health Service has now been completed, and the final report has been published on the homepages of the Danish Maritime Fund and CMSS. The overall aim of this project is an overview of how the quality of maritime tele-medical services can be optimized as well as an analysis of whether the overall Danish maritime telemedicine system delivers services on a comparable international level. The focus of the project has been on evacuations, which reflect the most serious and critical health and safety incidents on board the Danish merchant marine.

Over a 3-year period, the project has contributed to mapping of the maritime health service system – especially the maritime medical services, such as what is registered, by whom is it registered, and how is it registered. Particularly the latter has been a high priority and has enabled the establishment of a unique register for Radio Medical Denmark cases in Denmark from which researchers - in collaboration with the maritime health service system - can draw knowledge about seafarers' diseases and accident patterns at sea to promote prevention, health promotion initiatives and treatment at sea. A collaboration has been established with the TMAS (Telemedical Maritime Assistance Service) units of other maritime nations, and the work on preparing journal data electronically is in progress – enabling future benchmarking on relevant indicators.

Read more about the project or download the full report [here](#) (the report is only in Danish).

Two successful PhD defenses in CMSS



On 25 January, Solveig Bøggild Dohrmann from CMSS defended her PhD dissertation entitled 'The psychosocial work environment in Danish ferry shipping'. In her thesis Solveig has studied the importance of the psychosocial work environment to the experienced degree of fatigue among employees in Danish ferry shipping. The study showed that the psychosocial work environment represented by demands and influence in the work had a greater impact on the employees' degree of fatigue than disruptions from the physical work environment. In addition, Solveig found that employees who experienced high demands in work and conflict between work and family life were more fatigued compared to those who experienced fewer demands and less conflict. The study also showed that the experience of

having a lot of influence at work and receiving support from one's nearest supervisor was associated with less fatigue. Furthermore, it showed that low demands and high job influence were associated with high satisfaction with own sleep and that high sleep satisfaction was further associated with less fatigue; a correlation that indicates that the effect of demands and influence on fatigue works through sleep quality.

Based on Solveig's results, shipping companies are advised to initiate and support initiatives addressing these four psychosocial work environment factors as well as supporting high sleep quality among their employees. Experience from land-based workplaces has shown that high flexibility in working conditions has a positive impact on employees' experience of demands and influence at work and indicates that it can also support sleep quality. The shipping companies can invite their employees to participate in planning of the duty roster among other things. Experience also shows that shipping companies can benefit from encouraging their leaders to participate in training programs that focus on strategies to enhance employee involvement in work and to support them in finding a good balance between work and family life.

On 3 April, Melina Kourantidou, from the Department of Sociology, Environmental and Business Economics, defended her PhD thesis titled "Stewardship of resources in rapidly evolving Arctic economies and ecosystems: The role of marine invasive species". The title of her lecture was the following: 'Should Norway's Quota Area for Red King Crab be changed? Lessons from the Red King and Snow Crab Invasions in the Barents Sea for managing shifting ecosystem values, productivities, and uncertainties'.



In her presentation she sought to answer the question of whether the Norwegian management of the invasive, yet profitable, Red King Crab, can be considered optimal and what merits consideration in the decision to change the quota area. In addressing this question, she first explained the motivation behind her work and gave an overview of it, by highlighting the work in the six papers of her dissertation that contributes to addressing the question. She highlighted the importance of invasive species with a dual role as a nuisance and as a valuable economic resource, demonstrated the paucity of scientific data and presented the methodological tools and models that she used to empirically investigate this understudied issue.

With her primary focus being bioeconomic trade-offs for Arctic marine invasions, she explained how her work integrates ecological and economic models and also evaluates feedbacks between ecological and economic systems. She showcased her approach empirically by exploring different dimensions of the fisheries policies and their socioeconomic dimensions for the two crustacean invasions in the Barents Sea, the Red King Crab and the Snow Crab.

This called for a celebration, and on both occasions a reception was held at SDU Esbjerg where both colleagues, friends and family attended to congratulate Solveig and Melina respectively on their new titles.



Need for Implementing a Public Health Programme in Commercial Fishing

At the IFISH5 conference in Canada, 10-13 June, Despina Andrioti from CMSS presented the research done by her fellow researcher Olaf C. Jensen on effective interventions with a maritime focus. Findings from Denmark, Greece and Spain showed that fishermen and seafarers are still more overweight in comparison to the general population. Decreasing mortality and morbidity from chronic diseases is a major challenge, and all stakeholders should work together to implement prevention practices. Successful public health policies should be coupled with comprehensive measures such as a combination of fiscal policies, legislation, and monitoring mechanisms.

More specifically, promotion policies adapted to the fishing sector and changes in the working environment help to achieve better results. Empowerment could be used to raise awareness of health risks for promoting healthier diets and physical activity. Furthermore, systems to monitor data from the health examinations will allow health professionals to detect and treat the diseases at earlier stages with a better prognosis. But above all, the authorities should support and facilitate such initiatives.

This is the case in Denmark. Here there is long standing collaboration between all stakeholders including academia, authorities, employers, and unions, but to help improve fishermen's health and wellbeing, there is a need to establish a public health programme tailored for the fishing sector.

EU HEALTHY GATEWAYS Joint Action 2018-2021

Preparedness and action at points of entry (ports, airports, ground crossings)



On behalf of CMSS, Olaf C. Jensen participated in a kick-off meeting on 12-13 June in Varna, Bulgaria. This is the start of a 3-year EU project (2018-2021) funded with 3 million Euro. 26 member states and 31 authorities participate in the project. The aim is to support cooperation and coordination between member states in order to improve their ability to prevent and combat cross-border health risks in the transport sector at the ports of entry, thereby contributing to a high level of protection of public health in the EU.

This new joint action cooperation is a continuation of SHIPSAN - just bigger, now including the entire transport sector. The University of Thessaly, Greece is the leading partner. CMSS is a collaborating partner. The meeting was very well organized with a total of 60 participants from the respective participating countries and authorities. The topics for the plenary sessions and group work included presentation of objectives, processes and expected results, discussion and definition of the Work Package (WP) methodology, planning of activities and preparation of working documents, including questionnaires.

A selection of other CMSS activities

Blue SDU seminar

Early January 2018, Kimmo Herttua, Despina Andrioti, Lulu Hjarnø, Hanna B. Rasmussen, Solveig B. Dohrmann and Susanne Frank participated in the yearly Blue SDU seminar, which took place at Svanninge Bjerger Research Station near Fåborg. The purpose of the seminar was to inform about ongoing maritime projects across SDU as well as planning of new projects. A representative from the Maritime Research Alliance gave a presentation at the seminar. This alliance aims to identify main themes and challenges for future interdisciplinary, maritime-related research projects, and in this regard Blue SDU is considered to be an interesting player due to the broad, scientific approach within health promotion, biology, technology and law. At the seminar SDU RIO (Research and Innovation Organisation) also gave a presentation on their opportunities to give advice and guidance on research funds and application rounds. Blue SDU is a valuable network – especially due to the increasing demand for not only international applications but also interdisciplinary cooperation.

Project PolSEA – field work in London

In relation to [project PolSEA](#), Hanna B. Rasmussen from CMSS and three other researchers from Aalborg University, Copenhagen Business School and the Department of Law at SDU have been on a field trip to London from 21-24 January. The purpose of the field work was to talk with the relevant maritime stakeholders, including IMO (International Maritime Organization) on the enforcement of the legislation. The IMO representatives with whom they met in London showed a great interest in the project and were interested in obtaining the final results in order to use them inside the organization.



Founding General Meeting of the Danish Society on Maritime Medicine



[The Danish Society on Maritime Medicine](#) held its 18th Annual General Meeting on 6 April 2018, and about 20 members of the society, including Hanna B. Rasmussen, Lulu Hjarnø, Susanne Frank and Solveig B. Dohrmann from CMSS, attended the meeting.

The general meeting was held in cooperation with Molslinjen. We were invited on a ferry ride from Aarhus



to Sjællands Odde and back again. Under the ferry ride we were treated to a nice lunch, and we got an insight into the history of Molslinjen as well as the future plans for the company.

Furthermore, we were shown around on the ferry by Captain Korsager Andersen, and on the bridge, we were introduced to the captain on duty that day and his crew, who gave us a valuable insight into their daily work.

Once back in Aarhus, we were accompanied to another of their high-speed ferries Express 2, which was in port due to repairing. Here the founding general meeting took place, and it was opened by selection of a chair and a minute taker after which the chairman of the society at the time Chief Medical Director Mette Gabriel gave the chairman's report. After that, a review of the budget followed and election to the Board. Lulu and Solveig were both elected to the Board, while Hanna was elected accountant. The general meeting ended with a constructive debate about the society's future form and work - a debate that gave the board many useful inputs for further work.

The last item on the day's agenda was a presentation by the company Virsabi which gave us an exciting insight into virtual reality, including a selection of devices developed for different companies to promote, for example, product knowledge, strategies, teaching and training through various virtual realities. We could thus test the experience of sound samples; an introduction to new employees, anatomy education and much more.

Danish Maritime Days

Hanna B. Rasmussen from CMSS was present during the Danish Maritime Days, which took place in early May. She participated in the workshop on the ISM code, which was organized by MDC (Maritime Development Center) in cooperation with Danish Shipping. The workshop was entitled 'What type of ownership and leadership has the ISM code contributed to?' The speakers of the event came from both shipping companies and insurance companies. There was a lively and fruitful discussion about the ISM code, its possibilities and barriers.

Conference about men's health



'Men's health: What do we know – and what can we do better?' This was the title of a conference held by UC SYD in collaboration with the Region of Southern Denmark and Esbjerg Municipality on 15 May, where Lulu Hjarnø and Solveig Dohrmann from CMSS participated. From research we know that men are bad at taking care of their own health when they are affected by illness and that they less often survive life-threatening diseases compared to women. Four keynote speakers and approx. 10 workshop coordinators each gave their views on why this is the case, and what we can do about it.

All presentations were of great relevance to CMSS's target group. As we know, seamen have an increased lifestyle-related risk behavior compared to men ashore; i.e. a larger proportion of smokers as well as overweight and inactive persons. Football that has proven to be effective in preventing lifestyle-related diseases on land is not an option at sea, but other measures that allow for increased physical and mental health at sea should be examined.

Recently published scientific articles from CMSS (names of CMSS employees marked in bold)

- **Zhao Z**, Zhu YQ, Zheng, EX, Chen K. Analysis on the factors affecting seafarers fatigue based on European Navigation Inc. *Dalian Haishi Daxue Xuebao* 2017; 43(2): 39-44.
- Jepsen JR, **Zhao Z**, Pekcan C, Barnett M, van Leeuwen Wessel MA. Risk factors for fatigue in shipping, the consequences for seafarers' health and options for preventive intervention. In: MacLachlan M (ed.) *Maritime Psychology: Research in Organizational and Health Behavior at Sea*. Springer Publishing Company, 2017. p 127-150.
- **Remmen LN**, **Herttua K**, Jepsen JR, Berg-Beckhoff G. Fatigue and workload among Danish fishermen. *International Maritime Health* 2017; 68 (4): 252-259.
- Faurby MD, **Jensen OC**, **Hjarnø L**, **Andrioti D**. The costs of repatriating an ill seafarer: a micro-costing approach. *Health Economics Review* 2017; 7(46): 1-8.
- **Rasmussen HB**, Lützen M, Jensen S. Energy efficiency at sea: Knowledge, communication, and situational awareness at offshore oil supply and wind turbine vessels. *Energy Research & Social*

Science 2018; 44: 50-60. Doi: [10.1016/j.erss.2018.04.039](https://doi.org/10.1016/j.erss.2018.04.039).

- Jensen S, Lützen M, Mikkelsen LL, **Rasmussen HB**, Pedersen PV, Schamby P. Energy-efficient operational training in a ship bridge simulator. *Journal of Cleaner Production* 2018; 171: 175-183. Doi: [10.1016/j.jclepro.2017.10.026](https://doi.org/10.1016/j.jclepro.2017.10.026).
- **Rasmussen HB**, Ahsan D. Injuries and Fatalities in Danish Commercial Fishing Fleet in 1998–2016. *Safety*, 2018; 4(2): 1-15. Doi: [10.3390/safety4020013](https://doi.org/10.3390/safety4020013).
- Benneke M, Charalambous G, **Jensen OC**, **Andrioti D**. Policy Analysis for Ehealth in Denmark: Patient in the center of integrated care. *International Journal of Community & Family Medicine* 2018; 3: 1-6. Doi: [10.15344/2456-3498/2018/140](https://doi.org/10.15344/2456-3498/2018/140).
- Ren J, Lützen M, **Rasmussen HB**. Identification of Success Factors for Green Shipping with Measurement of Greenness Based on ANP and ISM. In: Lee PT-W, Yang Z (eds.). *Multi-Criteria Decision Making in Maritime Studies and Logistics*. Springer International Publishing; 2018. p. 79-103.

You can find more CMSS publications and bibliographic details by clicking [here](#).

CMSS wishes you all a nice summer