

ANNUAL REPORT

Research Center for Emergency Medicine

2020



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Data sheet

Annual Report 2020 – Research Center for Emergency Medicine

The annual report is composed and published in cooperation with researchers and colleagues affiliated to Research Center for Emergency Medicine.

April 2021

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Preface

Dear reader,

With this annual report, we want to expose you to the spirit and the activities in Research Center for Emergency Medicine. On the first pages, we give a short background information about who we are, what we strive for, how we work and how we see Emergency Medicine.

On the following pages, we list our academic program and activities.

It has been an unusual year, a COVID-19 year. A year with many challenges we have had to overcome, but today we are all safe, in good spirits, and have a drive to succeed.

We hope you will find the reading interesting and inspiring, and if you do, do not hesitate to contact us, we are always looking for new researchers and collaborators.

Best regards

Professor

Hans Kirkegaard

A handwritten signature in black ink that reads "Hans Kirkegaard". The script is cursive and fluid, with the first letters of the first and last names being capitalized and prominent.

Contents

1.	About us - Research Center for Emergency Medicine	1
2.	Mission, vision and strategy	1
3.	Research philosophy.....	3
4.	The field of emergency medicine.....	3
5.	Academic programme, publications and foundation grants.....	4
6.	Current national research projects.....	9
7.	Current research projects	10
8.	Peer review publications	10
9.	Posters	17
10.	National invited lectures and presentations	18
11.	International cooperation.....	18
12.	Review committee assessments	20
13.	Grants and funding	20
14.	Awards	21

1. About us - Research Center for Emergency Medicine

We are the centre for research in emergency medicine at Aarhus University and in Central Denmark Region, established to initiate and stimulate research in this newly implemented medical speciality in Denmark.

In house, at Aarhus University Hospital, the centre is affiliated with the emergency department and the research environment is occupied by all academic positions, from bachelor students and PhD students to clinicians and established researchers and professors.

By embracing various healthcare professions and research methods, we strive to reflect the interdisciplinary nature of emergency medicine in our research activities. Many of our research activities are structured in networks that also welcome researchers based in other specialities or locations.

We provide an excellent research environment and aim to establish new collaborators and projects continuously within the research field of emergency medicine.

2. Mission, vision and strategy

Mission Statement

We perform interdisciplinary research with international impact in favour of patients with acute illness.

Mission

Research Center for Emergency Medicine generates and conveys research within all aspects of emergency medicine in favour of patients with acute illness and the medical speciality of emergency medicine.

Our research is interdisciplinary and multidisciplinary and includes all academic positions from student to professor. Our center is the driving force and leading knowledge base for emergency medicine research in the Central Denmark Region, and a natural gathering point for both established and early career researchers within the field.

Our research environment is based on values of tolerance, diligence, diversity, cooperation, and talent development.

Vision

Research Center for Emergency Medicine (RECEM) is nationally leading and internationally acclaimed within the research field of emergency medicine.

RECEM is a gathering point and driving force for emergency medicine research in the Central Denmark Region

RECEM demonstrates a high quality of research and our articles are published in high-impact scientific journals

RECEM is well known among medical professionals, academics, and the general public

RECEM has a strong international, interdisciplinary, and multidisciplinary profile

RECEM has an established collaborative network and attracts both talented early career and established researchers nationally as well as internationally

RECEM develop and provide pre- and postgraduate education in the field of emergency medicine at an international level

RECEM develops and initiates research projects that are awarded grants on a continuous basis from both national, international, private, and public funding sources

RECEM has a research culture firmly anchored in the emergency department where all patients are included in research or quality-improvement projects

Strategy 2021

Academic staff

The academic staff will be strengthened at all academic levels within the profession of both medicine and health care.

Management structure

The leading professor in Emergency Medicine is head of RECEM. A flat organizational structure, with a democratic, equal, and open culture, is maintained.

Organisation of research

The research organisation of RECEM is based on the establishment of research networks, read more about how we are organised in the paragraph “Research Philosophy” below.

Focus areas

- Early and effective diagnostics and treatment
- Life-saving treatment
- Patient-flow and transition across sectors
- Patient safety
- Organisational conditions
- The vulnerable patient
- Involvement of patients and relatives
- Pain management
- Sepsis

The research environment

RECEM promotes an inspiring research environment and brings talent development, staff retention, and an international vision into focus. RECEM is a multidisciplinary and interdisciplinary research centre where research and the quality of research is prioritized over the academic level, line of profession, and level of education.

Visibility and presentation

Presentation of the results of each research project must be clear and distinct. We aim to publish our results in high-impact international scientific journals. Furthermore, we strive to disseminate our research to a wide audience including both professional stakeholders and the broad public.

Teaching

We strive to establish teaching in emergency medicine to be at same level as other medical specialities.

We give priority to teaching in all aspects of emergency medicine regardless of profession, level of education, and department.

Research qualifications

RECEM strives to develop expertise in interventional-, qualitative-, epidemiological, and simulation research.

Cooperation

RECEM collaborates at a regional, national, and international level.

RECEM collaborates across a wide range of (academic) disciplines at the hospital and university.

Fundraising

We seek to obtain financial resources for ongoing and future research projects at a continuous basis.

3. Research philosophy

Our research philosophy is based on the establishment of research networks. A research network is a group of researchers with similar interests. The head of research at RECEM presides over the respective networks; however, the networks are autonomic and driven forward by key researchers. Researchers from other research environments are also linked to and welcome in the networks, which is why we represent a unique interdisciplinary field within the individual research fields.

4. The field of emergency medicine

The field of emergency medicine is concerned with the care of illness or injuries requiring acute medical attention. It embraces all aspects of the acute patient's treatment from the first contact to the emergency service to hospitalisation and rehabilitation after discharge. Emergency medicine cuts across existing professional and organizational boundaries and has a wide interface of different clinical and epidemiological fields.

In Denmark the emergency departments have existed for several years now, and in 2017 emergency medicine was finally approved as a medical speciality.

5. Academic programme, publications and foundation grants

Overview

Professors	2
Associated professors	2
Postdoc	1
PhD degrees	3
PhD students	17
Research year students	8
Master thesis students	8
Research training students	2
Bachelor students	2
Per review publications	62
Grants	DKK 10,097,966

Hans Kirkegaard, professor

PhD Students, main supervisor

Gitte Boier Tygesen

Development and evaluation of a patient safety model targeting Severe Clinical Deterioration and Safety Awareness in the Emergency Department

Defence June 18, 2020

Mathias Holmberg

Ubiquinol (reduced Coenzyme Q10) as a Metabolic Resuscitator in Post-Cardiac Arrest: A Randomized, Double-Blind, Placebo-Controlled Trial

Defence August 21, 2020

Marie Kristine Jessen

Fluid administration in adult emergency department patients with sepsis

Martin Gude (The prehospital EMS program)

Improvement and evaluation of prehospital stroke management

PhD Students, co-supervisor

Kasper Glerup Lauridsen

Improving outcomes from in-hospital cardiac arrest: studies on cardiac arrest teams

Main supervisor Bo Løfgren

Stine Fjendbo Galili

Management of acute pain in patients using opioids

main supervisor Lone Nikolajsen

Sophie Seidenfaden (The prehospital EMS program)

The potential of novel biomarkers in prehospital management of traumatic brain Injury

main supervisor Morten Bøtke

Mikael Fink Vallentin (The prehospital EMS program)

Calcium for Out-of-Hospital Cardiac Arrest – A Randomized, Double-Blind,

Placebo-Controlled Trial

Main supervisor Lars Wiuff Andersen

Jesper Fjølner (The prehospital EMS program)

Hemodynamic-directed cardiopulmonary resuscitation in out-of-hospital cardiac arrest: The HEROIC study

Main supervisor Steffen Christensen

Research Year Students, main supervisor

David Kocemba

Differences in fluid resuscitation and mortality in patients suspected of septic shock with congestive heart failure: A pilot study

Defence September 11, 2020

Frederik Husum Trier

Trauma patients at Aarhus University Hospital from the year 2000 to 2020

Master Thesis, main supervisor

Jennifer Dharshi Gunasingham

A review of fluid management recommendations in Danish sepsis guidelines: A nationwide cross-sectional study

Anne Drescher Petersen

Effect of after-hour admission on fluid treatment in emergency department patients with suspected infection

Bachelor student, main supervisor

Rasmus Rye Søndergaard

Trauma score

Research training students, main supervisor

Cathrine Præst Mose

Altered mental status in Danish Emergency department patients: Etiologies and outcomes

Administrative officer and professor secretary

Ida Katrine Thomsen

Bo Løfgren, professor

PhD students, main supervisor

Kasper Glerup Lauridsen

Improving outcomes from in-hospital cardiac arrest: studies on cardiac arrest teams

Mathilde Stærk

Optimising the In-Hospital Use of Automated External Defibrillators

Anders Sjørlev Schmidt

Improving the Efficiency and Safety of Direct Current Cardioversion

PhD Students, co-supervisor

Hannah Brogård Andersen

Circulatory support in neonatal resuscitation

Main supervisor Tine Brink Henriksen

Frederik Boe Hansen

Improving Cerebral Perfusion and Neuronal Outcome in the Post-Cardiac Arrest Period

Main supervisor Asger Granfeldt

Lauge Vammen

Clinically relevant cardiac arrest survival model and intervention with thiamine

Main supervisor Asger Granfeldt

Research Year Students, main supervisor

Dung Thuy Nguyen

Dual operator CPR compared to Single operator CPR: A Randomised Trial in Basic Life Support for Laypersons

Defence July 1, 2020

Cecilie Budolfsen

NT-proBNP Measurements to Rule-out Heart Failure among Patients with Atrial Fibrillation: A Prospective Clinical Study

Defence postponed due to Covid-19

Marlice Zwanenburg

Design Features of Automated External Defibrillators Affecting User-friendliness and Operational Outcomes: A Mixed Methods Study

Bachelor student, main supervisor

Signe Hedebo

Prediction of Cardioversion Success in Patients with Atrial Fibrillation using Atrial Strain

Marianne Lisby, associate professor

PhD students, main supervisor

Trine Worm Thøgersen

Preventable acute hospital admissions – terminology, characteristics, and development of an assessment tool for community-based nurses

Tine Louise Dideriksen

GAME CHANGER, A novel way to approach patients suffering from alcohol use disorder: development and (pilot) test of an intervention linking patients and systems

PhD students, co-supervisor

Gitte Boier Tygesen

Development and Evaluation of a Patient Safety Model Targeting Severe Clinical Deterioration and Safety Awareness in the Emergency Department

Main supervisor Hans Kirkegaard

Defence June 18, 2020

Hanne Mørkenborg Bové

Bridging acute nursing care to patients suffering from alcohol use disorders.

A lifeworld perspective.

Main supervisor Annelise Norlyk

Defence June 24, 2020

Master Thesis, main supervisor (cand.scient.san)

Malene Willemoes & Mette Bjerg Holm

The association between length of stay and readmission for patients diagnosed with urinary tract infection

Defence June 15, 2020

Mia Hansen Mandau

Timing of antibiotic therapy and outcomes in adult emergency department patients with community acquired pneumonia – A cohort study

Defence June 15, 2020

Master Thesis, co-supervisor (cand.scient.san)

Karina Andresen

Associationen mellem medicineringsfejl på plejecentre, der har arbejdet med I sikre hænder og plejecentre, der ikke har

Main Supervisor Jan Mainz

Research Project in the Emergency Department, main supervisor

Mia Blaabjerg, project nurse (cand.scient.san)

Meeting Relatives in Trauma Centers

Research training students, main supervisor

Line Hansen

Can discharge diagnoses predict readmissions in patients presenting to the emergency department with chief complaint "fever/infection"

Lars Wiuff Andersen, associate professor

PhD students, main supervisor

Nikola Stankovic

The Relationship Between Socioeconomic Factors and Incidence, Treatments, and Outcomes for Patients with In-Hospital Cardiac Arrest in Denmark

Mikael Fink Vallentin (The prehospital EMS program)

Calcium for Out-of-Hospital Cardiac Arrest – A Randomized, Double-Blind, Placebo-Controlled Trial

PhD students, co-supervisor

Mathias Holmberg

Ubiquinol (reduced Coenzyme Q10) as a Metabolic Resuscitator in Post-Cardiac Arrest: A Randomized, Double-Blind, Placebo-Controlled Trial

Main supervisor Hans Kirkegaard

Defence August 21, 2020

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Fluid administration in adult emergency department patients with sepsis

Main supervisor Hans Kirkegaard

Lauge Vammen

Clinically relevant cardiac arrest survival model and intervention with thiamine

Main supervisor Asger Granfeldt

Research Year Student, main supervisor

Maria Høybye

In-Hospital vs. Out-of-Hospital Cardiac Arrest: Differences In Patient Characteristics and Short- and Long-Term Survival

Project nurse, VAM-IHCA Trial

Birthe Sindberg

Claus Sixtus Jensen, postdoc

PhD student, co-supervisor

Mai Buus

Giving children and young people a voice - translating and pre-testing a patient-reported experience measure in a Danish paediatric setting

Main supervisor Marianne Lisby

Mathias Holmberg, MD, PhD

PhD students, co-supervisor

Nikola Stankovic

The Relationship Between Socioeconomic Factors and Incidence, Treatments, and Outcomes for Patients with In-Hospital Cardiac Arrest in Denmark

Main supervisor Lars Wiuff Andersen

Research Year Students, co-supervisor

Maria Høybye

In-Hospital vs. Out-of-Hospital Cardiac Arrest: Differences In Patient Characteristics and Short- and Long-Term Survival

Main supervisor Lars Wiuff Andersen

Lara Roessler (The University of Southern Denmark), main supervisor Annmarie Lassen

Resuscitation Quality in the Intensive Care Unit

Main supervisor Annmarie Lassen

Tilde Olesen (The University of Southern Denmark), main supervisor Annmarie Lassen

The association of altered mental status in the emergency department with in-hospital mortality in COVID-19 patients

Main supervisor Annmarie Lassen

Kasper Glerup Lauridsen

Master Thesis, co-supervisor

Mille Johnsen (Aarhus University BSS), main supervisor Sune Dueholm Müller

Anne Hebsgaard (Aarhus University BSS), main supervisor Sune Dueholm Müller

Research Year student, co-supervisor

Dung Thuy Nguyen

Dual Operator CPR Compared to Single Operator CPR: A Randomised Trial in Basic Life Support for Laypersons

Defence July 1, 2020

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Effect of after-hour admission on fluid treatment in emergency department patients with suspected infection

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Research Year student, co-supervisor

Marlice Zwanenburg

Design Features of Automated External Defibrillators Affecting User-friendliness and Operational Outcomes: A Mixed Methods Study

Anders Sjørølev Schmidt

Bachelor Thesis, co-supervisor

Signe Hedebo

Prediction of Cardioversion Success in Patients with Atrial Fibrillation using Atrial Strain

6. Current national research projects

VAM-IHCA

Vasopressin and Methylprednisolone for In-Hospital Cardiac Arrest – A Randomized, Double-Blind, Placebo-Controlled Trial

Principal investigator Lars W Andersen (RECEM)

SHINE-TRAUMA

Efficacy and safety of 72-hour infusion of Prostacyclin (1 ng/kg/min) in trauma patients with haemorrhagic shock induced endotheliopathy – a multicentre randomized, placebo-controlled, blinded, investigator-initiated trial

Principal investigator Pär Johansson Copenhagen University

RECEM investigators Hans Kirkegaard and Christian Fenger-Eriksen

7. Current research projects

TTH48 Targeted Temperature Management for 24 vs 48 hours

Principal investigator Hans Kirkegaard

TTM2 – Targeted Temperature Management 2

Principal investigator Niklas Nielsen, Lund University

RECEM investigators Hans Kirkegaard and Anders Grejs

TAME

Targeted Therapeutic Mild Hypercapnia After Resuscitated Cardiac Arrest: A Phase III Multi-Centre Randomised Controlled Trial.

Principal investigator Glenn Eastwood Monash University, Melbourne

RECEM investigators Hans Kirkegaard and Anders Grejs

8. Peer review publications

1. Andersen LW, Carøe Lind P, Vammen L, Høybye M, Holmberg MJ, Granfeldt A. Adult post-cardiac arrest interventions: An overview of randomized clinical trials. *Resuscitation*. 2020 Feb;147:1-11. <https://doi.org/10.1016/j.resuscitation.2019.12.003>
2. Bang C, Mortensen MB, Lauridsen KG, Bruun JM. Trends in antidiabetic drug utilization and expenditure in Denmark: A 22-Year Nationwide Study. *Diabetes, Obesity and Metabolism*. 2020 Feb;22(2):167-172. <https://doi.org/10.1111/dom.13877>
3. Bartlett E, Valenzuela T, Idris A, Deye N, Glover G, Gillies M et al.. Systematic Review and Meta-Analysis of INTRAvascular Temperature Management versus Surface Cooling in COMATose Patients Resuscitated from Cardiac Arrest. *Resuscitation*. 2020 Jan;146:82-95. <https://doi.org/10.1016/j.resuscitation.2019.10.035>

4. Berg KM, Soar J, Andersen LW, Böttiger BW, Cacciola S, Callaway CW et al.. Adult Advanced Life Support: 2020 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations. *Circulation*. 2020 Oct;142(16, suppl.1):S92-S139. <https://doi.org/10.1161/CIR.0000000000000893>
5. Blennow Nordström E, Lilja G, Vestberg S, Ullén S, Friberg H, Nielsen N et al.. Neuropsychological outcome after cardiac arrest: a prospective case control sub-study of the Targeted hypothermia versus targeted normothermia after out-of-hospital cardiac arrest trial (TTM2). *BMC Cardiovascular Disorders*. 2020 Oct;20(1):11. 439. <https://doi.org/10.1186/s12872-020-01721-9>
6. Boier Tygesen G, Kirkegaard H, Raaber N, Trøllund Rask M, Lisby M. Consensus on predictors of clinical deterioration in emergency departments: A Delphi process study. *Acta Anaesthesiologica Scandinavica*. 2020 oct 1;1. <https://doi.org/10.1111/aas.13709>
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9. Bové HM, Lisby M, Norlyk A. Do the carers care? A phenomenological study of providing care for patients suffering from alcohol use disorders. *Nursing Inquiry*. 2020 jan;27(1). e12322. <https://doi.org/10.1111/nin.12322>
10. Bro-Jeppesen J, Jeppesen AN, Haugaard S, Trolborg A, Hassager C, Kjaergaard J et al.. The complement lectin pathway protein MAp19 and out-of-hospital cardiac arrest: Insights from two randomized clinical trials. *European Heart Journal: Acute Cardiovascular Care*. 2020 nov;9(4_Suppl):S145-S152. <https://doi.org/10.1177/2048872619870031>
11. Endisch C, Westhall E, Kenda M, Streitberger KJ, Kirkegaard H, Stenzel W et al.. Hypoxic-Ischemic Encephalopathy Evaluated by Brain Autopsy and Neuroprognostication After Cardiac Arrest. *JAMA Neurology*. 2020 jul 20. <https://doi.org/10.1001/jamaneurol.2020.2340>
12. Evald L, Brønnick K, Duez CHV, Grejs AM, Jeppesen A, Søreide E et al.. Younger Age Increases Risk of Self-reported Affective and Cognitive Sequelae Six Months Post Cardiac Arrest. *Circulation*. 2020;142(Suppl_4). https://doi.org/10.1161/circ.142.suppl_4.316

13. Grand J, Hassager C, Skrifvars MB, Tiainen M, Grejs AM, Jeppesen AN et al.. Haemodynamics and vasopressor support during prolonged targeted temperature management for 48 hours after out-of-hospital cardiac arrest: a post hoc substudy of a randomised clinical trial. *European Heart Journal: Acute Cardiovascular Care*. 2020 jun 17;2048872620934305. <https://doi.org/10.1177/2048872620934305>
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22. Holm A, Kirkegaard H, Taccone F, Søreide E, Grejs A, Duez C et al.. Cold fluids for induction of targeted temperature management: A sub-study of the TTH48 trial. *Resuscitation*. 2020;148:90-97. <https://doi.org/10.1016/j.resuscitation.2019.11.031>
23. Holmberg MJ, Uber A, Stankovic N, Chen C-YO, Grossestreuer AV, Donnino MW et al.. Ubiquinol (Reduced Coenzyme Q10) and Cellular Oxygen Consumption in Patients Undergoing Coronary Artery Bypass Grafting. *Journal of Intensive Care Medicine*. 2020 aug;35(8):797-804. <https://doi.org/10.1177/0885066618789114>
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<https://doi.org/10.1111/jonm.13082>
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37. Moskowitz A, Andersen LW, Holmberg MJ, Grossestreuer AV, Berg KM, Granfeldt A. Identification, collection, and reporting of harms among non-industry-sponsored randomized clinical trials of pharmacologic interventions in the critically ill population: a systematic review. *Critical Care (Online Edition)*. 2020 jul;24. 398. <https://doi.org/10.1186/s13054-020-03113-z>
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9. Posters

1. Brogård Andersen H, Andersen M, Andelius TCK, Pedersen MV, Løfgren B, Pedersen M et al. Adrenaline versus placebo during resuscitation – the effect on ROSC and markers of CNS outcome; a newborn piglet model of hypoxic cardiac arrest. 2020. Poster session presented at the 8th Congress of the European Academy of Paediatric Societies (virtual).
2. Hansen LH, Brogård Andersen H, Andersen M, Andelius TCK, Pedersen MV, Løfgren B et al. Ventricular fibrillation during resuscitation of newborn piglets with initial non-shockable cardiac arrest rhythms. 2020. Poster session presented at the 8th Congress of the European Academy of Paediatric Societies (virtual).
3. Tygesen GB, Lisby M, Raaber N, Rask MT & Kirkegaard H. Development and evaluation of a situation awareness model targeting clinical deterioration in the emergency departments – a quasi experimental study. ePoster EUSEM Copenhagen, September 2020
4. Kobberup FB, Sode BS, Tygesen GB & Kalmriz M. Mixed-method evaluation of a digital innovation that enables patient participation in emergency care. ePoster EUSEM Copenhagen, September 2020

10. National invited lectures and presentations

Marianne Lisby

Project Day of Research, Department of Lung Diseases, Scandic Hotel Aarhus C, Oct 23, 2020

Lars Wiuff Andersen

Introductory speaker: *In-hospital cardiac arrest*, Rigshospitalet, Oct. 2020

Kasper Glerup Lauridsen

Introductory speaker: *Førstehjælp og hjertelungeredning til børn*

First-aid Users Network symposium, Odense University Hospital. November 2020

Introductory speaker: *Pauser i hjertemassagen og overlevelsen efter hjertestop: Hvilke pauser er vigtigst?* Resuscitation Users Network symposium, Odense University Hospital. November 2020

Marlice Zwanenburg

Panelist: Resuscitation User Network. Laerdal Medical Copenhagen. Nov. 5, 2020

Panelist: First Aid Instructor User Network. Laerdal Medical Copenhagen. Nov. 6, 2020

Introductory speaker: PediRES-Q Teleconference Investigators Meeting. Nov. 12, 2020

11. International cooperation

Hans Kirkegaard

Eldar Søreide, Professor, MD, PhD, FERC, Department of Anaesthesiology and Intensive Care and Alf Inge Larsen, Professor, MD, PhD, FESC; Department of Cardiology, Stavanger University Hospital, Stavanger, Norway and Department of Clinical Medicine, University of Bergen, Bergen, Norway

Fabio Silvio Taccone, Professor, MD, PhD; Department of Intensive Care, Erasme Hospital, Université Libre de Bruxelles (ULB), Brussels, Belgium

Valdo Toome, MD; Department of Intensive Cardiac Care, North Estonia Medical Centre, Tallinn, Estonia

Christian Storm, MD, PhD; Department of Internal Medicine, Nephrology and Intensive Care, Charité-Universitätsmedizin Berlin, Berlin, Germany

Timo Laitio, MD, PhD; Department of Anaesthesiology and Intensive Care, Turku University Hospital and University of Turku, Finland

Markus B Skrifvars, Associated professor, MD, PhD, EDIC, FCICM; Division of Intensive Care, Department of Anaesthesiology and Intensive Care Medicine, Helsinki University Hospital and University of Helsinki, Finland, and Australian and New Zealand Intensive Care Research Centre, School of Public Health and Preventive Medicine, Monash University Melbourne, Australia

Nathan Shapiro Ass. Professor, MD Emergency Department, Beth Israel Deaconess Medical Center, Longwood, Boston, USA

Michael Donnino, Ass. Professor MD, Emergency Department, Beth Israel Deaconess Medical Center, Longwood, Boston, USA

Bo Madsen, Associated professor, MD, Emergency Department, Mayo Clinic, Rochester, Minnesota, USA

Jeff Keep, MD, FRCER Consultant & Honorary Senior Lecturer in Emergency Medicine & Major Trauma Lead for Research & Clinical Governance King's College Hospital, London, United Kingdom

Philip Andersson, Adjunct professor, MD, Emergency Department, Brigham & Womens Hospital, Boston, MA, USA.

Dr. Ben Bloom Consultant Emergency Medicine, Barts Health NHS Trust Royal London Hospital, United Kingdom

Marianne Lisby

Patricia Dykes, Associate professor, Brigham & Womens Hospital & Harvard Medical School, Boston, MA, USA

David W. Bates, Professor, Brigham & Womens Hospital & Harvard Medical School, Boston, MA, USA

Bernie Pauly, Professor, University of Victoria, British Columbia, Canada

Kasper Glerup Lauridsen

Professor Vinay Nadkarni, MD, MS, Children's Hospital of Philadelphia & University of Pennsylvania, Perelman School of Medicine, USA

Professor Robert A. Berg, MD, Children's Hospital of Philadelphia & University of Pennsylvania, Perelman School of Medicine, USA

Dr. Akira Nishisaki, MD, MSCE, Children's Hospital of Philadelphia & University of Pennsylvania, Perelman School of Medicine, USA

Professor Robert Greif, MD, Bern University Hospital, Switzerland Dr. Enrico Baldi, MD, University of Pavia, Italy

Ass. Professor Jordan Duval-Arnould, MPH, DrPH, Johns Hopkins University Hospital, USA

Professor Marc Berg, MD, Stanford University & Lucile Packard Children's Hospital, Stanford, USA

Professor Adam Cheng, MD, University of Calgary & Alberta Children's Hospital, Canada Ass.

Professor Joyce Yeung, MD, PhD, University Hospitals Birmingham NHS Foundation Trust & University of Warwick, UK

Professor Ian Maconochie, MD, PhD, Imperial College, London, UK

Lars Wiuff Andersen & Mathias Holmberg

Michael Donnino, BIDMC, Harvard Medical School, Boston

Claus Sixtus Jensen

Professor Ian Maconochie FRCPC FRCPI FRCER PhD Consultant in Paediatric Accident and Emergency Medicine St Mary's Hospital London, UK Faculty of Medicine, Imperial College, London, UK

Professor Colin Powell MB ChB, DCH, MRCP(UK), FRACP, FRCPC, MD Emergency Department Sidra Medical and Research Center, Doha Qatar Emergency Department, Weill Cornell

University, Doha Qatar School of Medicine Cardiff University, Cardiff, UK

Dr. Sue Chapman RN, PhD Gulf Regional Clinical Manager Dubai Office

Marie Kristine Jessen

Nathan Shapiro Ass. Professor, MD Emergency Department, Beth Israel Deaconess Medical Center, Longwood, Boston, USA

12. Review committee assessments

Hans Kirkegaard

Professor assessment, Copenhagen University 2020

Assessor: abstracts, posters and presentations. The National Trauma Conference, Aarhus University Hospital

Marianne Lisby

PhD Midterm evaluator, Health Aarhus University

Assessor: abstracts, posters and presentations. The National Trauma Conference, Aarhus University Hospital

Assessor, Prioriteringsudvalget Region Midtjyllands

Assessor, Sundhedsvidenskabelige Professioners Pulje, Aarhus University Hospital

Kasper Glerup Lauridsen

Assessor and member of the review committee *Studerterforskningsprisen 2020*, Health, Aarhus University

Gitte Boier Thygesen

Editor, Danish Journal of Emergency Medicine (Dansk Tidsskrift for Akutmedicin)

13. Grants and funding

Awarded researchers listed by rewarding funds

Aarhus University Research Foundation

Marlice Zwanenburg (DKK 120,000)

A.P. Møller Foundation

Marlice Zwanenburg (DKK 20,000)

Carl and Ellen Hertz foundation

Marie Kristine Jessen (DKK 15,000)

Central Denmark Region "Akutpuljen"

Marie Kristine Jessen (DKK 582,000)

Stine Fjendbo Galili (DKK 229,000)

Frimodt-Heineke Foundation

Marie Kristine Jessen (DKK 25,000)

Health Research Foundation of Central Denmark Region

Marie Kristine Jessen (DKK 215,000)

Mathilde Stærk (DKK 300,000)

Anders Sjørlev Schmidt (DKK 410,913)

**The fund to strengthen health research in Central Region Denmark
(Puljen til styrkelse af sundhedsforskning i Region Midtjylland)**

Stig Holm Ovesen (DKK 1,629,000)
Stine Fjendbo Galili (DKK 1,500,000)
Bo Løfgren (DKK 1,100,000)

Ruth & Holger Hesse's Memorial Fund

Marie Kristine Jessen (DKK 60,000)

Simon Spies Foundation

Marlice Zwanenburg (DKK 91,119)

Seed Grant (spiremidler) Regional Hospital Randers

Marlice Zwanenburg (DKK 15,309)
Mathilde Stærk (DKK 19,625)

SVP Puljen, Aarhus University Hospital

Marianne Lisby and Mia Blaabjerg (DKK 286,000)

The Danish Foundation Trygfonden

Marianne Lisby and Mia Blaabjerg (DKK 300,000)

The Danish Foundation of Health (Helsefonden)

Marianne Lisby and Trine W. Thøgersen (DKK 350,000)
Lars Wiuff Andersen (DKK 300,000)

The Research and Development Foundation of Central Denmark Region

Marianne Lisby and Trine W. Thøgersen (DKK 1,300,000)
Marianne Lisby and Tine Louise Dideriksen (DKK 1,500,000)

The Toyota Foundation Denmark

Marlice Zwanenburg (DKK 163,567)

14. Awards

Best-of-the-best abstract award, American Heart Association 2020

Kasper Glerup Lauridsen

GOLD Snapshot Award, best abstract, Society for Critical Care Medicine 2020

Kasper Glerup Lauridsen

Best Poster Presentation PhD Day 2020

Mathilde Stærk

The European Academy of Nursing Science (EANS) Best Paper Award 2020

Claus Sixtus Jensen

