



SAFER FOR SAFETY - 10 YEARS ANNIVERSARY

SAFER – 10 YEARS IN THE SERVICE OF PATIENT SAFETY

THE FIRST DECADE!

This report presents SAFER's first ten years, from the initial ideas during the establishment process, through developing the center to what it is today. We share memories and results, and look into a future of opportunities and challenges in the years to come.

A MODEL FOR COLLABORATION

In Stavanger, there are longstanding and strong traditions for innovation and development through collaboration within the field of emergency medicine. The three founders of SAFER (The University of Stavanger, Stavanger University Hospital and Laerdal Medical) had for some time been involved in different aspects of simulation based training and education. Together they advanced the idea of establishing a center for simulation, and on August 27th 2004, the project was officially presented. Following a thorough process of planning and building, the center officially opened at May 12th, 2006.

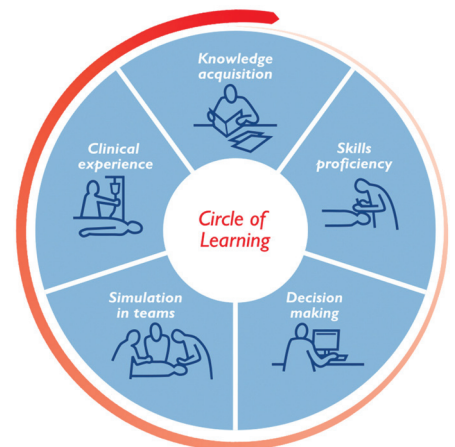
SAFER SEEN FROM THE MANAGING DIRECTOR

Looking back, it has been a wonderful journey. SAFER has become a unique collaboration among clinicians, academia and business developers, thanks to founders that have taken ownership and contributed. Pulling our expertise and resources together creates synergy, as long as we truly believe and implement our goal oriented strategy. From 2016 it will be a pleasure to welcome the Norwegian Air Ambulance Foundation as part of the collaboration.

I'm proud to work with dedicated and highly motivated colleagues and partners who all strive to implement knowledge and simulation-based education as an effective learning tool, and to develop a sustainable faculty among our founders. Being active in national and international simulation societies stimulates further development. Working with simulation-based education demands that we are willing to "walk the talk" in our own development. Curiosity, good teamwork, using all available resources, being assertive and willing to change stimulates our improvement.

For the future: Please keep challenging us, because friction moves us forward!
Make the status quo uncomfortable and the future attractive!

Elsa Søyland, Managing Director, SAFER



The Circle Of Learning is essential in our educational framework



REFLECTIONS FROM THE SAFER-PARTNERS

THE UNIVERSITY OF STAVANGER – IMPROVING TEACHING THROUGH SAFER

For The University of Stavanger, it has been like a happy journey to be a partner in SAFER during the last ten years. The aim of SAFER fits very well into our study programs and fields of research related to teaching and training in acute medicine and simulation. The bachelor students in nursing education, and also the post graduate students taking their specialization in acute, intensive and surgery, give their best credits in their evaluation of the teaching and training at SAFER. This teaching and training at SAFER contributes to realize the vision of the university to increase the students active learning and also the development of new teaching methods. Through the collaboration between Laerdal Medical, Stavanger University Hospital and the University of Stavanger, the research group in patient safety and quality in health care has developed into national and international high levels.

Marit Boyesen, Rector

STAVANGER UNIVERSITY HOSPITAL – A FOUNDING PARTNER

Stavanger University Hospital (SUS) has a legal responsibility to educate health professionals. The educational mission includes students as well as updating and maintaining the competency of our employees. It is important for SUS that all employees prepare continuously and professionally for managing today's challenging clinical situations.

The single most important action to fulfill our educational responsibility of the hospital staff has been to be an active founding member in the SAFER foundation. The amount and quality of training has increased annually as the wards and professionals experience the benefits. The purpose is to ensure our professionals possess and use up-to-date knowledge, skills, and decision-making abilities to improve cooperation and patient treatment. It is a privilege to encourage cooperation between clinical areas at SUS through training and networking via SAFER. SUS is currently one of the leading hospitals in the country in these aspects, but continuously strives to improve its methods, results, and activities.

In the future, it will be important for SUS to build upon the good cooperation and results shown in work accomplished by its dedicated teaching and clinical professionals through SAFER. Of particular importance will be to develop more expertise in surgical and invasive procedural skill training, work we have commenced. We will focus on practicing procedures that are vital for our patients so our staff is best prepared. For such procedures, simulation training and deliberate, repetitive practice are crucial. Whether our staff train in center or in situ/clinic, the quality of the training is paramount. We will continue to challenge ourselves and our colleagues both locally and globally, to improve education effectiveness to increase excellence in clinical practice.

Inger Cathrine Bryne, Chief Executiv Officer



Photo: Bernt-Eirik Rossavik, Lærdal Medical

LAERDAL MEDICAL – UNDERSTANDING UNMET NEEDS THROUGH SAFER;

Laerdal Medical had high hopes and ambitions when co-founding SAFER. We had three primary goals in mind. We aimed for developing a center for patient simulation with ongoing educational research to truly affect and improve the quality of patient care in the region. We saw this as a source for mutually beneficial collaboration among the founding partners.

We wanted to develop valuable evidence-based educational methods both nationally and internationally throughout the foundation's growing network of international partnerships and cooperation.

Through SAFER activities, Laerdal Medical has constantly worked to gain more understanding of unmet clinical and research needs. Laerdal Medical uses this understanding nationally and internationally to fulfill its vision to "Help Save Lives".

Our goals are to develop relevant and innovative solutions for patient simulation that are globally relevant and bring value to health care.

Taking stock after ten years, we believe SAFER has come a very long way towards meeting these three objectives. Thanks to the highly qualified and motivated staff at SAFER, and thanks to the contributions and commitment from all of the founding partners. This is an ongoing journey. We have high ambitions and hopes for continuing progress.

Tore Lærdal, Chairman, Laerdal Medical

THE NORWEGIAN AIR AMBULANCE FOUNDATION – PARTNERING FOR IMPROVEMENTS

The Norwegian Air Ambulance Foundation (NAAF) is a non-profit organisation financed by private members and corporate supporters. The main objective of the NAAF is to save lives and improve care of critically ill and injured by improving the air ambulance service in Norway, through research, development, education and flight operation. From 2016 NAAF is entering into partnership with SAFER. NAAF has followed the development of SAFER from the early years until today and acknowledges SAFER as an important national and international contributor to the development and implementation of facilitated learning in critical care. The main goals of NAAF in joining a partnership with SAFER is to strengthen the competence and skills of prehospital care providers in the air ambulance services of Norway, strengthen the cross professional cooperation between emergency personnel outside the hospital in all branches, and increase prehospital patient safety.

Prof Hans Morten Lossius, PhD, General Secretary, Norwegian Air Ambulance Foundation



IMPACT THROUGH INVOLVEMENT AND ENGAGEMENT

THE PARTNERSHIP MODEL

Much of the success of SAFER is based on the unique partnership of the three founding organisations: University of Stavanger, University Hospital of Stavanger and Laerdal Medical. Senior executives from each of the partners form the Board of SAFER, but more importantly, clinicians, educators and researchers from the partners continuously work together to improve learning –and patient outcomes.

REFINING EDUCATIONAL METHODOLOGIES

A unique feature of SAFER is the symbiotic relationship between education and research. Educational methodologies are deployed, tested, analysed and refined. Ultimately, educational interventions should result in improved patient outcomes, and for this reason, the educational methodologies used on SAFER are constantly being refined with that end-goal in mind. At a high level, SAFER's framework for education and patient safety is based on a socio-cultural perspective, and emphasizes the interaction between human factors, technology and organization.

Highly motivated staff from all three partners are involved on a daily basis in the development and delivery of high quality education, undertaking research with both a local and a global health perspective, and developing new methodologies and technology that may strengthen the connection between a meaningful educational intervention and a favourable patient outcome.

ENGAGEMENT IS A PROVEN KEY TO SUCCESS

Through the implementation of EUSim's¹ Train-The-Trainer program, SAFER has engaged large groups of educators and clinicians over the past 10 years. This, in turn, has resulted in ever-new groups leveraging medical simulation to improve education –and patient outcomes.

SAFER has made a deliberate choice to engage a wider community of educators and clinicians in all activities at the centre. Through the Train-The-Trainer program, most facilities, wards and departments now have their own well-trained facilitators who can instrumentally use medical simulation to improve on local challenges.

In recent years, medical communities in other sectors like the oil & gas industry have been engaged at a large scale to provide training to healthcare personnel working offshore on oilrigs and other vessels. The SAFER methodologies have proven themselves successful also with such a highly specialized group of medical personnel.

1 <http://www.eusim.org/>



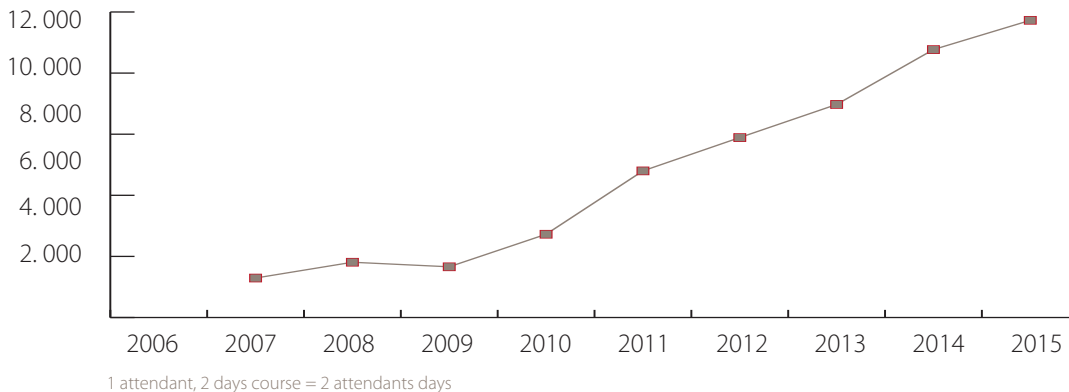
IMPACT THROUGH REACH

AN ANNUAL GROWTH OF 18 %

The level of activity has grown steadily and significantly from the first years, illustrated by the number of attendants. In the beginning, many users viewed training at SAFER as an add-on activity, but from 2009 there was a shift into curriculum and working schedule integration. This caused a temporary reduction in growth. During the first years, most all training were performed at the center. Today the volume of training taking place at the center or being run at the working/studying place is distributed in the ratio of 60:40 %. This is explained by either what is appropriate for the training itself or the available capacity at the center.

The three founding partners are still the major user groups, but were joined by the offshore courses in 2008. Despite a rapid growth in the use of SAFER, the distribution of users between the different groups has been relatively unchanged by time.

ATTENDANTS DAYS 2006-2015



THE FACILITATORS ARE THE MAIN ASSET

The capacity to handle the volume of activity is dependent on training facilitators and course directors, whose daily working place is with the founding organisations. Running facilitator courses and faculty development has been a continuous process, and currently SAFER has trained more than 250 facilitators for the founding partners. From this group, about 25-30 % regularly and actively maintain and apply their facilitator competencies. Faculty development and the daily running and management of the center, are taken care of by a core staff of 8 full time positions.

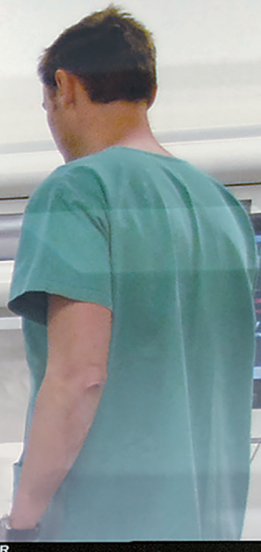
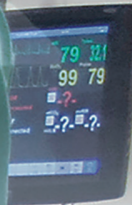


Photo: Benoit Enik, Rossavik, Landdal Medical

THE EVOLUTION AT SAFER

During the SAFER-childhood, we experienced an evolution in the mindset and understanding by the users and the faculty of the center. The initial focus on technical aspects and emergency medicine has matured into deeper understandings. Related to Drefus' taxonomy, this has been our development from the amateur levels to expert levels, where SAFER today takes a place in international networks for advancing simulation.

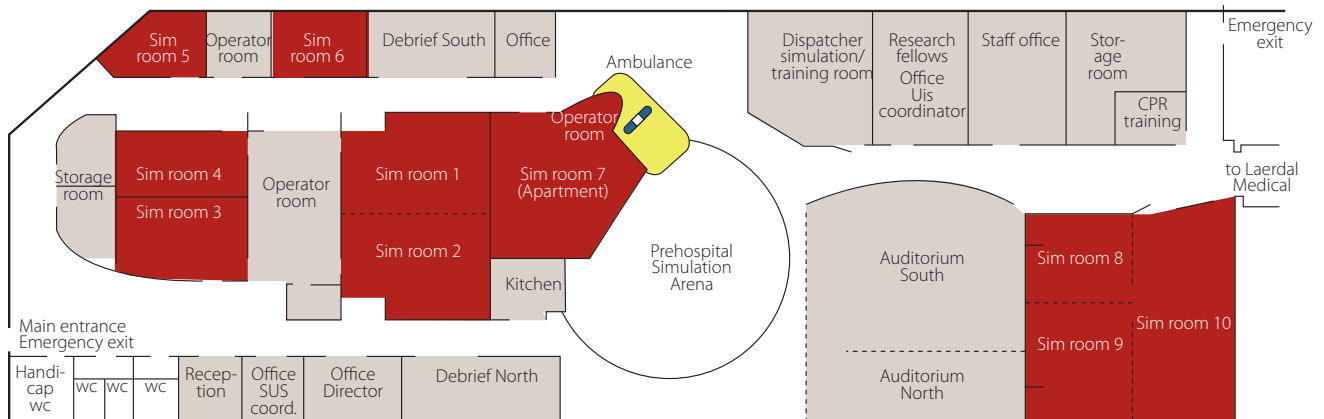
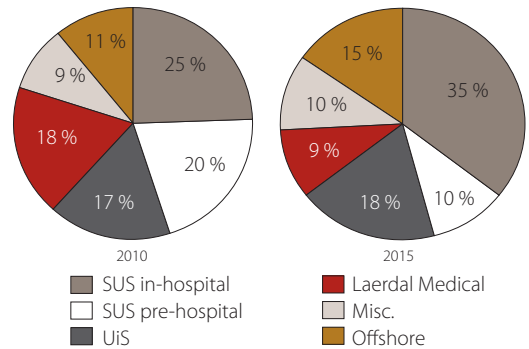
SESAM 2012 – SAFER PRACTICES

One important contributor to SAFER's development was hosting the annual SESAM-Conference in 2012. To handle the three-day conference with more than 700 attendants, 60 exhibitors and 204 abstracts, we had the pleasure of assistance from more than 70 colleagues in the SAFER-network.

EXTERNAL CUSTOMERS AS A CRITICAL FRIEND

From 2008, SAFER has provided courses for providers of emergency healthcare on offshore oil & gas-installations. From the gentle piloting of one company, we now offer regular training for 25 different companies. The courses have moved from verifying individual clinical skills to training inter-professional teams to optimise their performance. The constructive discussions with the external customers has influenced the advancement of our educational platform. This asset of experience and deeper understanding is generic and valid for all who are connected to SAFER. Our challenge now is to forward this within our faculty.

DISTRIBUTION OF USER GROUPS



With 900m² floor space, SAFER covers the needs for all links in the Chain of Survival.



THE WAY AHEAD

DEMONSTRATING THE VALUE OF MEDICAL SIMULATION

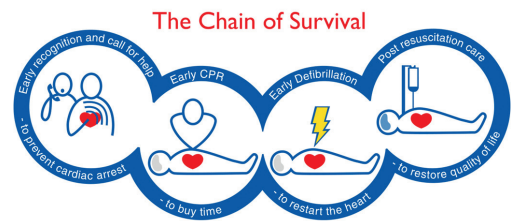
There is no doubt that medical simulation has proven itself valuable for learning and training in healthcare. As the methodology matures, so does the need to demonstrate value to key stakeholders in the medical community. Reduction of patient safety errors, staff motivation –and retention, uncover hidden safety threats and documenting learning outcomes are but a few of the areas where SAFER sees its role within the founding organisations in the future.

The success of a program or an intervention is defined by its impact on the very outcomes one is seeking to improve. Practical competence on program implementation in healthcare will therefore be a key area of focus for SAFER in the time to come.

EXPANSION TO NEW USER GROUPS

While many of the departments at the hospital, and relevant user groups at the university, are now actively engaged in improving learning –and patient outcomes through simulation, there are still important groups who play a key role in the survival chain who need to be on board. Dispatch centers, GP-offices and community healthcare, are some examples. SAFER will facilitate the inclusion and engagement of such new groups of professionals to further strengthen the whole chain of survival. This will happen both through existing programs, but also by targeted efforts with key stakeholders in respective organisations.

As Telemedicine enters the stage to bring more advanced medical competence to remote areas and installations, SAFER is now well-positioned with both technological capabilities and medical competencies to play a key role in implementing programs also in this area.



PROGRAM DEVELOPMENT FOR LOCAL NEEDS

The evidence-based practices developed at SAFER over the last 10 years will be put to use to help address specific needs in future healthcare. Over time it has become clear that success in rolling out new healthcare programs relies heavily on the way these programs are implemented. SAFER will act as a qualified partner with relevant user groups to develop and implement programs that address specific competencies needed with our future healthcare workforce.

Faculty development is a key factor in developing and implementing such local programs. Maintaining and activating the competence of the more than 250 educators who have completed the Train-The-Trainers program at SAFER, heavily depends on a sound strategy for keeping them engaged and active. SAFER will develop and implement a systematic “Maintenance of Competence” plan to support all faculty in their continuous professional development as in-situ, simulation-based educators.



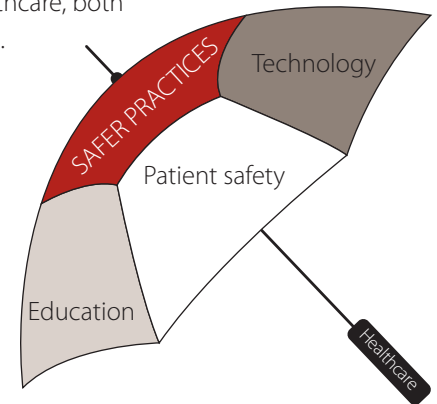
Photo: Beant-Erik Rossawik, Laerdal Medical

10 YEARS OF RESEARCH AND DEVELOPMENT

“SAFER PRACTICES”

One major reason for establishing SAFER was to improve patient safety in acute hospitals and prehospital emergency medical services (EMS). Creating safer acute healthcare practices involves a multi-faceted array of ingredients such as education, professional work culture, safer work processes, quality improvement development, implementation of new ideas and tools, as well as improved technology (including human-machine interface and use). Importantly, nurses, doctors and allied health professionals must be directly involved. They are the ones working at the “sharp end” of healthcare, both inside and outside hospitals, and therefore the one able to define the problems to be solved.

For these reasons SAFER developed its own research program named “SAFER Practices”. It consisted of the following research themes: education, patient safety, and technology (Figure). Together these themes should bring perspectives and methodologies that, when combined, would provide insight, analyses and models for improvements both on an individual patient and professional level, but even more importantly for acute healthcare at large. In addition, the strong network of the partners in the program would allow drawing upon ongoing research in other countries and other research groups.



IMPRESSIVE LIST OF SCIENTIFIC PUBLICATIONS

Importantly, the research program did not act as a limitation. All the clinicians and researchers involved with SAFER have been able to follow their own lead. The result has been an impressive list of scientific publications, several Masters theses and many PhD dissertations dealing with simulation and patient safety topics like cardiac arrest management, prehospital critical care and risk management, new-born resuscitation, acute team training and implementation, interprofessional training, as well as outcome studies. The following members of the SAFER network have been granted stipends from The Bjørn Lind Research Fellowship: Steffen Sollid, Hege Ersdal, Sissel Eikeland Husebø, Conrad Bjørshol, Ingunn Aase and Theresa Olavsveengen.

SIMULATION TO IMPROVE PATIENTS SAFETY

The most recent publication is very characteristic for the on-going SAFER co-operation. Titled “Top five topics healthcare simulation can address to improve patients safety”, it has co-authors from the local SAFER network as well as from a much larger international network. Further, it leads the way for more future cooperation. In the years to come a global perspective and international co-operation will be even more eminent at SAFER. Further, the focus will be on healthcare simulation-based education and implementation in general. This means that both surgical skills and diagnostic approaches like ultrasound will be included in the SAFER portfolio. A future research program will reflect both the sound basis SAFER now has, as well as many new expansions.

SCIENTIFIC PUBLICATIONS LINKED TO SAFER 2005-15

1. Langhelle A, Nolan J, Herlitz J, Castren M, Wenzel V, **Søreide E**, Engdahl J, Steen PA; on behalf of the participants at the 2003 Utstein Consensus Symposium. Recommended guidelines for reviewing, reporting, and conducting research on post-resuscitation care: The Utstein style. **Resuscitation** 2005;66:271-83.
2. **Søreide E**, Deakin CD. Pre-hospital fluid therapy in the critically injured patient-a clinical update. **Injury** 2005;36:1001-10.
3. **Søreide E**, Eriksson LI, Hirlekar G, Eriksson H, Henneberg SW, Sandin R, Raeder J; (Task Force on Scandinavian Pre-operative Fasting Guidelines, Clinical Practice Committee Scandinavian Society of Anaesthesiology and Intensive Care Medicine). Pre-operative fasting guidelines: an update. **Acta Anaesthesiol Scand** 2005;49:1041-7.
4. Salthe J, Kristiansen SM, **Sollid S**, Oglænd B, Søreide E. Capnography rapidly confirmed correct endotracheal tube placement during resuscitation of extremely low birthweight babies (< 1000 g). **Acta Anaesthesiol Scand** 2006;50:1033-6.
5. Heier HE, Bugge W, Hjelmeland K, **Søreide E**, Sorlie D, Haheim L. Transfusion vs. alternative treatment modalities in acute bleeding: a systematic review. **Acta Anaesthesiol Scand** 2006;50:920-31.
6. **Søreide E**. The Emergency Department – the missing link? An update on the management of patients with severe sepsis. **Scand J Trauma Resusc Emerg Med** 2006; 14: 202-205
7. Busch M, **Søreide E**, Lossius HM, Lexow K, Dickstein K. Rapid implementation of therapeutic hypothermia in comatose out-of-hospital cardiac arrest survivors. **Acta Anaesthesiol Scand**. 2006; 50:1277-83.
8. **Søreide E**, Ljungqvist O. Modern preoperative fasting guidelines: a summary of the present recommendations and remaining questions. **Best Pract Res Clin Anaesthesiol**. 2006; 20:483-91.
9. Søreide K, Søyland H, Lossius HM, Vethrus M, Søreide JA, **Søreide E**. Resuscitative emergency thoracotomy in a Scandinavian trauma hospital--is it justified? **Injury** 2007; 38:34-42.
10. **Søreide E**. Therapeutic hypothermia. **Tidsskr Nor Laegeforen** 2007;127:201.
11. Skeie S, **Søreide E**, Cooper J. [Insulin infusion for critically ill patients] **Tidsskr Nor Laegeforen** 2007;127:2378-81. Review. Norwegian.
12. Søreide K, Krüger AJ, Vårdal AL, Ellingsen CL, **Søreide E**, Lossius HM. Epidemiology and contemporary patterns of trauma deaths: changing place, similar pace, older face. **World J Surg** 2007;31: 2092-103.
13. **Hansen BS**, Severinsson E. Intensive care nurses' perceptions of protocol-directed weaning--a qualitative study. **Intensive Crit Care Nurs**. 2007;23:196-205.
14. Bjørk IT, **Hansen BS**, Samdal GB, Tørstad S, Hamilton GA. Evaluation of clinical ladder participation in Norway. **J Nurs Scholarsh**. 2007;39:88-94.
15. Bjørk IT, Samdal GB, **Hansen BS**, Tørstad S, Hamilton GA. Job satisfaction in a Norwegian population of nurses: a questionnaire survey. **Int J Nurs Stud**. 2007;44:747-57.
16. Ellingsen CL, Eggebø TM, **Lexow K**. Amniotic fluid embolism after blunt abdominal trauma. **Resuscitation**. 2007;75:180-3.
17. **Lexow K**, Sunde K. Why Norwegian 2005 guidelines differs slightly from the ERC guidelines. **Resuscitation**. 2007;72:490-2.
18. **Sollid SJM**, Eidsen K, Aven T, Søreide E. Risk assessment in critical care medicine – a tool to assess patient safety. IN: Risk, **Reliability and Social Safety: Proceedings** of the European Safety and Reliability Conference 2007 (ESREL 2007), Stavanger, Norway, 25-27 June 2007. Aven T, Vinnem JE (eds). Taylor & Francis , 2007. ISBN 0415447860
19. Våga A, Busch M, Karlsen TE, Nilsen OB, **Søreide E**. A pilot study of key nursing aspects with different cooling methods and devices in the ICU. **Resuscitation** 2008;76:25-30.
20. Gaarder C, Naess PA, Frischknecht Christensen E, Hakala P, Handolin L, Heier HE, Ivancev K, Johansson P, Leppäniemi A, Lippert F, Lossius HM, Opdahl H, Pillgram-Larsen J, Røise O, Skaga NO, **Søreide E**, Stensballe J, Tønnessen E, Töttermann A, Ortenwall P, Ostlund A. Scandinavian Guidelines –“The massively bleeding patient”. **Scand J Surg** 2008; 97:15-36.
21. **Søreide E**, Sunde K. Therapeutic hypothermia after out-of hospital cardiac arrest: how to secure worldwide implementation. **Curr Opin Anaesthesiol** 2008 ;21(2): 209-15.
22. **Bjørshol CA**, Søreide E, Torsteinbø TH, Lexow K, Nilsen OB, Sunde K. Quality of chest compressions during 10min of single-rescuer basic life support with different compression: ventilation ratios in a manikin model. **Resuscitation** 2008;77:95-100.
23. **Ersdal HL**, Verkuyil DA, Björklund K, Bergström S. Symphysiotomy in Zimbabwe; postoperative outcome, width of the symphysis joint, and knowledge, attitudes and practice among doctors and midwives. **PLoS ONE**. 2008;3(10):e3317
24. **Sollid SJ**, Heltne JK, Søreide E, Lossius HM: Pre-hospital advanced airway management by anaesthesiologists: Is there still room for improvement? **Scand J Trauma Resusc Emerg Med** 2008; 16: 2
25. Busch M, **Søreide E**: Prognostication after out-of-hospital cardiac arrest, a clinical survey. **Scand J Trauma Resusc Emerg Med** 2008; 16: 9
26. Hansen BS, Fjælberg WT, Nilsen OB, Lossius HM, **Søreide E**: Mechanical ventilation in the ICU- is there a gap between the time available and time used for nurse-led weaning? **Scand J Trauma Resusc Emerg Med** 2008; 16: 17

27. **Sollid SJ, Strand K, Soreide E:** Percutaneous dilatational tracheotomy in the ICU: a Norwegian survey focusing on perceived risk and safety attitudes. **Eur J Anaesthesiol** 2008; 25: 925-32.
28. Castrén M, Karlsten R, Lippert F, Christensen EF, Bovim E, Kvam AM, Robertson-Steel I, Overton J, Kraft T, Engerstrom L, Garcia-Castrill Riego L; **Emergency Medical Dispatch expert group** at the Utstein Consensus Symposium 2005. Recommended guidelines for reporting on emergency medical dispatch when conducting research in emergency medicine: the Utstein style. **Resuscitation**. 2008;79:193-7.
29. Verkyul DA, **Ersdal HL**, Raassen TJ. Absence of proper training in symphysiotomies resulted in this operation being underused, performed when contraindicated and possibly in a specific kind of urinary fistula. **Acta Obstet Gynecol Scand** 2008;87:1380-3; 1383-4
30. Hovancsek M, Jeffries PR, Escudero E, Foulds BJ, **Husebø SE**, Iwamoto Y, Kelly M, Petrini M & Wang A. Creating Simulation Communities of practice: An International Perspective. **Nurs Educ Persp** 2009;30: 121-125.
31. Bjørk IT, Tørstad S, **Hansen BS**, Samdal GB. Estimating the cost of professional developmental activities in health organizations. **Nurs Econ**. 2009;27:239-44.
32. Olsen KD, Dysvik E, **Hansen BS**. The meaning of family members' presence during intensive care stay: a qualitative study. **Intensive Crit Care Nurs**. 2009;25:190-8.
33. **Hansen BS**, Severinsson E. Dissemination of research-based knowledge in an intensive care unit-a qualitative study. **Intensive Crit Care Nurs**. 2009;25:147-54.
34. **Hansen BS**, Severinsson E. Physicians' perceptions of protocol-directed weaning in an intensive care unit in Norway. **Nurs Health Sci**. 2009;11:71-6.
35. **Sollid SJ**, Lockey D, Lossius HM. A consensus-based template for uniform reporting of data from pre-hospital advanced airway management. **Scand J Trauma Resusc Emerg Med**. 2009; 17:58.
36. **Bjørshol CA**, Lindner TW, Søreide E, Moen L, Sunde K. Hospital employees improve basic life support skills and confidence with a personal resuscitation manikin and a 24-min video instruction. **Resuscitation** 2009; 80:898-902.
37. Strand K, **Søreide E**, Aardal S, Flaatten H. A comparison of SAPS II and SAPS 3 in a Norwegian intensive care unit population. **Acta Anaesthesiol Scand** 2009; 53:595-600.
38. **Søreide E**. Prehospital cooling in cardiac arrest--the next frontier? **Scand J Trauma Resusc Emerg Med** 2009;17:54.
39. Skogvoll E, **Lexow K**. [Heart arrest--definition and occurrence]. **Tidsskr Nor Laegeforen**. 2009;129:1351-2.
40. Breuer JP, Bosse G, Seifert S, Prochnow L, Martin J, Schleppers A, Geldner G, **Søreide E**, Spies C. Pre-operative fasting: a nationwide survey of German anaesthesia departments. **Acta Anaesthesiol Scand** 2010; 54:313-20.
41. Flaatten H, **Søreide E**. [Intensive medicine in Norway]. **Tidsskr Nor Laegeforen** 2010;130:166-8.
42. Torgersen J, Strand K, Bjelland TW, Klepstad P, Kvåle R, **Søreide E**, Wentzel-Larsen T, Flaatten H. Cognitive dysfunction and health-related quality of life after a cardiac arrest and therapeutic hypothermia. **Acta Anaesthesiol Scand** 2010; 54:721-28
43. Busch M, **Søreide E**. Successful use of therapeutic hypothermia in an opiate induced out-of-hospital cardiac arrest complicated by severe hypoglycaemia and amphetamine intoxication: a case report. **Scand J Trauma Resusc Emerg Med**. 2010;18:4.
44. **Sollid SJ**, Lossius HM, Nakstad AR, Aven T, Soreide E. Risk assessment of pre-hospital trauma airway management by anaesthesiologists using the predictive Bayesian approach. **Scand J Trauma Resusc Emerg Med**. 2010;18:22.
45. **Sollid SJ**, Lossius HM, Soreide E. Pre-hospital intubation by anaesthesiologists in patients with severe trauma: an audit of a Norwegian helicopter emergency medical service. **Scand J Trauma Resusc Emerg Med**. 2010; 18:30.
46. **Sollid SJM**, Eidesen K, Aven T, Søreide E. Assessing the risk of percutaneous dilatational tracheostomy in ICUs using a broad event-consequence-uncertainty perspective. **International Journal of Risk & Safety in Medicine** 2010;22: 115-129.
47. Neset A, **Birkenes TS**, Myklebust H, et al. A randomized trial of the capability of elderly lay persons to perform chest compression only CPR versus standard 30:2 CPR. **Resuscitation** 2010;81:887-92.
48. Strand K, Walther SM, Reinikainen M, Ala-Kokko T, Nolin T, Martner J, Mussalo P, **Søreide E**, Flaatten HK. Variations in the length of stay of intensive care unit nonsurvivors in three scandinavian countries. **Crit Care**. 2010;14:R175.
49. **Åneman A**, Mellin-Olsen J, **Søreide E**; SSAI Position Paper Task Force. The future role of the Scandinavian anaesthesiologist: a web-based survey. **Acta Anaesthesiol Scand**. 2010;54:1071-6.
50. **Søreide E**, Kalman S, **Åneman A**, Nørregaard O, Pere P, Mellin-Olsen J; Position Paper Task Force. Shaping the future of Scandinavian anaesthesiology: a position paper by the SSAI. **Acta Anaesthesiol Scand**. 2010;54:1062-70.
51. **Bjørshol CA**, Myklebust H, Nilsen KL, Hoff T, Bjørkli C, Illguth E, Søreide E, Sunde K. Effect of socioemotional stress on the quality of cardiopulmonary resuscitation during advanced life support in a randomized manikin study. **Crit Care Med**. 2011; 39:300-4.
52. **Husebø SE**, Rystedt H & Friberg F. Educating for teamwork - nursing students' coordination in simulated cardiac arrest situations. **J Adv Nurs** 2011, 67, 2239-55.
53. Nestel D, Groom J, **Husebø SE** & O'Donnell JM. Simulation for Learning and Teaching Procedural Skills. The State of the Science. **Simulation in Healthcare** 2011, 6, S10-13.
54. Busch M, **Søreide E**. Should advanced age be a limiting factor in providing therapeutic hypothermia to cardiac arrest survivors? A single center observational study. **Ther Hypo Temp Manag** 2011; 1: 29-32.
55. Hansen BS, **Søreide E**, Warland AM, Nilsen OB. Risk factors of post-operative urinary retention in hospitalised patients. **Acta Anaesthesiol Scand**. 2011; 55: 545-8.

56. Sunde K, **Søreide E**. Therapeutic hypothermia after cardiac arrest: where are we now? **Curr Opin Crit Care**. 2011;17:247-53.
57. Thorsen K, Ringdal KG, Strand K, **Søreide E**, Hagemo J, Søreide K. Clinical and cellular effects of hypothermia, acidosis and coagulopathy in major injury. **Br J Surg**. 2011;98:894-907.
58. Smith I, Kranke P, Murat I, Smith A, O'Sullivan G, **Søreide E**, Spies C, in't Veld B; European Society of Anaesthesiology. Perioperative fasting in adults and children: guidelines from the European Society of Anaesthesiology. **Eur J Anaesthesiol**. 2011;28:556-69
59. H Elsharkawi, H Sandbladh, T Aloudat, A Girardau, I **Tjøflåt** and C Brunström. Preparing Humanitarian Workers for Future Disaster Response: A Red Cross Field Training Model. **Humanitarian Exchange Magazine** 2010, 46, 45-47
60. **Lindner TW**, Søreide E, Nilsen OB, Mathisen W, Lossius HM. Good outcome in every fourth resuscitation attempt is achievable-An Utstein template report from the Stavanger region. **Resuscitation** 2011; 82: 1508-13.
61. **Bjørshol CA**, Sunde K, Myklebust H, Assmus J, Søreide E. Decay in chest compression quality due to fatigue is rare during prolonged advanced life support in a manikin model. **Scand J Trauma Resusc Emerg Med**. 2011;19:46.
62. **Husebø SE**, Friberg F, **Søreide E**, Rystedt H. Instructional problems in briefings: how to prepare nursing students for simulation-based cardiopulmonary resuscitation training. **Clinical Simulation in Nursing** 2011; e-pub June 2011.
63. **Hansen BS**, Gundersen EM, Bjørnå GB. Improving student supervision in a Norwegian intensive care unit: a qualitative study. **Nurs Health Sci**. 2011;13:255-61.
64. Aarsetoey H, Aarsetoey R, **Lindner T**, Staines H, Harris WS, Nilsen DW. Low levels of the omega-3 index are associated with sudden cardiac arrest and remain stable in survivors in the subacute phase. **Lipids**. 2011;46:151-61.
65. Fevang E, Lockey D, Thompson J, Lossius HM; **Torpo Research Collaboration**. The top five research priorities in physician-provided pre-hospital critical care: a consensus report from a European research collaboration. **Scand J Trauma Resusc Emerg Med**. 2011;19:57.
66. Rehn M, Lossius HM, Tjosevik KE, Vetrhus M, Østebø O, Eken T; **Rogaland Trauma System Study Collaborating Group**. Efficacy of a two-tiered trauma team activation protocol in a Norwegian trauma centre. **Br J Surg**. 2012;99:199-208.
67. **Ersdal HL**, Mduma E, Svensen E, Sundby J, Perlman JM. Intermittent Detection of Fetal Heart Rate Abnormalities Identify Infants at Greatest Risk for Fresh Stillbirths, Birth Asphyxia, Neonatal Resuscitation, and Early Neonatal Deaths in a Resource Limited Setting. **Neonatology** 2012;102:235-42
68. **Ersdal HL**, Mduma E, Svensen E, Perlman JM. Birth Asphyxia: A Major Cause of Early Neonatal Mortality in a Tanzanian Rural Hospital. **Pediatrics** 2012;129:1238-43.
69. **Oveland NP**, Sloth E, Andersen G, Lossius HM. A porcine pneumothorax model for teaching ultrasound diagnostics. **Acad Emerg Med**. 2012;19:586-92.
70. Neset A, **Birkenes TS**, Furunes T, et al. A randomized trial on elderly laypersons' CPR performance in a realistic cardiac arrest simulation. **Acta Anaesthesiol Scand** 2012;56:124-31.
71. Bjørkli CA, Øvergård KI, **Bjørshol CA**, Myklebust H, Hoff T. Effects of socio-emotional stressors on ventilation rate and subjective workload during simulated CPR by lay rescuers. **Appl Ergon**. 2012;43: 799-802.
72. **Erdal HL**, Mduma E, Svensen E, Perlman JM. Early initiation of basic resuscitation interventions including face mask ventilation may reduce birth asphyxia related mortality in low-income countries. **Resuscitation** 2012;83:869-73.
73. **Tjøflåt I**. & Karlens B. Challenges in sharing knowledge; reflections from an expatriate nurse working in a hospital in South Sudan. **International Nursing Review** 2012, 59, 489-93.
74. **Birkenes TS**, Myklebust H, Neset A, et al. Video analysis of dispatcher-rescuer teamwork-Effects on CPR technique and performance. **Resuscitation** 2012;83:494-9.
75. **Husebø SE**, Bjørshol CA, Rystedt H, Friberg F, Søreide E. A comparative study of defibrillation and cardiopulmonary resuscitation performance during simulated cardiac arrest in nursing student teams. **Scand J Trauma Resusc Emerg Med**. 2012;20:23.
76. **Hansen BS**, Rørtveit K, Leiknes I, Morken I, Testad I, Joa I, Severinsson E. Patient experiences of uncertainty - a synthesis to guide nursing practice and research. **J Nurs Manag**. 2012;20:266-77.
77. Rasmussen MB, Dieckmann P, Barry Issenberg S, Ostergaard D, **Søreide E**, Ringsted CV. Long-term intended and unintended experiences after Advanced Life Support training. **Resuscitation**. 2012;
78. Johnsen AS, Fattah S, **Sollid SJ**, Rehn M. Impact of helicopter emergency medical services in major incidents: systematic literature review. **BMJ Open**. 2013;3:e003335.
79. **Oveland NP**, Lossius HM, Aagaard R, Connolly J, Sloth E, Knudsen L. Animal laboratory training improves lung ultrasound proficiency and speed. **J Emerg Med**. 2013;45:e71-8.
80. **Oveland NP**, Lossius HM, Wemmelund K, Stokkeland PJ, Knudsen L, Sloth E. Using thoracic ultrasonography to accurately assess pneumothorax progression during positive pressure ventilation: a comparison with CT scanning. **Chest**. 2013;143:415-22.
81. **Ersdal HL**, Singhal N. Resuscitation in Resource-limited Settings. Invited Review article. **Semin Fetal Neonatal Med**. 2013;18:373-8.
82. **Ersdal HL**, Vossius C, Bayo E, Mduma E, Perlman JM, Lippert A, Søreide E. A one-day "Helping Babies Breathe" Course Improves Simulated Performance but not Clinical Management of Neonates. **Resuscitation** 2013;84:1422-1427.
83. EJT Nelissen, HL **Ersdal**, D Østergaard, ER Mduma et al. Helping Mothers Survive Bleeding After Birth: An Educational Intervention Study of Simulation-Based Training in a Low-Resource Setting. **Acta Obstet Gynecol Scand** 2013; doi

84. EJT Nelissen, E Mduma, HL **Ersdal**, B Evjen-Olsen, J van Roosmalen, J Stekelenburg. Maternal near miss and mortality in a rural referral hospital in northern Tanzania: a cross-sectional study. **BMC Pregnancy Childbirth** 2013;13:141
85. EJT Nelissen, E Mduma, JEW Broerse, HL **Ersdal**, B Evjen-Olsen, J van Roosmalen, J Stekelenburg. Applicability of the WHO Maternal Near Miss Criteria in a Low-Resource Setting. **PLOS One** 2013;
86. Msembo G, Massawe A, Mmbando D, Mwizamuholya D, **Ersdal** HL, Perlman J. Newborn Mortality and Fresh Stillbirth Rates in Tanzania After Helping Babies Breathe Training. **Pediatrics** 2013; 131: 353-60
87. **Husebø** SE, Dieckmann P, Rystedt H, Søreide E, Friberg F. The relationship between facilitators' questions and the level of reflection in postsimulation debriefing. **Simul Healthc**. 2013;8:135-42.
88. **Oveland** NP, Søreide E, Lossius HM, Johannessen F, Wemmelund KB, Aagaard R, Sloth E. The intrapleural volume threshold for ultrasound detection of pneumothoraces: an experimental study on porcine models. **Scand J Trauma Resusc Emerg Med**. 2013;21:11.
89. **Søreide** E, Baardsen R. Probabilities, predictors, and self-fulfilling prophecies. **Crit Care Med** 2013; 41:1158-60.
90. **Tjøflåt** I & Karlsen B (2013) Building clinical practice in the Palestine Red Crescent operation theatres in Lebanon: reflections from the perspective of an expatriate nurse. **International Nursing Review** 2013;60:545-549.
91. **Lindner** TW, Langorgen J, Sunde K, Larsen AI, Kvaloy JT, Heltne JK, Draegni T, Søreide E. Factors predicting the use of therapeutic hypothermia and survival in unconscious out-of-hospital cardiac arrest patients admitted to the ICU. **Crit Care** 2013;17: R147.
92. **Søreide** E, Morrison L, Hillman K, Monsieurs K, Sunde K, Zideman D, Eisenberg M, Sterz F, Nadkarni VM, Soar J, Nolan JP; on behalf of the Utstein Formula for Survival Collaborators. The Formula for Survival in Resuscitation. **Resuscitation** 2013;84:1487-93.
93. **Aase** I, Aase K, Dieckmann P. Teaching interprofessional teamwork in medical and nursing education in Norway: a content analysis. **J Interprof Care**. 2013;27:238-45.
94. **Dyrstad** DN, Hansen BS, Gundersen EM. Factors that influence user satisfaction: tracheotomised home mechanical ventilation users' experiences. **J Clin Nurs**. 2013; 22:331-8.
95. Clemmesen L, Bendtsen TF, Sloth E, **Oveland** NP, Knudsen L. [Gelatin phantom for training of ultrasound guided vascular access]. **Ugeskr Laeger** 2013;175:576-8.
96. **Birkenes** TS, Myklebust H, Kramer-Johansen J. Time delays and capability of elderly to activate speaker function for continuous telephone CPR. **Scand J Trauma Resusc Emerg Med** 2013;21:40.
97. **Birkenes** TS, Myklebust H, Kramer-Johansen J. New pre-arrival instructions can avoid abdominal hand placement for chest compressions. **Scand J Trauma Resusc Emerg Med** 2013;21:47.
98. **Søreide** E, Åneman A. Your call is important to us. Do not put your medical emergency team on hold. **Crit Care Med** 2014; 42:195-6.
99. **Sollid** SJ, Søreide E. Human factors play a vital role in the outcome of percutaneous dilatational tracheostomy. **Crit Care**. 2014;18:409.
100. **Abrahamsen** HB, Sollid SJ, Öhlund LS, Røislien J, Bondevik GT. Simulation-based training and assessment of non-technical skills in the Norwegian Helicopter Emergency Medical Services: a cross-sectional survey. **Emerg Med J**. 2014 Oct 24.
101. **Søreide** E, Lockey D. To intubate or not to intubate-is that (the only) question? **Crit Care Med**. 2014;42:1543-4.
102. Vu H, Eftestøl T, Engan K, Eilevstjønn J, Linde J, **Ersdal** H. Exploratory Analysis of Ventilation Signals from Resuscitation Data of Newborns. Congress paper, **IEEE/CAS-EMB Biomedical Circuits and Systems Conference** 2014.
103. Vu H, Eftestøl T, Engan K, Eilevstjønn J, Linde J, **Ersdal** H. Exploratory Analysis of Heart Rate Changes in Newborns to Investigate the Effectiveness of Bag-Mask Ventilation. **Congress paper, The Computing in Cardiology** 2014.
104. **Ersdal** HL, Linde J, Mduma ER, Auestad BH, Perlman J. Neonatal Outcome Following Cord Clamping After Onset of Spontaneous Respiration. **Pediatrics** 2014; 134:265-72
105. **Vossius** C, Lotto E, Lyanga S, Mduma E, Msembo G, Perlman J, **Ersdal** HL. Cost-effectiveness of the "Helping Babies Breathe" program in a rural hospital in Tanzania. **PLOS One** 2014;
106. **Lindner** T, Vossius C, Mathiesen WT, Søreide E. Life years saved, standardised mortality rates and causes of death after hospital discharge in out-of-hospital cardiac arrest survivors. **Resuscitation**. 2014;85:671-5.
107. **Sollid** SJ, Søreide E. Human factors play a vital role in the outcome of percutaneous dilatational tracheostomy. **Crit Care**. 2014;18:409.
108. **Aase** I, Hansen BS, Aase K. Norwegian nursing and medical students' perception of interprofessional teamwork: a qualitative study. **BMC Med Educ**. 2014;14:170.
109. Dankiewicz J, Schmidbauer S, Nielsen N, Kern KB, Mooney MR, Stammet P, Riker RR, Rubertsson S, Seder D, Smid O, Sunde K, **Søreide** E, Unger BT, Friberg H. Safety, feasibility, and outcomes of induced hypothermia therapy following in-hospital cardiac arrest-evaluation of a large prospective registry. **Crit Care Med**. 2014;42:2537-45.
110. **Birkenes** TS, Myklebust H, Neset A, et al. Quality of CPR performed by trained bystanders with optimized pre-arrival instructions. **Resuscitation** 2014;85:124-30.
111. Rasmussen MB, Tolsgaard MG, Dieckmann P, Issenberg SB, Ostergaard D, **Søreide** E, Rosenberg J, Ringsted CV. Factors relating to the perceived management of emergency situations: a survey of former Advanced Life Support course participants' clinical experiences. **Resuscitation**. 2014;85:1726-31.
112. **Søreide** E, Busch M. Do we really know who benefits from targeted temperature management? **Resuscitation**. 2014;85:1621-2.

113. Lindner TW, Deakin CD, Aarsetøy H, Rubertsson S, Heltne JK, Søreide E. A pilotstudy of angiotensin converting enzyme (ACE) genotype and return of spontaneous circulation following out-of-hospital cardiac arrest. **Open Heart**. 2014;1:e000138.
114. Søreide E. Implementation science and targeted temperature management: the good news and the bad. **Crit Care Med**. 2015;43:1135-6.
115. Husebø SE, O'Reagan S, Nestel D. Reflective practice and its role in simulation. **Clinical simulation in nursing** 2015; 11: 368-375.
116. Olsen ØE, Husebø SE, Qvindesland SA & Lorentzen H. Redefining clinical leadership for team-course development. **Journal of Hospital Administration** 2015; 4: 52-60.
117. Egenberg S, Øian P, Bru LE, Sautter M, Kristoffersen G, Eggebø TM. Can inter-professional simulation training influence the frequency of blood transfusions after birth? **Acta Obstet Gynecol Scand**. 2015;94:316-23.
118. Karlsson V, Dankiewicz J, Nielsen N, Kern KB, Mooney MR, Riker RR, Rubertsson S, Seder DB, Stammet P, Sunde K, Søreide E, Unger BT, Friberg H. Association of gender to outcome after out-of-hospital cardiac arrest - a report from the International Cardiac Arrest Registry. **Crit Care**. 2015;19:182.
119. Hyldmo PK, Vist GE, Feyling AC, Rognås L, Magnusson V, Sandberg M, Søreide E. Is the supine position associated with loss of airway patency in unconscious trauma patients? A systematic review and meta-analysis. **Scand J Trauma Resusc Emerg Med**. 2015;23:50.
120. Hyldmo PK, Vist GE, Feyling AC, Rognås L, Magnusson V, Sandberg M, Søreide E. Does turning trauma patients with an unstable spinal injury from the supine to a lateral position increase the risk of neurological deterioration? - A systematic review. **Scand J Trauma Resusc Emerg Med**. 2015;23:65.
121. Wyllie J, Perlman J, Kattwinkel J et al. Part 7: Neonatal Resuscitation: 2015 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations. **Resuscitation** 2015;95:e169-201.
122. Smart JR, Kranz K, Carmona F, Lindner TW, Newton A. Does real-time objective feedback and competition improve performance and quality in manikin CPR training--a prospective observational study from several European EMS. **Scand J Trauma Resusc Emerg Med**. 2015;23:79.
123. Birkenes TS, Myklebust H, Hardeland C, et al. How to train for telephone-CPR. **Trends in Anaesthesia and Critical Care** 2015;
124. Perlman J, Wyllie J, Kattwinkel J et al. Part 7: Neonatal Resuscitation: 2015 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations. **Circulation** 2015;132:S204-S241.
125. Perlman J, Wyllie J, Kattwinkel J et al. Part 7: Neonatal Resuscitation: 2015 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations (Reprint). **Pediatrics** 2015, Volume 136/ISSUE Supplement 2.
126. Thallinger M, Ersdal H, Eilevstjønn J, Ombay C, Størdal K. Manikin ventilation comparing new upright neonatal resuscitator to standard equipment. **Arch Dis Child Fetal Neonatal** 2015;0:F1-F5.
127. E Nelissen, H Ersdal, E Mduma, B Evjen-Olsen, J Broerse, J van Roosmalen, J Stekelenburg. Helping Mothers Survive Bleeding After Birth: retention of knowledge, skills, and confidence nine months after training. **BMC Pregnancy Childbirth** 2015; 15:190-197.
128. Mduma E, Ersdal H, Svensen E, Kidanto H, Auestad B, Perlman J. Frequent brief on-site simulation training and reduction in 24-hour neonatal mortality – an educational intervention study. **Resuscitation** 2015: 93:1-7
129. Truhlář A, Deakin CD, Soar J, Khalifa GE, Alfonso A, Bierens JJ, Brattebø G, Brugger H, Dunning J, Hunyadi-Antičević S, Koster RW, Lockey DJ, Lott C, Paal P, Perkins GD, Sandroni C, Thies KC, Zideman DA, Nolan JP; **Cardiac arrest in special circumstances section Collaborators**. European Resuscitation Council Guidelines for Resuscitation 2015: Section 4. Cardiac arrest in special circumstances. **Resuscitation**. 2015;95:148-201
130. Søreide E, Larsen AI. Post resuscitation care - some words of caution and a call for action. **Scand J Trauma Resusc Emerg Med**. 2015;23:89.
131. Perlman J, Velaphi S, Ersdal H, Gadhia M. Antenatal corticosteroids for preterm births in resource limited settings. **Lancet** 2015;385:1944
132. Kidanto H, Msemo G, Mmbando D, Rusibamayila N, Ersdal H, Perlman J. Predisposing Factors Associated with Stillbirths in Tanzania- Opportunities for Prevention. **Int J Gynaecol Obstet** 2015; 130: 70-73.
133. Ersdal H, Linde J, Auestad B, Mduma E, Lyanga S, Svensen E, Perlman J. Cord Clamping in Relation to Breathing or Ventilation among Depressed Infants and 24-hour Outcome. **BJOG** 2015 (In press)
134. Perlman J, Msemo G, Ersdal H, Ringia P. Designing and implementing the Helping Babies Breathe program in Tanzania - A Country Wide Initiative. **Pediatric Intensive Care**, Global Health Issue 2015. (In press)
135. Vu H, Eftestøl T, Engan K, Eilevstjønn J, Yarrat LB, Linde J, Ersdal H. Exploring the relationship between characteristics of ventilation performance and response of newborns during resuscitation, ser. **Communications in Computer and Information Science**, Springer-Verlag. (In press)
136. Tjøflåt I, Karlens B, Hansen BS. Working with local nurses in order to promote hospital-nursing care during humanitarian assignments overseas: Experiences from the perspectives of nurses. **J Clin Nurs** 2015. (In press)
137. Bjørshol C, Sollid S, Flaatten H, Hetland I, Mathiesen WT, Søreide E. Great variation between ICU physicians in the approach to making end-of-life decisions. **Acta Anesthesiol Scand** 2015 (In press)
138. Aase I, Hansen BS, Reeves S & Aase K. Interprofessional training for nursing and medical students in Norway: Exploring different professional perspectives. **J Interprof Care** 2015 (In press).
139. Aase I, Bjørshol C, Dieckmann P, Aase K. & Hansen BS. Interprofessional communication in a simulation-based team training session in healthcare: A student perspective. **Journal of Nursing Education and Practice** 2015 (In Press).
140. Sollid SJM, Dieckman P, Aase K, Søreide E, Ringsted C, Østergaard D. Collaborating Group. Five topics healthcare simulation can address to improve patient safety - results from a consensus process. **J Patient Safety** 2015 (In press).

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