7th EfCCNa CONGRESS 2015

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15-18 February 2017 | Belfast | Northern Ireland

BOOK OF ABSTRACTS

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PLENARY PRESENTATIONS (PLE)

PLE-1 KEYNOTE LECTURE

WHAT'S HAPPENING IN THE WORLD OF CRITICAL CARE NURSING?

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President, World Federation of Critical Care Nurses
Honorary Fellow, European federation of Critical Care Nursing associations
President, Australian College of Critical Care Nurses (Queensland)

This presentation will focus on what is happening in the world, from the perspective of Paul’s role as President of the World Federation of Critical Care Nurses (WFCCN). The history of the WFCCN will be described briefly, including its origins and association with the European federation of Critical Care Nursing associations (EfCCNa) before presenting an overview of the current role and objectives of the Federation, and its current activities. What’s happening in critical care nursing will then be explored via a contemporary stroll through the online world.

PLE-2 KEYNOTE LECTURE

LONG TERM PSYCHOLOGICAL AND COGNITIVE RECOVERY AFTER CRITICAL ILLNESS

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Aims: To summarise the incidence, type and severity of psychological and cognitive dysfunction following critical illness and to examine the evidence underpinning interventions to improve recovery within these domains.

Introduction / Outline: Psychological dysfunction, incorporating either anxiety, depression or post-traumatic stress disorder in isolation or combination, is experienced by 30 – 40% of critical illness survivors. Cognitive dysfunction may also be experienced by many patients after critical illness, although there is less consensus on the extent of this problem, with rates of reported compromise varying from 10% to 70%; this variation may be dependent on the time after ICU discharge and the method of assessment used. Known risk factors for dysfunction include demographic and socioeconomic factors such as older age, chronic illness, past psychological history, lower education and less social support; and clinical factors such as hypoxia, hypotension, anaemia, sleep deprivation, early deep sedation, agitation and mood in ICU.

Interventions to improve psychological and cognitive recovery after ICU have focused on three goals including to: (1) adapt ICU to limit the detrimental effects; (ii) introduce programs of care within ICU to improve long term recovery; and (iii) provide interventions for patients after they leave ICU. Where resources are limited, patients at greatest risk of compromise and/or greatest potential for improvement should be targeted.

Relevance / Conclusions: There is widespread agreement that psychological and cognitive dysfunction is a significant issue for patients recovering from critical illness. Of less agreement are the strategies that are effective in reducing this dysfunction, with limited and inconsistent evidence regarding the effectiveness of interventions. Early and multidimensional improvement strategies are likely to provide optimal benefit to patients.
ANTIBIOTIC THERAPY IN THE ICU: WHAT NURSES SHOULD KNOW

Stijn Blot, full professor, Dept. of Internal Medicine, Ghent University, stijn.blot@ugent.be

Critically ill patients are at high risk for developing life-threatening infection such as bloodstream infection or pneumonia. These infections might lead to sepsis and multiple organ failure. Adequate antimicrobial therapy is essential to optimize the chances of survival. Three key issues in this regard are (i) a first antimicrobial dose administered as soon as possible after onset of the septic episode, (ii) an empiric antimicrobial spectrum covering the causative pathogens, and (iii) adequate dosing. However, efficient dosing is problematic because pathophysiological changes associated with critical illness affect the pharmacokinetics of mainly hydrophilic antimicrobials. Concentrations of hydrophilic antimicrobials may be too high because of decreased renal clearance due to acute kidney injury. On the other hand, antimicrobial concentrations may be decreased because of increased volume of distribution and augmented renal clearance triggered by systemic inflammatory response syndrome, capillary leak, alterations in protein binding and administration of intravenous fluids and inotropes leading to a hyper-hemodynamic status. Multiple conditions that may influence pharmacokinetics can be present simultaneously thereby excessively complicating the prediction of adequate concentrations. Generally, conditions leading to underdosing are predominant. Yet, since prediction of serum concentrations remains difficult, therapeutic drug monitoring for individual fine-tuning of antimicrobial therapy seems the way forward. The alterations in pharmacokinetics also have consequences for the administration of antimicrobials and as such for nursing practice. Nursing points of attention include (i) checking the necessity of prompt administration of a new antibiotic agent in case of a switch in therapy, (ii) control of the duration of the infusion of antimicrobial agents, (iii) respecting the dosing schedule, and (iv) the simultaneous administration of the loading dose and the continuous infusion when time-dependent antimicrobials are administered by continuous infusion.

ORION INDUSTRIAL PARTNER PRESENTATION

EVIDENCE BASED CRITICAL CARE FOR PAIN AGITATION AND DELIRIUM (PAD)

Daniel Conway¹, Natalie Mason, Donna Cummings
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Aims: The critical care community has made great improvements in understating and treating Pain, Agitation and Delirium (PAD) amongst our patients. This knowledge has led to the development of PAD Guidelines in the USA and Europe. The purpose of this presentation is to review the evidence-based approach to implementing these guidelines.

Outline: Pain and discomfort should be routinely monitored with validated self-assessment tools eg Visual Analogue Scale or observational assessments eg Behavioural Pain Score. Pain management should incorporate non-pharmacological methods and multi-modal analgesic techniques. Sedation and agitation are monitored using scales such as RASS. Deep sedation is associated with adverse outcomes and oversedation, defined as a measured sedation score deeper than the prescribed or target score for a stable patient, is not desirable. Using dexmedetomidine has been shown to facilitate light sedation. Delirium is a common challenge in ICU affecting 50% patients and associated with worse mortality, length of stay and long-term quality of life. The guidelines recommend monitoring delirium with validated tools eg CAM-ICU or ICDSC at least twice daily. Non-pharmacological techniques such as re-assurance, orientation, positioning, personal effects and discontinuation of deliriogenic drugs may prevent or manage hypoactive delirium. For agitation or hyperactive delirium, the recent DahLIA Study suggests a role for dexmedetomidine infusions to reduce the time patients are agitated. 40% and 80% of critical illness survivors experience some degree of cognitive dysfunction with executive dysfunction, attention and working memory most often affected. The duration of delirium is strongly associated with post-ICU cognitive problems.
Wakefulness and early mobilization helps to reduce the duration of delirium and accelerate recovery on ICU. The guidelines support strategies to enhance natural sleep-wake cycles for ICU patients.

**Recommendations:** Non-pharmacological interventions aimed at minimizing pain, agitation and delirium should be deployed at all times in critical care practice. Individualised pharmacological treatments may treat agitation and allow the critically ill patient to be awake, alert and therefore able to actively participate in their treatment and recovery.

**Notes:**
NURSING ACTIVITIES SCORE (NAS) AND THE STATE OF ART: PAST, PRESENT AND FUTURE

Chairs: Clémence Dallaire Professor, Faculty of Nursing, Université Laval, Quebec City, Quebec, Canada clemence.dallaire@fsi.ulaval.ca and Siv K. Stafseth, CCN MNSc and PhD student, Department of Research & Development, Division of Emergencies and Critical Care Oslo University Hospital, University of Oslo, Norway sistaf@ous-hf.no

Nurse staffing is of major concern in and for society, and stands for a huge amount of the costs and ICU-resources. Nursing care and competence has an impact on patient outcome in our ICUs. The instrument NAS is based on 23 scored items with sub-items, and the score sum ranges between 0 and 177%. According to Miranda et al. (2003), a NAS of 100% is the ideal score that a nurse can achieve per shift in a 24-h period. In 2011 during the 5th EfCCNa in Denmark, a research group was established by Prof. Katia Padilha. A group of CCNs from 7 countries launched the INASNet for research in 2016. The planning has started of an international study and the aim is to investigate the adequacy of nursing staffing, quality indicators and nursing sensitive’s adverse outcomes. The audience will at first be presented; a guide into the research on the tool NAS with a summary from a multicentre study, including a new guideline for application. Further on the Canadian team will present the results from a review on NAS in the caring process (structure, process and outcome). After that session we will get results on what is going on in present time; in a health economic perspective. Whereas the NAS has a potential in assessment of nurse staffing costs in Norway and Brazil; the teams will explore cost analysis. The next team, from Italy, will discuss results from face and content validity study; rethinking the instrument in light of intensive care nursing advancements. In the final session representing the future; a preliminary protocol for new research with the aims and research questions will be discussed. The researches and audience has the opportunity to argue for and come with suggestion in the project planning of an important international study of NAS.

SYM1-01

NURSING WORKLOAD IN THE INTENSIVE CARE UNITS: AN INTERNATIONAL MULTICENTRE STUDY USING THE NURSING ACTIVITIES SCORE (NAS)

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Introduction: Nursing workload worldwide is a crucial point for the ICU managers due to its consequences on nursing wellbeing, nursing staff costs and quality of care.

Aim: To compare the nursing workload in the ICU from different countries using the Nursing Activities Score (NAS); to identify the factors associated to the nursing workload in the ICU.

Setting & participants: 19 ICUs of seven countries (Norway, The Netherlands, Spain, Poland, Egypt, Greece and Brazil) with a total of 758 adult critically ill patients in the ICU

Methods: Cross-sectional observational study in November, 2012. The Chi-Square test, ANOVA and multiple linear regressions were used in the analyses.

Results: Patients from Egypt were younger (40.2 years, p <0.000) and presented a higher mortality in the ICU (33.3%, p<0.000) while in Poland patients were more severe (SAPSII=65.29 points, p<0.000) comparatively with patients from other countries. The surgical treatment was predominant in all countries, except in Brazil. The total mean NAS was 72.81% ranging from 44.46% (Spain) to 101.81% (Norway). The mean NAS score from Poland, Greece and Egypt was 83.00%, 64.59% and 57.11%, respectively. The mean NAS score was similar in Brazil (53.98%) and the Netherlands (50.96%). Norway (101.7%) had the highest nursing workload but lowest mortality (2.4%). The factors associated to the NAS were ICU country, Type of treatment, LOS, and SAPS II.

Conclusion: This study indicated that ICU managers from different countries should use NAS to adequate nursing staff considering the characteristics of patients and specific demands of care.
**THE USE OF THE NURSING ACTIVITIES SCORE IN CLINICAL SETTINGS: AN INTEGRATIVE REVIEW**

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**Introduction:** Some studies have demonstrated a relationship between Nursing Activities Score (NAS) and outcomes such as mortality and adverse events; however, this association is not constant throughout all studies that can result in a lack of inclusion or adjustment for other variables of the process of care. The Donabedian’s model of quality of healthcare can be helpful to contextualize the use of NAS and gain further insight into the interpretation of its association with patient outcomes.

**Aim:** The aim of this integrative review was to analyse how studies have approached the results obtained from the application of the Nursing Activities Score (NAS) based on Donabedian’s model of healthcare organization and delivery.

**Method:** CINAHL and PubMed databases were searched for papers published between 2003 and March 2015.

**Results:** 36 articles that met the inclusion criteria were reviewed and double-coded by three independent coders and analysed based on the three elements of Donabedian’s health care quality framework: structure, process and outcome. The most frequently addressed, but not always tested, variables were those that fell into the structure category.

**Conclusion:** Variables that fell into the process category were used less frequently. Beside NAS, the most frequently used variables in the outcome category were mortality and length of stay. However, no study used a quality framework for healthcare or NAS to evaluate costs, and it is recommended that further research should explore this approach.

**ASSOCIATION OF NURSING ACTIVITIES SCORE AND NURSE STAFFING COSTS IN NORWAY**

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**Setting & participants:** Four ICU’s in university and regional public hospitals in Norway. Data collection was performed from 6390 adult patients, and 247 full-time equivalents (FTE) registered nurses or critical care nurses, and 15 (FTE) non nurse-staffing.

**Methods:** An exploratory observational study of nurse staffing costs in Norwegian ICUs in one-year period in 2012. Descriptive statistics with Pearson’s correlation showed associations.

**Results:** Mean daily NAS for all patients was 108.9% and the mean nurse staffing cost per % NAS was Euro 21.8 (range, 20.9–23.1). A strong positive correlation was found on merged data between total nurse staffing costs and NAS r=.86 (p< 0.05-level). No correlation with NAS was found when we separately investigated each ICU for monthly costs.

**Conclusions:** This study demonstrated that administrators can use NAS to monitor ICU nurse staffing costs assessed at the patient level.

**ASSESSMENT OF COSTS OF NURSING CARE IN INTENSIVE CARE UNITS**

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**Introduction:** The costs of nursing care can be analyzed applying the fixed cost strategy that remains virtually constant, regardless of the patients' number in the unit. The application of the Nursing Activities Score (NAS) identifies the hours of nursing care required by the patients and allows the cost analysis as a strategy to manage nursing care in Intensive Care Units (ICUs).

**Aim:** To estimate the cost of nursing care required by patients in NAS, and to compare the cost with actually provided numbers of nursing professionals in ICUs.

**Setting & Participants:** Study conducted in five ICU of a Brazilian university public hospital (Traumatology, Neurology, Burned, Medical Clinic, Surgical), from September to December, 2012 and included patients aged 18 years or older.

**Methods:** Descriptive observational study. The NAS was applied to calculate the required hours of nursing care. The available nursing hours were calculated as suggested by Miranda et al (2003). Information about the salaries was provided by the institution. The costs of nursing care were calculated based on an hourly cost of nursing professionals.

**Results:** The study found 572 patients and 234 professionals of nursing. Traumatology ICU presented the higher NAS average (73.54 %). The difference between provided and required hours of nursing care was negative in the Neurology and Traumatology ICU. The difference in costs between these units was also negative (–US$ 4730.23 and –US$ 950.59). To meet patients’ requirements according to NAS hours, it would be a need of an increase of nurses corresponding to 0.71% and 8.45% of the costs in the Traumatology and Neurology ICU, respectively.

**Conclusion:** The negative cost difference in the Neurology and Traumatology ICU indicated that patients demanded more than available nursing care. The NAS is an important tool for monitoring the cost of nursing care.

**SYM1-05**

**RETHINKING INSTRUMENTS IN LIGHT OF INTENSIVE CARE NURSING ADVANCEMENTS: FINDINGS FROM ITALIAN EXERCISE ON NURSING ACTIVITIES SCORE FACE AND CONTENT RE-VALIDITY STUDY**

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**Introduction:** The Nursing Activities Score (NAS) has been widely in use since its first validation in 2003 but no face and content validity re-evaluation have been documented. Recently, a Norwegian group highlighted that laws and rules in different countries may explain differences in the scores.

**Aim:** To re-evaluate the face and content validity of the NAS and their weight in describing average nursing time consumption.

**Method:** A research project was undertaken from 2012 to 2015, critically evaluating and validating NAS in current context of Italian ICU nursing care. The 23 items were translated forward and backward into the Italian language; then, a panel of 10 experts in critical care evaluated the face validity. The content validity was evaluated through focus groups involving 9 expert nurses in critical care and one research nurse.

**Results:** The NAS instrument and its weights have been considered as not fully adequate to measure current ICU’s nursing activities and workloads. From the content validity process, lack of adequacy has emerged with respect to: 1) the concept of nursing care underpinning the tool, 2) the interventions included, 3) its capability to predict the nursing workloads, 4) the advancements achieved in ICU nurses’ roles and competences, and 5) the contextual factors that may influence consumption of nursing time.

**Conclusions:** The tool NAS is not fully adequate to assess ICU nursing care. In view of the advancements achieved in critical care it is a necessity to develop the tool in both its structure and in a conceptual way. This is essential and required in helping clinicians and managers to measure and compare the nursing care.

**SYM1-06**

**ADEQUACY OF NURSING STAFF AND ADVERSE OUTCOMES IN AN INTERNATIONAL MULTICENTER RESEARCH PROJECT: CONTRIBUTION OF NURSING ACTIVITIES SCORE (NAS)**

Katia Padilha², Regina Márcia Cardoso de Sousa², Siv Stafseth³, Diana Solms³, Maria Cecilia Gallani³, Ricardo Luis Barbosa³, Ricardo Luis Barbosa³
Introduction: Many factors interact to cause patient incidents in the ICU. Researches demonstrate that nursing human resources and nursing workload are important contributors to patient safety.

Aim: To verify the adequacy of the nursing staff based on NAS and to analyze the association between the adequacy of nursing staff and adverse events (AEs) in ICUs of different countries.

Settings & Participants: ICUs from ten (or more) countries (Norway, The Netherlands, Spain, Poland, Egypt, Greece, Canada, Italy, Portugal and Brazil), with a total of adult patients admitted to the ICU from May to June 2017.

Method: Cross sectional observational study. The sample will be consisted of all patients admitted in the ICUs. The criteria for ICU inclusion will be: general or specialized, current NAS application, 10 beds or more. Patients with ≥18 years, any type of treatment and any length of stay (LOS) in the ICU will be included. The nursing sensitive’s adverse events will be infection of bloodstream, unplanned extubation and catheter removal, fall and suggestion from audiences. Data collection will include: patients demographic and clinical variables, daily intervention and nursing workload (item by item and total NAS); amount of patients and staff nurse (RN, CCN, technician and aid assistants) per day and per shift. The adverse events will be collected from the ICU incident notification report. The daily NAS collection will be based on the updated guideline from 2016. The nursing workforce and patients’ demands will be obtained from the number of nurses available and patient NAS score in 24 hours. The correlation between the adequacy of nursing staff and adverse events will be analyzed using the differences in hours available and required by patients and incidence of each AE.

Expected results: This study can contribute to improve the adequacy of nursing staff and patient safety in the ICU.

SYMPOSIUM 2   ESPNIC – PSYCHOLOGICAL CARE OF THE CHILD AND FAMILY/SIBLINGS IN THE ICU

Chair: Dr Lyvonne Tume RN PhD, Alder Hey Children’s Hospital, Liverpool, UK and University of Central Lancashire

This session aims to provide an overview of two key issues affecting the care of a child within an adult ICU setting. It brings together experts in the field, both researchers and clinicians to achieve this aim and provide the audience with a current review of the evidence base along with practical strategies and guidance. The first talk will provide an overview of the most important issues to consider when managing the child in an adult ICU setting. The second talk will provide participants with guidance and evidence relating to children who visit their relatives (sibling, or parents) in the ICU.

SYM2-01

THE CHILD IN THE ADULT ICU SETTING: IS THERE SPECIAL ATTENTION NEEDED?

Jos M. Latour

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Introduction: Children have specific cognitive and psychosocial developments and should be considered by ICU professionals. The care and support of children in ICU settings require special attention when the child is admitted to an adult ICU or visiting a relative.

Aim: This session will present and discuss the evidence of caring for a child admitted to, or visiting, an adult ICU and provide recommendations to ensure a child’s safe passage thought the ICU.
**SYM2-02**

**CHILDREN VISITING THEIR RELATIVES IN THE ADULT ICU: HOW TO MANAGE THIS**

Dr Gillian Colville, Consultant Clinical Psychologist, St, Georges Hospital, London UK, gcolvill@sgul.ac.uk

**Purpose and aim:** The aim of this presentation is 1) to focus on age-related experiences and reactions of children being relatives of critical ill patients (e.g. parents, grandparents, siblings) and 2) to highlight strategies that may improve critical care nursing practice regarding visiting, communication, information and involvement of these children. Introduction When children are relatives of close family members admitted to an ICU, the situation and the environment might be very stressful and scaring, and it can be difficult for both parents and staff to take proper care of these children. Lack of care, involvement and information from both parents and staff increase the risk of Post-Traumatic Stress Disorder for the children. Furthermore, the literature shows that some nurses in adult ICUs restrict children’s visits based on the intuition that children will be harmed by what they see. International studies have uncovered the consequences of being allowed or not being allowed to visit e.g. a parent or a sibling at the ICU. The experiences and the reactions of the children in different ages - when visiting their relatives - will be highlighted. Furthermore, ethical dilemmas can occur when critical care staff and parents don’t share attitude when it comes to children visiting patients in ICU. This will be discussed.

**Recommendations:** In order to make the children secure and confident when visiting a close relative in ICU, proposals to improve efforts from staff and parents will be presented. Evidence shows that information, communication and involvement are keywords, and that most children are more robust than expected, even when their loved ones die.

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**SYM3-01**

**SIRS & SEPSIS: DIFFERENCES IN THE INFLAMMATORY RESPONSE**

Julie Benbenishty

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**Aim:** The effect of sex/gender in critical illness outcomes is controversial. We aimed to systematically review evidence on the influence of sex on outcomes of adult critically ill patients with sepsis and/ or multiple organ dysfunction, as reported in published studies specifically including investigation of the effect of sex among their aims.
**Introduction:** The incidence of sepsis is lower among women in the US general population for all infection sources except the genitourinary tract. The greater immune system activity in women than in men is consistent with better survival in women with severe sepsis. Sex hormones or sex-related gene polymorphisms may protect women against sepsis and death from sepsis (Adrie, 2007 Chest). Estrogens and androgens are involved in the pathogenesis of disease; both exogenous and endogenous estrogens are strong stimulators of cytokine production and disease activity. This presentation will provide insight into understanding the gender differences in SIRS and SEPSIS, and how to administer different treatment regimes based on gender. Although results of data syntheses appear to point towards a small disadvantage for survival among women, our results suggest that data on the impact of sex/gender on ICU outcomes remain equivocal. Implications for future research include approaches to adjustment for confounders, expanded outcome measures, prospective designs and elucidation of the underlying pathophysiological framework.

**Recommendations:** The relevance of this presentation to European practice is that nurses will be able to assess, identify and treat patients suffering from inflammation with focused gender care.

**SYM3-02**

**THE CARDIOVASCULAR SYSTEM OF MEN AND WOMEN**

Mali Bartal

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**Aim:** This paper will discuss a range of comparisons from complaint free or pre-cardiac disposition risk factor period until post and chronic heart failure stage.

**Methods:** Scoping review of past 5 years using key search words: gender, cardiac/heart, symptom expression, risk factors, and complications. Evidence-based guidelines for the prevention of cardiovascular disease in adult women will be presented.

**Results:** There is an abundance of published work describing significant differences in cardiac disease comparing males and females. The range of differences span expression of symptoms, timing of first complaint, the reaction of health care teams to women cardiac patients and differences in post cardiac episode rehabilitation to name just a few. Men have a higher incidence of heart failure, but the overall prevalence rate is similar in both sexes, since women survive longer after the onset of heart failure. Women tend to be older when diagnosed with heart failure and have more diastolic dysfunction than men. Women seem to experience a lower overall quality of life than men. The known gender differences in patients with heart failure need to be highlighted in guidelines as well as implemented in standard care. Women were more likely (64%) to be depressed than men (44%). Depressed female patients scored significantly worse than non-depressed patients on all components of quality of life. However, they did not differ in ejection fraction or treatment, except that depressed patients were significantly less likely to be receiving beta-blockers. In advanced age, the increase in the rate of hypertension is steeper in women than in men, leading to a prevalence of hypertension of 69% in men and 72% in women at age 65 to 75 years.

**Recommendations:** Increased knowledge of gender-specific risks for cardiac disease has led to national campaigns to educate women. Future gender-related clinical and research activities should focus on the identification of sex- and gender-specific criteria for risk management in female cardiac patients.

**SYM3-03**

**THE RESPONSE TO STRESS: DOES SEX PLAY A PART?**

Freda Dekeyser Ganz

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**Aim:** The purpose of this presentation is to describe several physiologic immune mechanisms that have been proposed to explain the differences between men and women related to their responses to stress.
**Introduction:** Immune responses that have been found to differ between the sexes include differences in the neuroendocrine response to stress, cytokines, and sex hormones; and an alternative model to the stress response called, “tend and befriend”. These mechanisms have direct implications on many aspects related to the intensive care unit. Four such implications will be discussed; pain, sleep, social support and energy use and storage.

**Recommendations:** Nurses should take into account differing immune responses between men and women when dealing with stress among staff as well as patients and their families.

**SYM3-04**

GENDER DIFFERENCES IN LONG TERM ICU REHABILITATION

Yardena Drori

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**Aim:** To increase ICU nurses' awareness regarding the topic of gender differences in cardiac rehabilitation post cardiac infarction.

**Introduction:** Published studies show that women participate significantly less than men in cardiac rehabilitation programs. The factors contributing to their lack of involvement in cardiac rehabilitation programs is their older age, less robust physical baseline status, and physicians tendency to send fewer women to rehabilitation programs. Many papers found that women find exercise tiring and painful, dislike public or mixed-gender exercise, and perceive unmet emotional needs in cardiac rehabilitation. The growing acknowledgement of gender-specific cardiovascular health needs highlights the need for effective risk reduction interventions for women. Investigators have called for strategies addressing underserved rehabilitation populations, such as women, who are least likely to avail themselves of these services. Gender-specific programs, tailored to individual readiness to change may be more effective than traditional programs in meeting women's unique needs. Future studies need to address many research questions. First, to what extent is attendance in women influenced by a motivationally enhanced, gender-tailored rehabilitation programs compared to that of women attending traditional programs? Second, what are the useful baseline sociodemographic and clinical predictors of attendance of the exercise and education components of cardiac rehabilitation?

**Recommendations:** Nurses need to initiate and emphasize the importance of cardiac rehabilitation participation. Gender specific instructions to female and male patients based on evidence are presented.

**SYM3-05**

RELATIONSHIP BETWEEN GYNECOLOGY AND CARDIOLOGY: UPDATES ON HORMONE REPLACEMENT THERAPY AND CARDIAC DISEASE IN POST-MENOPAUSAL WOMEN

Ofra Ranaan

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**Aim:** The following information based on the latest available evidence can be used to provide guidance on hormone replacement therapy and its alternatives.

**Introduction:** Premenopausal women have a lower risk and incidence of hypertension and cardiovascular disease (CVD) compared to age-matched men and this sex advantage for women gradually disappears after menopause, suggesting that sexual hormones play a cardio protective role in women. However, randomized prospective primary or secondary prevention trials failed to confirm that hormone replacement therapy (HRT) affords cardio protection. This review highlights the factors that may contribute to this divergent outcome and could reveal why young or premenopausal women are protected from CVD and yet postmenopausal women do not benefit from HRT.
Observational studies also show that postmenopausal women who receive hormone replacement therapy (HRT) have a lower rate of CVD and cardiac death than those not receiving HRT. However, two randomized prospective primary or secondary prevention trials, the Women’s Health Initiative (WHI) and the Heart and Estrogen/Progestin Replacement Study (HERS I and II), showed that HRT may actually increase the risk and events of CVD in postmenopausal women. The reasons for this paradoxical characterization of HRT as both beneficial and detrimental remain unclear. Overall, the use of HRT has become one of the most controversial topics related to women’s health, making it all the more urgent to clarify whether estrogens (and/or HRT) prevent or promote CVD, as well as the mechanism(s) involved.

**Recommendations:** HRT has become one of the most controversial topics related to women’s health. Future studies are necessary if we are to understand the divergent published findings regarding HRT and develop new therapeutic strategies to improve the quality of life for women.

**Notes:**
WORKSHOPS

WORKSHOP 1, 2, 6  
SCREAM: STANDARDISED CRITICAL CARE RESUSCITATION AND EMERGENCY AIRWAY MANAGEMENT

Chair: Majella Dillon, Clinical Sister, Regional Intensive Care Unit (RICU), Belfast Hospital Trust, Belfast Northern Ireland. Email: Majella.dillon@belfasttrust.hscni.net

Team: Dr Gareth Morrison, Consultant Anaesthestist, Antrim Area Hospital ICU; Bill Hickland and Matt Jasztal, Charge Nurses RICU; Karen Conn, Clinical Sister, RICU; Robert McMonagle, Deputy Charge Nurse, RICU; Catherine McFall, Deputy Sister, RICU; Blinnia Hughes and Christina McMahon, Senior Staff Nurses, RICU.

Aims and objectives: The aim of the three workshops is to present emergency simulation stations that will demonstrate difficult clinical emergencies and engage delegates to participate and learn new skills.

Workshop content: Each scenario will last about 25 minutes during which time the team will demonstrate an emergency and what happens. Sr Dillon will narrate the story and the actions taken by the clinical team will be seen on the screen. After the simulation demonstration there will be debrief that will include audience participation and interaction. The scenarios include:

(a) Can't Intubate Can't Oxygenate (Thursday 16 and Friday 17 February)
   In this workshop, participants will see the practical application of the 'Difficult Airway Society, 2015 Guidelines'. Front of neck access via a surgical cricothroidotomy will be demonstrated. There will be a strong focus on non-technical skills.

(b) A blocked tracheostomy tube (Thursday 16 and Friday 17 February)
   In this workshop, participants will engage with the practical use of the 'National Tracheostomy Safety Project (NTSP) guidelines' for the management of a blocked tracheostomy tube. Key safety points and clinical skills will be emphasized.

(c) The haemorrhagic blood loss protocol (Saturday 18 February)
   In this workshop, participants will learn how to manage a bleeding tracheostomy. The major transfusion protocol will be activated and there will be a focus on team resuscitation and human factors.

WORKSHOP 3  
ESPNIC - CARING FOR A CHILD IN AN ADULT ICU

CARING FOR A CHILD IN AN ADULT ICU: DIFFERENCES AND SIMILARITIES AND INTERACTIVE LECTURE AND CASE BASED WORKSHOP

Lyvonne Tume

Alder Hey Children’s Hospital, Liverpool, United Kingdom

Objectives:
- To provide adult ICU nurses with an understanding of the differences in nursing critically ill children
- To highlight physiological and developmental differences in children resulting in different approaches, drug and fluid therapies, drug dosing, resuscitation and safety issues
- To highlight the different role of the family (parents) in critically ill children

Workshop content:
Two interactive case presentations based around 2 common cases: a 12 year old head trauma child and a 2 year old child with respiratory failure.
- Introduction to caring for the child in an adult critical care setting
- Interactive Case 1: The 12 year old with severe head trauma
- Interactive case 2: The 2 year old child with respiratory failure
- Evaluation of your knowledge and the differences between adults and children
**WORKSHOP 4  MANUAL HYPERINFLATION**

Armstrong Medical in cooperation with Frederique Paulus PhD, Academic Medical Center, Amsterdam, f.paulus@amc.uva.nl

Our aim is to demonstrate and practice the factors of Manual Hyperinflation suggested to be important of efficacy (inspiratory flow, inspiratory hold and expiratory flow) and safety (applied volumes and pressures).

Manual hyperinflation (MH) is frequently applied in intubated and mechanically ventilated patients, especially those who are mechanically ventilated for a longer period of time. MH involves disconnection of the patient from the ventilator followed by repetitive inflation of the lungs via a resuscitation bag. The aim of MH is to mimic a cough by which airway secretions are mobilized towards the larger airways – in this way sputum plugging of the smaller airways may be prevented. Despite the limited evidence for its efficacy and safety, manual hyperinflation appears to be widely used as airway clearance technique and is often applied in an uncontrolled fashion, without tools to measure delivered flows, volumes and pressures. Therefore, it is imaginable that the efficacy and safety of manual hyperinflation is largely determined by the individual skills (and knowledge) of the performer. Without doubt, there is a chance of large variations in the performance of manual hyperinflation. This may especially be the case when manual hyperinflation is only used occasionally. But also in case of frequent use there may be large variations in its performance.

**WORKSHOP 5  HAEMODYNAMIC MONITORING**

Hosted by Edwards life Science
Chair: Frederique Paulus, Academic Medical Center, Amsterdam, f.paulus@amc.uva.nl

**HANDS ON HEMODYNAMIC MONITORING WORKSHOP**

Haleigh Watson, Edwards Life Science, UK

Edwards Life science offers a range of hemodynamic monitoring options to meet clinical needs and invites you to make proactive clinical decisions. In this Hemodynamic and Cardiac Monitoring workshop they allow you to practice hemodynamic stabilization of a patient in an ICU environment. The scenario that will be used is of a patient attending elective surgery utilising a fluid optimisation protocol, which then continues into the ICU, deteriorates a few days down the line and becomes septic

**INTERACTIVE PRESENTATION ON CVP**

Paul van der Heiden, Cardiocentro Ticino, Neggio, Switzerland, pwvanderheiden@gmail.com

Paul van der Heiden will present work on Central venous pressure monitoring. Central venous pressure (CVP) is the pressure recorded from the right atrium or superior vena cava, the monitoring of the CVP is a established practice in the critically ill. Central venous pressure measuring has been, and often still is, used as a surrogate for preload in the critical ill. Changes in CVP in response to infusions of intravenous fluid have been and still are used to predict volume-responsiveness. Today there is no convincing evidence that CVP monitoring improves outcomes in the critically ill patient, particularly when other variables are being assessed. Additionally, it is clear from studies examining goal directed therapy that targeting fluid therapy to normalizing the CVP in a critically ill patient is not an optimal treatment strategy. Another, less known, possibility of CVP monitoring in the critical ill is that CVP monitoring can be used as a reliable and easy tool to recognize, particularly discreet, disorders of the heart rhythm and their important hemodynamic consequences. On the basis of some clinical cases from critical care practice it will be clear how to use the CVP curve to recognize and to distinguish various heart rhythm disorders and their hemodynamic effect.
CLINICAL ERRORS IN THE ICU: WHY MISTAKES HAPPEN, AND POTENTIAL STRATEGIES TO PREVENT THEM

David Waters RN, BA (Hons), PGDip, MA Ed., Sandra Goldsworthy PhD, RN, CNCC(C), CMSN(C)

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Adverse events associated with clinical error have been observed in 9-11% of hospital admissions (Sari et al., 2007), which in turn can result in increased clinical expenditure, length of hospital stay and potential patient mortality and morbidity (Fortune et al., 2013). Furthermore, clinical errors have been noted to occur more frequently in critical care settings, due to patient complexity and acuity (Garrouste-Orgeas et al., 2012).

This master class aims to explore some of the theoretical perspectives associated with such clinical errors and why mistakes might occur within a critical care setting. In addition discussion will highlight a selection of evidence-based strategies and interventions that have been effectively utilised to mitigate the risk of clinical errors occurring within the critical care setting; these will include the use of safety check-lists, communication tools and educational approaches to support their integration, such as simulation and role-play (Goldsworthy, 2012; Sears et al., 2010). Lastly the presenters will share personal reflections on how error reduction interventions have been implemented within their own clinical experience.

HOW TO WRITE A CLINICAL TRIAL RESEARCH PROTOCOL

Bronagh Blackwood

Critical Care Researcher, Centre for Experimental Medicine, School of Medicine, Dentistry & Biomedical Sciences, Queen’s University Belfast, Northern Ireland. Email: b.blackwood@qub.ac.uk

The first master class focuses on writing a clinical trial protocol and is delivered by Dr Bronagh Blackwood, an internationally recognised critical care researcher for her expertise in mechanical ventilation and interventions to improve outcomes for intensive care patients. Dr Blackwood has been involved in a number of clinical trials in ICU (energy expenditure in trauma patients; protocolised weaning; tea tree oil in preventing MRSA; non-invasive ventilation as a weaning strategy) and is currently leading a multicenter trial in sedation and weaning in children. Using examples from previous studies, the master class outlines the requirements for a protocol along with the reasons why these are important.
PROCESS EVALUATION
Lydia Emerson

Medical Research Council Fellow. Centre for Experimental Medicine, School of Medicine, Dentistry & Biomedical Sciences, Queen’s University Belfast, Northern Ireland. Email: lemerson03@qub.ac.uk

The second master class on process evaluation is delivered by Lydia Emerson, a PhD candidate who was awarded a prestigious Medical Research Council Fellowship to further trials methodology research. Process evaluations, as a research method, are increasingly being used as an approach to explore how interventions are implemented and accepted into practice. They draw upon a variety of mixed methods to collect data during a trial to assess an intervention’s successful implementation and acceptability by staff. This information is highly beneficial for subsequent successful adoption of the intervention into other ICUs. For this reason, process evaluations are valuable in narrowing the evidence-practice gap. Much of the literature on process evaluation methods has been targeted at educational interventions and there is relatively little published on the methods for clinical trials. Ms Emerson’s work is advancing state of the art knowledge in this methodological area.

Notes:
OP01-01

VALIDATION OF THE DANISH VERSION OF THE CRITICAL-CARE PAIN OBSERVATION TOOL

Janne Bruun Frandsen, Kristian Staalegaard O’Reilly Poulsen, Eva Laerkner, Thomas Stroem

Odense University Hospital, ODENSE C, Denmark

**Background:** Assessing pain in critically ill patients is a challenge even in an Intensive Care Unit (ICU) with a no sedation protocol. The aim of this study was to validate the Danish version of the pain assessment method; Critical-Care Pain Observation Tool (CPOT) in an ICU with a no sedation protocol.

**Methods:** 70 patients were included in this study. The patients were observed during a non-nociceptive procedure (wash of an arm) and a nociceptive procedure (turning). Patients were observed before, during and 15 minutes after the two interventions (6 assessments). Two observers participated in the data collection and CPOT scores were blinded to each other. Calculations of interrater reliability, criterion validity and discriminant validity were performed to validate the Danish version of CPOT.

**Results:** The results indicated a good correlation between the two raters (all scores >0.9 and p<0.05). 48 (68.6 %) of the included patients were able to express self-reported pain. We found a significantly higher mean CPOT score at the nociceptive procedure than at rest or the non-nociceptive procedure (p<0.05). No correlation was found between CPOT scores and physiological indicators. Patients’ self-reported pain and CPOT showed a significant correlation (p<0.05). A CPOT score of ≥ 3 correlated with patients’ self-reported pain (ROC AUC 0.83).

**Conclusion:** The Danish version of CPOT can be used to assess pain in critically ill patients, also when the ICU has a no sedation protocol. CPOT scores showed a good interrater reliability and correlate well with patients’ self-reported pain.

OP01-02

SLEEP DETERMINANTS AMONG PATIENTS IN AN INTENSIVE CARE UNIT

Wioletta Medrzycka-Dabrowska¹, Aleksandra Gutysz-Wojnicka², Dorota Ozga³, Anna Malecka-Dubiela⁴

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**Introduction:** Disturbed sleep is common in critical illness, not only during early phases of treatment in an intensive care unit (ICU) but also during later stages of recovery after ICU discharge. The long-term lack of sleep among ICU patients hinders the action of defence mechanisms, leading to reduced resistance of an organism and deteriorated cognitive and emotional functions.

**Aim:** The study aimed at recognition of factors that determine the sleep patterns of patients in ICU.

**Setting and Participants.** The project involved 100 patients hospitalised in an ICU.

**Methods.** The method of a diagnostic opinion poll has been used. A questionnaire containing 28 questions has been used as a research tool. The criteria of a patient’s participation in the study were as follows: a patient hospitalized in an ICU, with full verbal-logical contact, aged above 18, and giving consent to their involvement in the study. The study was conducted upon the approval of the study protocol by the Independent Bioethics Committee for Scientific Research of the Medical University of Gdansk. Statistical analyses were performed using Statistica.

**Results:** 56% of respondents assessed the quality of their sleep in the ICU as neutral, 42% as rather good, and 2% chose the ‘good’ answer. Out of causes of disturbed sleep in the ICU, respondents indicated the following factors: the environment in the ICU, mechanical ventilation, and pharmacological therapy. Sleep disorders occurred in the ICU significantly more often statistically among patients who had suffered from sleep problems before hospitalization.
Conclusions: The noisy operation of monitors is the most frequent factor that disrupts the sleep of ICU patients. There is evidence that multi-aspect interventions that minimise factors disrupting sleep may improve its quality among patients in an ICU.

OP01-03

‘ANALGOSEDATION IN INTENSIVE CARE’ - PATIENTS’ EXPERIENCES ONE WEEK AND THREE MONTHS AFTER DISCHARGE

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Introduction: Patients experience both pain and discomfort while treated in the intensive care unit (ICU). An analgosedation protocol, recommended to favour pain management, light sedation and early mobilization, was implemented in one university hospital mixed ICU in Norway in 2014.

Aim: To explore how intensive care patients treated according to a strategy of analgosedation, experience pain and discomfort, wakefulness and mobilization, and how they handle these experiences after ICU-discharge.

Setting & participants: Adult patients treated > 24 h in ICU and mechanically ventilated (MV) were included. 18 patients were interviewed within 1-2 weeks after ICU-discharge. 10 patients were re-interviewed after 3 months.

Method: An explorative, descriptive design, using semi-structured interviews. Data was analysed using “Systematic text condensation”.

Results: The theme “Pain relieved, but still struggling” overarched the five main categories emerging from the analysis; “In discomfort, but rarely in pain”, “Struggling to get a grip on reality”, “Off-track, but heading back”, “Holding out” and “Emotionally trapped.” Analgosedation provided good pain relief, but the patients described frequent physical and psychological discomforts. Different states of wakefulness provoked challenging situations in particular related to MV-treatment, incomprehension and experiencing delusions. To handle their ICU-stay, patients wanted to participate, needed to trust in others and had to endure suffering. Mobilization could represent both physical deterioration and progress. After hospital discharge, many patients described repression of experiences, still searching for recognition of what they had gone through. Delusional memories seemed to become internalized experiences over time.

Conclusion: In contrast with the current understanding, patients’ descriptions indicated that pain was not a major concern during ICU-stay. Other expressions of discomforts were common. Despite good pain relief during analgosedation, critically ill patients still experience ICU-stay as a traumatic part of their illness trajectory. Comfort measures aiming to relieve discomforts other than pain are important future research areas.

OP01-04

THE CRITICAL CARE NURSES’ PERSPECTIVE OF PAIN AND THEIR SELF-REPORTED PRACTICES OF PAIN MANAGEMENT TOWARD NONVERBAL CLIENTS

Jie Chen

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Introduction: The effective pain management begins with the accurate and thorough assessment of the client which is based on the nurses’ knowledge and attitude of pain as well as the pain assessment practice.

Aim: The purpose of the descriptive study was to investigate the critical care nurses’ knowledge and attitude of pain, their self-reported practice of pain management toward nonverbal clients.

Setting and Participants: A convenience sample of 306 registered critical care nurses in Hubei province was surveyed.

Method: The “Knowledge and Attitudes Survey Regarding Pain” tool and a self-reported practice of pain management toward nonverbal client questionnaire were used.
Results: Two hundred and sixty-seven nurses completed and returned the questionnaire. Areas of critical care nurses’ knowledge and attitude of pain, and nonverbal pain assessment beliefs and practices with low scores were established. No significant differences in knowledge and attitude of pain, and nonverbal pain assessment beliefs and practices were found based on age, degree, or years of experience. Paired t tests showed significant differences between knowledge and attitude of pain and nonverbal pain beliefs and practices, and between nonverbal pain beliefs and practices. Pearson correlation coefficients demonstrated that pediatric nurses’ knowledge and attitude of pain were significantly correlated with similar questions related to nonverbal pain assessment beliefs and practices.

Conclusion: Further education for critical care nurses related to pain assessment and management standards in nonverbal clients, as well as utilization of process to integrate this knowledge and attitude into nurses’ belief systems and practice environment should be enhanced.

OP01-05

THE RELATIONSHIP BETWEEN PAIN AND PHYSIOLOGICAL SYMPTOMS IN ICU SURVIVORS 3 AND 12 MONTHS AFTER ICU DISCHARGE

Anne Kathrine Langerud, Tone Rustøen, Ulf Kongsgaard, Audun Subhaug

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Introduction: Today more than 80% of intensive care unit (ICU) patients survive. Pain is documented to be a problem in patients after the ICU stay, but few have studied the relationship between pain and other symptoms like PTSD, anxiety, depression, fatigue and sleep disturbance. Aim: to investigate differences in prevalence of anxiety, depression, fatigue, sleep disturbance and PTSD in ICU survivors with or without pain at 3 and 12 months after ICU discharge. Settings & participants: Patients were recruited from two general ICU’s, and 118 ICU survivors participated. All had ICU stays longer than 48 hours, and adults that could read and write Norwegian participated. Methods: Patients filled in questionnaires 3 and 12 months after ICU discharge. The following instruments were used; Brief Pain Inventory (BPI), Hospital Anxiety and Depression scale, Lee fatigue scale (LFS), General sleep disturbance scale and Post Traumatic Stress Syndrome 10. The patients were categorized into a pain or a no pain group based on BPI, and differences between the groups were tested with Mann-Whitney. The study was approved by the ethics committee. Results: Out of 118 ICU survivors, 58 (49.2%) reported pain 3 months after ICU discharge while 34 (38.2%) reported pain at 12 months. The patients in the pain group had significantly more anxiety (p<0.001), depression (p= 0.003), fatigue (p< 0.001), sleep disturbance (p <0.001) and PTSD (p < 0.001) compared to the no pain group at both 3 and 12 months. Conclusions: Even if the amount of ICU survivors reporting pain decreases from 3 to 12 months, the pain group still reports a significant larger amount of symptoms than ICU survivors without pain after 12 months. Nurses should pay more attention to the co-occurrence of symptoms and which ICU survivors who need more follow up after their ICU discharge.

OP01-06

SLEEP QUALITY OF NON-INTUBATED PATIENTS IN AN ICU

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Introduction: Sleep deprivation increases sympathetic activity and affects negatively endocrinological functions, immune system, and cognitive functions. It causes fatigue, irritability, disorientation and hallucinations. These effects may hinder patients’ recovery. Mechanical ventilation is a well demonstrated cause for poor sleep quality. What is the sleep quality of non-intubated patients is not well known.

Aim: To evaluate the quality of non-intubated patients’ sleep from patients’ perspective and with polysomnography.
Setting & participants: 114 patients’ perspectives in a 16-bed level three ICU, and polysomnography of 21 patients in a 24-bed level three ICU, in University affiliated hospitals. All patients were alert, oriented, non-intubated adults.

Methods: Patients evaluated the previous night’s sleep with Richards-Campbell Sleep Questionnaire (RCSQ), 5 VAS statements from zero (poor sleep) to 100 (best sleep). EEG based polysomnography was registered for one night. Both studies were performed with integrity according to the responsible conduct of research, received favorable ethics board statements and research permission from both hospital’s authorities. Data were analyzed and presented with descriptive statistics.

Results: Patients’ evaluations varied extensively as they fell into the whole scale 0-100, and standard deviations were high. Sleep depth was rated the worst (mean 44) and falling asleep the best (mean 64) of the RCSQ sleep domains. Polysomnographic results confirmed the variation between patients. Total sleep time ranged from zero to 10.3 hours. The relative amount of light sleep was high (34.7%) and the amounts of deep sleep (8.0%) and REM sleep (13.6%) were low. Patients’ sleep was very fractional with a median of 33 [16, 44] awakenings/patient and 3.7 [1.8, 5.9] awakenings/hr.

Non-intubated ICU patients’ sleep appears to be as light and fragmented as is the sleep of mechanically ventilated patients. However, there is large variation between the patients. Systematic evaluation of sleep and interventions to support ICU patients’ sleep are much needed.

ORAL PRESENTATIONS 2  FAMILY-CENTRED CARE

OP02-01

CRITICAL CARE NURSES AND RELATIVES OF ELDERLY PATIENTS IN INTENSIVE CARE UNIT - AMBITIANT INTERACTION

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Introduction: The objective was to explore the experiences of Critical Care Nurses (CCNs) in relation to relatives of elderly patients 80 years and older admitted to ICU.

Settings & participants: Through methods grounded in phenomenology, six CCNs were purposefully selected for their experiences with relatives of elderly patients admitted to an ICU in Norway.

Methods: Each CCN participated in semi-structured personal interviews. Using content analysis, interviews were coded and categories and themes were identified.

Results: An overall theme emerged: “CCNs ambivalent interactive struggle with the relatives of elderly patients”, which reflected the mixed feelings that CCNs recalled having towards relatives. Two themes emerged during the analysis. These were: “relatives are a resource for CCNs and the patient”; and “relatives are seen as challenge”. Six sub-themes were identified: (1) CCNs are relying on relatives, (2) relatives and their understanding of the situation, (3) relatives are committed, (4) relatives have high expectations, (5) relatives can be seen as burden and (6) relatives with cultural differences are a challenge.

Conclusions: CCN’s experiences with the relatives of elderly patients in ICU represent a significant personal, mixed struggle. The findings indicate that development of communication, education, reflection and a more structured organization of intensive care unit can improve results for CCNs and may improve the possibilities for CCNs to promote an excellent family nursing for the elderly patient and his relatives.

Relevance to clinical practice: The findings indicate that development of communication, education, reflection and a more structured organization of intensive care unit can improve results for CCNs and may improve the possibilities for CCNs to promote an excellent family nursing for the elderly patients and his relatives.
OP02-02

HEALTH PROMOTING CONVERSATION FOR FAMILIES - WITH A CRITICAL ILL FAMILY MEMBER

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4Department of Cardiothoracic Surgery and Department of Medical & Health Science, LINKÖPING, Sweden

Introduction: Families having a family member with critical illness in an intensive care unit face a demanding situation, threatening the normal functioning of the family. Family members often suffer from anxiety, depression and posttraumatic stress syndrome longer compared to the patient being critical ill. In order to gain a better understanding of family adaptation and the family as a unit, the experience of each family member needs to be acknowledged. Still, there is a knowledge gap regarding the family members’ wellbeing during and after critical illness.

Aim: To investigate outcomes of a nurse led intervention, “Health promoting conversations with families” on family functioning and wellbeing in families with a member who had been critical ill.

Setting & participants: Swedish families with an adult family member who had had critical illness were randomized to health promoting conversations or ordinary care. Family members (n=16) who have had a family member with critical illness and got health promoting conversations participated in the study.

Methods: A qualitative inductive descriptive design was used. During the interviews emotional feelings and distress was observed. Fifteen qualitative interviews with family members were performed. Inclusion criteria were patients with a minimum of 72 hours at the ICU, and at least one family member (>15 years) interested to participate in the study. The interviews were analyzed with content analyze.

Results: Family members experienced strengthen togetherness, a caring attitude and confirmation through the health promoting conversations. The caring and calming conversations were appreciated although exhausting feelings came up again. Working through the experience and being confirmed promoted wellbeing in the families’.

Conclusion: Health promoting conversations were considered healing as the family members took part of each other’s feelings, thoughts and experiences of the critical illness. This nursing intervention needs to be offered to families after critical illness, and further developed.

OP02-03

IMPACT OF A BOOKLET DONE FOR CHILDREN VISITING THEIR RELATIVES IN THE ICU ON THE SATISFACTION OF ACCOMPANYING ADULTS

Carole Haubertin, Lionel Kerhuel

University hospital of Toulouse, TOULOUSE, France


Aim: The aim is to study how adults use a booklet done for children visiting their close relatives in the ICU and to assess its impact on the satisfaction of accompanying adults.

Setting and participants: The population of the study consisted of 57 adults accompanying children.

Material and methods: Observational and prospective single center study conducted during 12 months in an adult intensive care unit.

The booklet contains explanations suited to children but also advices for adults. In the study period, patients’ families were informed of the possibility, for children, to visit their loved ones and received the booklet. Then, a questionnaire was sent to the accompanying adult after the patient’s ICU discharge.
Results: 57 booklets were distributed over the study period. The booklet was given to the adult during an interview; the child was present in 22% of cases. 32 adults received a questionnaire, 16 responded. 100% of adults have considered the booklet “suitable” or “very suitable” for children, and the appendix for adults “useful” or “very useful”. None has declared that the visit was a source of anxiety for the child. The average satisfaction score of the visit was 9.2 on a scale of 0 (not satisfied) to 10 (very satisfied).

Conclusion: The distribution of the handbook for visiting children is easily achievable by caregivers. It’s also useful and satisfying for accompanying persons. A complementary work could nevertheless be necessary to assess the interest of children for the booklet and to appraise how they experienced their visits in the ICU.

OP02-04
SUPPORTING CHILDREN AND TEENAGERS AS RELATIVES IN THE INTENSIVE CARE UNIT
Heidi Bild Granby, Helle Lindberg Brink, Karina Panduro, Eva Laerkner
Odense University Hospital, ODENSE C, Denmark

Introduction: Relatives are often perceived as a resource for patients in the Intensive Care Unit (ICU) and some of these relatives are children and teenagers. Studies show that children are at risk of developing depression, anxiety and low self-esteem when they are relatives to critically ill patients, if they do not receive the necessary support. How is it possible to support children and teenagers as relatives in the ICU?

Aims: Develop information to parents to support children and teenagers, who are relatives to a critically ill patient. Improve critical care nurses’ professional competences enabling them to support children and teenagers when they are relatives to a critically ill patient in the ICU. Optimize the physical environment so there is room for children as relatives in the ICU.

Outline: A written information leaflet was developed for parents to children and teenagers as relatives in the ICU. The information leaflet was evaluated by parents and health professionals before implementation. A clinical guideline was created based on research and clinical knowledge about children and teenagers as relatives in the ICU. The guideline had focus on communication with and activities for children at different ages. The physical environment was optimized with furniture, activities and room for children and teenagers

Recommendations: Develop information to parents to children and teenagers as relatives in the ICU to facilitate dialogue between children, health professionals and parents and to support and guide parents and children before, during and after visiting a critically ill relative in the ICU. Create and implement a clinical guideline to improve critical care nurses’ knowledge and competences in relation to children and teenagers as relatives. The guideline should be applicable in practice and include action propositions. Create a physical environment based on childrens’ needs and perspectives when they are visiting the ICU.

OP02-05
FAMILIES’ EXPERIENCES OF QUALITY OF CARE FOR ICU PATIENTS AND THEIR FAMILIES: THE EUROQ2 PROJECT
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2Medisch Centrum Leeuwarden, LEEUWARDEN, The Netherlands
3Vejle Hospital, VEJLE, Denmark

Introduction: To work with improvement of quality of care for ICU patients and their families, knowledge about families’ experiences is very important.

Aim: To examine experiences of ICU families in regard to patient care, empathy, information, decision-making and end-of-life care.

Settings & participants: Adult family members from 11 Danish and 10 Dutch ICUs.

Methods: Questionnaire survey. Family members were mailed the questionnaire three weeks after patient discharge or death. Up to three family members per patient could participate.
Results: A total of 1,077 family members participated, hereof 217 family members of patients dying in the ICU. Response rate was 72%. Generally, most family members were well satisfied with patient care, empathy, information, decision-making and end-of-life care, with all questions having between 27% - 55% assessments as “Excellent”. Except for inclusion in decision-making processes, the Danish scores were significantly higher than the Dutch scores. Areas with the highest percentage of excellent scores in regard to general ICU care were “Concern and caring toward patient” (55%), “Atmosphere of the ICU” (47%), “Presence at the bedside” (51%), “Ease of getting information” (45%) and “Honesty of information” (45%). Areas with most room for improvement were “Symptom management: agitation” (33%), “Consistency of information” (31%), “Inclusion in decision-making processes” (27%), and “Support during decision-making processes” (32%).

In regard to end-of-life care, 64% of the participants found that care at the end-of-life was in accordance with the patient’s wishes (26% responded “Do not know”), and only 4% found that the patient’s life was unnecessarily prolonged. The families assessed the overall quality of care in the last days of the patient’s life to a median of 9 (on a 0-10 scale).

Conclusions: Family members were generally well satisfied with ICU quality of care, but areas with room for improvement were identified.

OP02-06

CHILDREN AS RELATIVES OF CRITICALLY ILL PATIENTS IN ICUS

Birte Baktoft1, Charlotte Hindsgavl2

1Freelance, LYSTRUP, Denmark
2Aalborg University Hospital, AALBORG, Denmark

Purpose and aim: The aim of this presentation is 1) to focus on age-related experiences and reactions of children being relatives of critical ill patients (e.g. parents, grandparents, siblings) and 2) to highlight strategies that may improve critical care nursing practice regarding visiting, communication, information and involvement of these children.

Introduction: When children are relatives of close family members admitted to an ICU, the situation and the environment might be very stressful and scaring, and it can be difficult for both parents and staff to take proper care of these children. Lack of care, involvement and information from both parents and staff increase the risk of Post-Traumatic Stress Disorder for the children. Furthermore, the literature shows that some nurses in adult ICUs restrict children’s visits based on the intuition that children will be harmed by what they see. International studies have uncovered the consequences of being allowed or not being allowed to visit e.g. a parent or a sibling at the ICU. The experiences and the reactions of the children in different ages - when visiting their relatives - will be highlighted. Furthermore, ethical dilemmas can occur when critical care staff and parents don’t share attitude when it comes to children visiting patients in ICU. This will be discussed.

Recommendations: In order to make the children secure and confident when visiting a close relative in ICU, proposals to improve efforts from staff and parents will be presented. Evidence shows that information, communication and involvement are keywords, and that most children are more robust than expected, even when their loved ones die.

ORAL PRESENTATIONS 3 PAIN, AGITATION & DELIRIUM

OP03-01

PUTTING PAIN, AGITATION & PAIN (PAD) GUIDELINES INTO PRACTICE: HUMANE CARE IN CRITICAL CARE

Natalie Mason, Donna Cummings, Daniel Conway

Critical Care Follow Up Team Lead, Manchester Royal Infirmary, Manchester Academic Health Science Centre
Aims: There is a body of evidence from the 2013 SCCM PAD and 2015 DGAI revised DAS guidelines that reach a consensus for the promotion of management of pain, agitation and delirium (PAD) in the critical care patient (1,2). The focus of this piece of work is to discuss how application of PAD strategies can promote a humanistic approach within critical care.

Outline: Increasing evidence from the SCCM PAD guidance suggests non pharmacological management of delirium can be an effective approach. There is not enough current research to recommend the use of antipsychotics in this population of patients. Monitoring of delirium using tools such as CAM-ICU or ISDSC and titrating sedation to achieve light levels where appropriate are recommended. Managing patients under light sedation requires an understanding of the effects of different sedative agents alongside non-pharmacological strategies. In order to increase compliance of delirium assessments, nursing documentation at our hospital has been amended. This was supported by training for nursing staff that included videos of patients describing their recollection of delirium during their critical care stay. Across the Greater Manchester Critical Care Network we introduced regular teaching for nursing & medical staff which emphasizes both non-pharmacological interventions such as reassurance, orientation, provision of personal effects and spectacles / hearing aids and monitoring of delirium and sedation levels. There is a possible association between sleep deprivation and delirium in critical care patients. In a UK quality improvement project, implementation of a sleep care bundle of noise reduction strategies & sleep-promoting interventions on the ICU led to a reduction in the incidence of delirium. Noise monitoring can be introduced within the clinical environment, as well as the use of educational sessions sharing the ‘SHHH’ campaign video to promote sleep in the critically unwell. Music therapy for the critically unwell has been identified as a useful adjunct to reducing the perception of pain and agitation. In view of this, the use of live harp music has also been introduced into our practice for the benefit of patients, relatives and staff.

Recommendations: Individualised non-pharmacological strategies should be implemented to critically unwell patients to manage pain, agitation and delirium alongside the use of light sedation where possible. Staff should be mindful of the fear that patients can experience when in the critical care environment.

OP03-02

NON-PHARMACOLOGICAL MANAGEMENT OF DELIRIUM IN CRITICALLY ILL PATIENTS

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Background: Delirium is common and associated with poor outcomes in critically-ill patients in Intensive Care Unit (ICU). Multi-component non-pharmacological interventions are beneficial in the prevention and treatment of delirium in older hospitalised patients, but there is a lack of evidence on their efficacy in critically ill patients.

Objectives: To evaluate which non-pharmacological interventions are effective at reducing incidence or shortening duration of delirium in critically ill patients.

Search methods: We searched the Cochrane Library, MEDLINE, EMBASE, PsycINFO, CINAHL, Web of Science, AMED and grey literature databases, including clinicaltrials.org and the WHO portal for prospective registries of trials to February 2016.

Selection criteria: We included: (i) randomised trials and non-randomised studies that evaluated non-pharmacological interventions for reducing incidence or duration of delirium in critically ill patients; and (ii) qualitative studies that evaluated ICU staff, survivors and their families’ opinions on non-pharmacological interventions for delirium management.

Data collection and analysis: Studies identified were screened, selected and data extracted by two independent reviewers based on pre-defined eligibility criteria.

Main results: We included 32 international studies (n = 8311 participants). Seven were qualitative studies. Twenty five trials evaluated 21 effective interventions, mainly delivered in bundles with 2-14 components. Effective interventions included early mobilisation during sedation interruption and a bundle aimed at orientation, early mobilisation and cognitive stimulation.

Conclusion: There is evidence to suggest multi-component non-pharmacological interventions are effective in contrast to single components in reducing incidence or duration of delirium in critically ill patients. However, the relative effectiveness of the single components within these bundles is uncertain.
MANAGING A STUDY PROTOCOL OF NO-SEDATION IN BUSTLING ICUS, TWISTING THE STUDY TO FIT THE CULTURE?

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²University Hospital of North Norway, TROMSØ, Norway

Introduction: Critically ill, mechanically ventilated (MV) ICU patients have traditionally been sedated during the treatment. However, continuous sedation prolongs weaning from ventilators and reduces outcome for these vulnerable patients. In recent years, practices have changed towards lighter sedation. A Danish randomized clinical trial showed that a protocol of no sedation resulted in significantly shorter duration of MV, shorter length of ICU stay and shorter hospital stay. That study has now been repeated as a multicentre study; this includes the present local sub-study, which involves participation from one of two Norwegian ICUs.

Aim: To explore nurses’ experiences of following a study protocol in care for non-sedated, critically ill patients requiring mechanical ventilation.

Setting & participants: The study took place in a ten-bed general ICU at a Norwegian university hospital. Nurses from the ICU were the subject of the study.

Methods: Nine female and three male ICU nurses participated in two focus groups, 10 months after study start. They received written information and gave their consent to participate. The interviews were analysed using a constant comparative method focusing on ongoing processes.

Results: One overall theme emerged: “Twisting the study to fit the culture”. This indicated that following a stringent study protocol requires either the protocol or the culture, or both, to adapt to the actual setting with its possibilities and limitations. Three subthemes were identified: 1) From excitement to uncertainty, 2) Important preparatory work, 3) Teamwork and individual approaches.

Conclusion: Despite enthusiasm and interest in participating in bedside research studies, nurses found that they needed to be better prepared for this study. They took great responsibility for treating the patient according to the protocol, but they missed greater teamwork and involvement from doctors regarding how to follow the study protocol.

HE SURVIVED THANKS TO A NON-SEDATION PROTOCOL - NURSES’ REFLECTIONS ABOUT CARING FOR CRITICALLY ILL, NON-SEDATED AND VENTILATED ICU-PATIENTS

Ranveig Lind¹, Inga Akeren², Hilde-Irén Liland², Birgith Nerskogen²

¹UiT The Arctic University of Norway, HARSTAD, Norway
²University Hospital of North Norway, TROMSØ, Norway

Introduction: Critically ill, mechanically ventilated (MV) ICU patients have traditionally been sedated during the treatment. However, continuous sedation prolongs weaning from ventilators and reduces outcome for these vulnerable patients. In recent years, practices have changed towards lighter sedation. A Danish randomized clinical trial showed that a protocol of no sedation resulted in significantly shorter duration of MV, shorter length of ICU stay and shorter hospital stay. This study has now been repeated as a multicentre study, with participation from two Norwegian ICUs. Working with awake critically ill MV ICU patients represents a new dimension of Norwegian nurses’ daily work.

Aim: To explore nurses’ experiences of caring for non-sedated, critically ill patients requiring mechanical ventilation.

Setting & participants: The study took place in a ten-bed general ICU at a Norwegian university hospital. Nurses from the ICU were the subject of the study.

Methods: Nine female and three male ICU nurses participated in two focus groups, 10 months after study start. They received written information and gave their consent to participate. The interviews were analysed using a constant comparative method focusing on ongoing processes.

Results: One overall theme emerged, “Cautious optimism”, which suggests positive experiences but with a negative undertone. The most remarkable experiences were related to care for the patient, but there were more disappointments connected to the teamwork. Three subthemes were identified: 1) Skilled attentiveness, 2) A wonderful but challenging nurse-patient relationship, and 3) A changed nurse-family relationship.
Conclusion: Through skilled attentiveness and continuous involvement, engagement and optimism in caring for awake critically ill patients were experienced. This was enhanced through extensive interaction with the patient, although experiences of rapidly worsening conditions in awake patients were found to be challenging. Co-operation with relatives entailed new aspects of care. Team collaboration in caring for these patients could be improved.

OP03-05

ANALGO-SEDATION VERSUS MERELY A SYSTEMATIC APPROACH TO PAIN TREATMENT AND SEDATION, - ANY SIGNIFICANCE FOR THE ICU PATIENT?

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Introduction: Routines of a systematic approach in pain, agitation/sedation and delirium (PAD) practice are barely discussed in studies proving the effects of light sedation. To achieve the goal of an awake and cooperative ICU patient PAD practice has been studied over time in a Norwegian ICU; 1) In 2009 assessment tools for PAD were implemented 2) 5 years closely follow-up of adherence of the routines implemented 3) From 2014-2015 an analgo-sedation approach was implemented as a supplement

Aim: To describe the effects of analgo-sedation versus a systematic approach to PAD in a Norwegian ICU

Methods: A longitudinal study measuring PAD-relevant variables at three time points

Setting, participants: An 11-bed highly specialized mixed ICU with national treatment responsibility. Data were gathered for a total of 205 patients' complete ICU stay, corresponding to 1607 patient ICU-days. All consecutive patients admitted at 3 time points for a 4-5 months period (time1=2009, t2=2014, t3=2015), aged 18-80, intubated or mask ventilated by admission, and with an ICU stay> 48 hours.

Results: In general pain was a minor problem; at t1 NRS varied from 0-5, and 0-3 at t2 and t3, respective mean CPOT scores 1.6 to 3.1. No significantly differences in pain scores at rest versus during mobilization. Patients' mean RASS levels increased from -2,2 in 2009, and stabilized at RASS = - 1,7 in 2015. An overall but not significant increase in CAM-ICU positive patients was found in 2015, and more patients were mobilized.

Conclusion: The significant improvement of PAD practice occurred between t1 and t3, showing that repetitive measures and continuously monitoring support building evidence based recommended practice with merely a systematic approach. Other outcome measures as length of stay, mortality and long-term cognitive function have to be studied further in a context based on systematic assessments and documentation of all PAD-related variables.

ORAL PRESENTATIONS 4

PALLIATION AND END OF LIFE

OP04-01

STARTING PALLIATIVE CARE FOR HEART FAILURE PATIENTS

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The incidence and prevalence of heart failure (HF) are increasing. Patients who suffer from HF have a high mortality rate. Even with modern treatment, the number of patients requiring palliative and end-of-life care for heart failure will continue to increase. Palliative care may be of great benefit to the patient when it gradually supplants curative treatment as the patient’s HF advances. Patients dying from HF may have unpredictable illness trajectory which requires health professionals experienced in palliative care for this patient group. It is of great importance to guide and support the patients and their families as disease progression becomes evident.
**Objective:** The Cardiology and Heart Failure teams, initiated a project for integrating Palliative Care in the treatment of patients with severe and progressing HF, focusing on two groups of patients: heart transplant candidates and LVAD recipients aiming at improving their quality of care. The project was initiated by the ward’s head nurses and a palliative and primary care. The palliative physician joined the nursing staff on a weekly basis to establish the most effective supporting care to the hospitalized patients in the ward and at the outpatient clinic. Special attention was given to the continuity of care after decision was taken to discharge the patient from the cardiology department.

**Recommendations:** This presentation will provide tips and tools to develop a nursing palliative care team as well as specific benefits which improve the quality of life of our patients. Special focus in the program is on establishing an educational program on palliative care which is based on lectures and palliative care database for nurses.

**OP04-02**

**CRITICAL CARE NURSES' PERCEPTIONS OF THE QUALITY OF DEATH IN THE INTENSIVE CARE UNIT**

Sonya Sharaby, Freda Dekeyser-Ganz

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**Introduction:** Despite heroic efforts, some ICU patients do not respond to treatment and die after days or months of suffering and pain. A good death or a good quality of death includes patient’s and family’s control of symptoms, consideration of the preferences and wishes of patients and families, good communication with health care providers, not using invasive measures at the end of life and dealing with spiritual and religious needs.

**Aim:** To describe critical care nurses’ perceptions regarding the quality of death of dying patients in their units.

**Setting and Participants:** The sample included 101 critical care nurses from adult, pediatric and neonatal units in two hospitals in Israel.

**Methods:** Nurses completed two questionnaires, a demographic and professional background questionnaire, and a revised version of the Quality of Dying and Death Questionnaire for Nurses. Ethical approval was obtained for the study.

**Results:** Nurses rated the quality of care by doctors and nurses as 7.27/10 (SD=1.98) and 8.33/10 (SD=1.69), respectively. Nurses also rated whether family members were at the patients’ bedside during this process (M=7.42/10, SD=2.82); whether patients were dependent on medical devices (M=7.64/10, SD=2.05); whether patients were kept alive too long (M=5.89/10, SD=2.28) and whether spiritual needs were met (M=4.81/10, SD=3.04).

**Conclusions:** Nurses in this sample perceived that most patients were attached to medical devices and were kept alive too long. Care of spiritual needs was low. It is recommended that family visiting hour policies be made more liberal and that physical contact between family members and the patient should be encouraged. It is recommended that programs be developed that train critical care staff to treat dying patients, including spiritual needs.

**OP04-03**

**PERCEPTION OF QUALITY PALLIATIVE CARE AND BARRIERS TO PROVIDING PALLIATIVE CARE AT END OF LIFE AMONG INTENSIVE CARE UNIT NURSES**

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**Background:** While the primary goal of the ICU is to save lives, patients die in the ICU. Goals of care can change from saving lives to improving quality of life, via palliative care. Lack of awareness of ICU palliative care and other barriers may impair the quality of care at the end of life.

**Aims:** To describe ICU nurses’ perceptions of the quality of care and barriers to palliative care at the end of life, and the relationship between them.

**Method:** A convenience sample of 126 ICU nurses from two Israeli hospitals completed 3 questionnaires: a demographic and professional characteristics questionnaire; Quality of Dying and Death Questionnaire-Revised; and Survey of Oncology Nurses’ Perceptions of End of Life Care-Revised.
**Findings:** Nurses’ perceptions of quality of care had a mean score of 7.5/10 (SD= 1.23). The lowest mean score was for the item, “Education toward giving palliative care” (M=5.77, SD=2.38). The mean barrier intensity and frequency scores were 3.05 (SD=0.76) and 3.30 (SD=0.61), respectively. The barrier with the highest score was, ‘Dealing with distraught family members while providing patient care’, with a mean intensity and frequency score of M= 3.70 (SD=1.17) and M=3.93 (SD=1.10), respectively. A weak, negative, statistically significant correlation was found between frequency of barriers and quality of care (r=-.19, p<.001). A moderate correlation was found between barrier intensity and frequency (r=.46, p<.001). No statistically significant correlations were found between any demographic and professional characteristics with barrier frequency or intensity or with quality of care.

**Conclusion:** While quality of care was perceived to be moderate/high, perceived low levels of palliative care education were a primary source of poorer quality care, regardless of the nurse’s characteristics. Therefore it is recommended that efforts be made to increase ICU palliative care education. Further research is recommended to examine other barrier sources.

**OP04-04**

**MORAL DISTRESS IN END-OF-LIFE CARE DECISIONS IN THE INTENSIVE CARE UNIT**

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2The Virtual University of Uganda, KAMPALA, Uganda

**Introduction:** Moral distress is a poorly recognised and understood phenomenon and little is known of the triggering factors in ICU end-of-life decisions. Prior research focused largely on nurses, less was known about doctors’ experiences, and moral distress in relatives is under-investigated.

**Aim:** To identify what triggers and constrains moral distress in end-of-life decisions in ICU and the consequences of moral distress for clinical staff and relatives involved.

**Setting:** The study was conducted in a large ICU in Northern Ireland (August 2012- November 2013) and funded by the Research and Development Office of the Public Health Agency.

**Methods:** A narrative analysis of in-depth interviews with 20 bereaved relatives and 45 nurses and doctors closely involved in 21 patient cases of non-escalation and withdrawal of therapy, and organ donation following brain-stem death and circulatory death.

**Results:** ICU nursing and medical staff experienced a considerable amount of moral distress in end-of-life care situations and decisions. Bedside nurses and junior medical trainees with perceived lower levels of knowledge, experience and influence in end-of-life decisions experienced more moral distress than consultants and senior nurses. At least half of relatives experienced moral distress at some point along the ICU end-of-life care trajectory. Triggers specific to all three participant groups included breaches in the consistency and continuity of care delivery and end-of-life decisions and insensitive and lengthy organ retrieval procedures. In particular, failure to ensure ‘The Good Death’ left a powerful sense of failed obligation. Some relatives experienced moral distress several months after the death.

**Conclusions:** Findings have important implications for (a) educational preparation of new ICU nurses and doctors to prepare them for the complexities of the ethically challenging ICU environment; (b) the support of relatives in ICU with follow-up after the death; and (c) improvement in organ retrieval services in Northern Ireland.

**OP04-05**

**THE EXPERIENCE OF GRIEF AND DEATH IN INTENSIVE CARE**

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Introduction: Direct contact with death and routinely process produces one of the most shocking experiences for health professionals, can generate a significant burden on the professional.

Aim: evaluate the experiences towards death and how to face the grief of health professionals in adults, neonatology and pediatrics.

Setting and participants: Nurses and physicians with more than 1 year of experience in intensive care units for adults, neonatology and pediatrics at 3 tertiary hospitals of the Community of Madrid (Spain). It excludes those professionals who had suffered a grief in the 12 months prior to the investigation.

Methods: Descriptive, cross-sectional study from June 2014 to February 2015. An ad hoc autofilled scale was administered, multiple response and Likert scale with sociodemographic variables, experiences, feelings and strategies to face death and grief. A statistical analysis means, standard deviation and percentages, using the chi-square and Student t test and ANOVA was performed, using as significant at p <0.005 using SPSS ver.18.0

Results: A total of 282 surveys were collected. In addition to sociodemographic variables it was obtained that 57.8% of professionals consider death as a professional failure (especially medicine residents). The death of a patient has passed once, in 66.3% of professionals in their personal lives, and 43.3% in their professional life (especially in neonatology). The most frequent feelings were sadness 45.7%, frustration 53.9% and impotence 64.2%. Also they pointed obsessive thoughts, inability to disconnect, insomnia, feeling not to situations dignified death, suffering, aggressive medical treatment, and rethinking of life.

Conclusions: Most professionals consider death as a professional failure, affecting both their personal lives and in their professional life, especially medical residents. The most common feelings that occur are impotence, frustration and sadness. They also show obsessive thoughts, insomnia, psychological fatigue and reframing of life. It is necessary to improve coping strategies death of professionals.

OP04-06

MAXIMISING FAMILY CONSENT FOR ORGAN DONATION: THE INTRODUCTION OF AN AIDE TO PLANNING THE FAMILY APPROACH CONVERSATION

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One objective of the ‘Taking Organ Transplantation to 2020’ strategy is to increase consent rates nationally to at least 80% by 2020. In April 2015 the consent rate for Northern Ireland was 60% (DBD 67%, DCD 54%). To influence consent in hospital, families must be given the best possible support when asked to consider donation on behalf of a loved one. Evidence suggests there are modifiable factors which can influence family experience and consent (Walker et al, 2013). NICE CG135 and NHSBT Best Practice Guidance on approaching the families of potential organ donors reinforce that every approach to those close to the patient should be planned by the multidisciplinary team, involve the specialist nurse and be clearly planned taking into account the known wishes of the patient.

The team objective was to increase the number of organs available for transplantation by maximising consent from families approached for organ donation. We aimed to achieve this by introducing an aide to planning the approach conversation with at least 85% of approaches to be made utilising the planning aide, by April 2016.

The PDSA framework was used to test the idea and assess its impact. Measures evaluated were:

- Rate of Utilisation of the aide
- Feedback from staff
- Feedback from families.
- Specialist Nurse involvement rates.
- Consent rates.

Results at 10 months:

- A utilisation rate of 62%
- (DBD 43 approaches 79%, DCD 42 approaches 45%)
Positive evaluation by multidisciplinary team
General feedback from families positive
No change to SNOD involvement rates
Suggested positive impact on consent rates
DCD Consent rate with aide 79% without aide 30%
DBD Consent rate with aide 68% without aide 56%
Results suggested a positive impact on several measures and a second PDSA cycle was implemented to analyse barriers to planning and identify further actions.

ORAL PRESENTATIONS 5	ORGANISATION

OP05-01
FROM A WARD LEADER PERSPECTIVE: USING PROTOCOLS IN ICU PRACTICE

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Aims/Purpose: Protocols are evidenced-based structured guides for directing care to achieve improvements. But translating that evidence into practice is a major challenge. It is not acceptable to simply introduce the protocol and expect it to be adopted and lead to change in practice. Implementation requires effective leadership and management. This presentation describes a strategy for implementation that should promote successful adoption and lead to practice change.

Presentation description: There are many social and behavioural change models to assist and guide practice change. Choosing a model to guide implementation is important for providing a framework for action. The change process requires careful thought, from the protocol itself to the policies and politics within the ICU. In this presentation, I discuss a useful pragmatic guide called the 6SQUID (6 Steps in QUality Intervention Development). This was initially designed for public health interventions, but the model has wider applicability and has similarities with other change process models. Steps requiring consideration include examining the purpose and the need for change; the staff that will be affected and the impact on their workload; and the evidence base supporting the protocol. Subsequent steps in the process that the ICU manager should consider are the change mechanism (widespread multi-disciplinary consultation; adapting the protocol to the local ICU); and identifying how to deliver the change mechanism (educational workshops and preparing staff for the changes are imperative). Recognising the barriers to implementation and change and addressing these locally is also important. Once the protocol has been implemented, there is generally a learning curve before it becomes embedded in practice. Audit and feedback on adherence are useful strategies to monitor and sustain the changes.

Conclusion: Managing change successfully will promote a positive experience for staff. In turn, this will encourage a culture of enthusiasm for translating evidence into practice.

OP05-02
INFLUENCE OF CONSTRUCTION AND DESIGN OF AN INTENSIVE CARE UNIT ON PERCEPTION AND WELL-BEING OF PATIENTS

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Aim: To report about five years of knowledge and experience of working at a state of the art ICU.
Introduction: In 2010 a new Intensive Care Unit (ICU) was built on the roof of the University Medical Center Utrecht (UMCU) in the Netherlands. This location provided a unique opportunity to build a spacious ICU with 36 single rooms. All patients have enough daylight, view, privacy and their own quiet space.
Making design decisions
Although studies focusing on ICU environment and patient outcomes are scarce, evidence shows that the design of the ICU environment plays an important role in making hospitals safer and more healing for patients. We combined best practices from national and international ICU’s. The concept of care was designed in a way that nurses could stay near the patient as much as possible. Therefore we started a satellite pharmacy and a new materials distributing process. By using this system medication and materials are delivered bedside daily.

Methods: In 2013 we started the follow up study and follow up care. This provided us with information from patients and relatives about their experiences during the ICU stay.

Results and Experiences after five years: We created awareness about patient and family experiences among the nurses. This helps us to improve our quality of care. In our ICU with all single rooms, designed to reduce noise and improved exposure to daylight, it was found that patients spent fewer days with delirium than in a conventional ICU without all single rooms. The satellite pharmacy led to fewer medication preparation errors as well as medication contamination.

Conclusion: To us this proves that the needs of the patient are mandatory in designing a new ICU.

OP05-03

ACCEPTANCE OF A NEW ELECTRONIC MEDICAL RECORDS SYSTEM AMONG THE NURSING STAFF IN ICUS BASED ON TAM2

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Introduction: Technology is widely used in nursing field in the intensive care units (ICU); thus, nurses must be prepared to accept and work in a high technology environment. However, in many cases nursing staff have been reported to avoid technology and computing. Little is known about the acceptance of technology and computing among nursing staff in ICUs, especially in hospitals in Israel.

Aim: The aim of this study was to examine factors associated with the acceptance of a new electronic medical records system among the nursing staff in ICUs in Israel based on the Technology Acceptance (TAM) and Theory of Planned Behavior (TPB).

Setting & participants: Study population included 152 nurses in five ICUs of four Israelis tertiary-care academic medical centers.

Method: It’s was a prospective, descriptive-correlational study. Ethical approval was received from all participating institutions. A Davis Technology Acceptance Model (TAM2) questionnaire was used to examine the perceived usefulness and ease of use, attitudes and acceptance of ICU electronic medical records system. Factors influencing attitudes and acceptance of the system were compared using stepwise regression.

Results: 123 nurses responded to the questionnaire (80.9% response rate). Subjective norms was the most important factors associated with acceptance of new electronic medical records system ($R^2=60\%$). Output quality and perceived ease of use was the second most important factors explained perceived usefulness ($R^2=59\%$). Perceived ease of use had the greatest influence on perceived usefulness (correlation $0.72$, $p<.001$). Perceived usefulness had the greatest influence on acceptance (correlation $0.67$, $p<.001$).

Conclusions: The TAM2 was found to be a good predictor of acceptance of new electronic medical records system by ICU nurses. Therefore, this model can be used as a basis for designing interventions aimed at improving ICU nurse acceptance of new technologies.

OP05-04

THE INFLUENCE OF A PROFESSIONAL DEVELOPMENT INTERVENTION ON CRITICAL CARE NURSE INTENT TO STAY

Sandra Goldsworthy

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**Introduction:** The current international nursing shortage is worsening and is particularly acute in critical care settings. Intensive Care Units have been shown to have the highest turnover rates and there is currently limited scientific evidence on how to retain critical care nurses. Studies have shown that one of the most commonly listed incentives for this group of nurses is organizational support in the form of access to educational opportunities and career development.

**Aim:** The purpose of this study was to examine the influence of a professional development intervention on critical care nurses’ intent to stay, the mechanisms of effect, and the influence of other organizational factors on these relationships. A secondary objective of the study was to explore the influence of transfer of learning on intent to stay among critical care nurses. Research Hypothesis 1: There will be a significant difference in critical care nurses intent to stay (unit, organization, and profession) for nurses who receive the professional development intervention.

**Setting and Participants:** A random sample of 363 critical care nurses from multiple hospital sites in Canada.

**Methods:** This quasi-experimental study tested a theoretical Critical Care Nurse Retention model that consisted of a professional development intervention, two mediator variables (perceived organizational support and critical care self-efficacy) and three moderator variables (work environment, general self-efficacy and transfer of learning) as mechanisms that may influence intent to stay.

**Results:** Findings showed the professional development intervention had a direct effect on intent to stay in the unit and intent to stay in the profession. Final analysis revealed that the model explained 23% of the variance in intent to stay in the profession.

**Conclusions:** This research provides new evidence supporting the relevance and importance of investing in professional development opportunities and its subsequent impact on intent to stay.

OP05-05

**MSC NURSES AS PROFESSIONAL DEVELOPMENT COORDINATORS: AN INGREDIENT IN QUALITY, PROFESSIONAL DEVELOPMENT AND PATIENT SAFETY?**

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²UiT The Arctic University of Norway, HARSTAD, Norway

**Background:** The University Hospital of North Norway Surgery and Intensive Care Clinic has 380 nurses, including 32 specialist nurses, in three hospitals. The job descriptions and duties of the specialist nurses vary, even within the same field. In 2013, aiming at a more unified professional approach, the Clinic created a position for a Research and teaching nurse (RTN) with a PhD, and MSc nurses as professional development coordinators (PDC) in each field (20% clinical work).

**Purpose:** The purpose was to achieve a uniform structure for better coordination of professional development and enhance experience sharing and cross-disciplinary learning.

**Design:** RTN and PDC will prepare action plans based on the Clinic’s priority areas. Quality assurance of information flow, division of responsibilities and decision-making processes will be addressed in meetings between RTN, PDC and department heads. A similar meeting structure at section level has been established between PDC, specialist nurses and department nurses. Evidence-based practice (EBP) is the common platform and working method for the three-year project. An annual plan for training and supervision will be prepared in cooperation with leaders.

**Results:** Leaders and specialist nurses attended 1-2 day courses in EBP. The annual in-service conference for specialised nurses was improved, with a clearer profile, reflecting competence-building needs in different fields. PDC and the quality advisor implemented a patient safety programme. New job descriptions for specialist nurses have been created. PDC have conducted surveys resulting in recommendations and gradual implementation of new/changed practices.

**Discussion/conclusion:** The Clinic has established a consistent structure for professional development, strengthened by PDC across sections and disciplines. EBP as a common platform enhances the Clinic’s profile and reduces the theory-practice gap. Quality assurance and improvement are in focus. A well-structured system that prioritises professional development will ensure more competent staff and enhance treatment and patient safety.
IMPLEMENTING A STRUCTURED TEAM BRIEFING IN CHANGES OF SHIFTS

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Background: An hospitalized patient experiences around 24 changes of shifts. Thus the information transferred has to be focused and effective in a limited time. In addition to the information transferred regarding individual patient during change of shifts, there is a crucial importance for team briefings concentrating on the events that occurred on the ending shift and the prospect to the starting shift, in order to maintain the continuity of care and prevention of mistakes.

Aims: Structuring a tool for information transferred during change of shifts; Improving the quality of information transferred and involving all the team in the process.

Methods: Interviewing the nursing staff regarding the information required to be transferred during change of shifts Structuring a briefing with six major issues that should be discussed and transferred in each change of shift: 1. Patient and family who require special attention, 2. Important or adverse events occurred during the shift, 3. Expected admissions, 4. Important updates or announcements, 5. Required staff needed for the starting shifts and availability, 6. Equipment and medications (new, high risk, damaged etc)

Results: Implementation of the briefing required change in the work process. The nursing staff was required to gather in the nursing station in the beginning of each shift to perform the briefing and only after to get updated on the patient individually. Each briefing took around 5 minutes. After 3 months briefing were performed in 80% of the changes of shifts

Conclusions: Structuring the method of information transferred prevented mistakes related to lack of information. The team briefing made the nursing staff aware to systemic processes and events in the unit that are not necessarily related to their patient

ORAL PRESENTATIONS 6  BREATHING

OP06-01
Abstract not available.

OP06-02
UNDERESTIMATION OF PATIENT BREATHLESSNESS BY NURSES AND PHYSICIANS DURING A SPONTANEOUS BREATHING TRIAL

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Introduction: Breathlessness is a prevalent and distressing symptom in intensive care unit (ICU) patients. Patients’ perception of breathing during a spontaneous breathing trial (SBT) might be correlated to extubation success. There is little evidence of the ability of health care workers to assess the patients’ experiences of breathlessness. Aim: To assess mechanically ventilated (MV) patients’ experiences of breathlessness during SBT. Setting and participants: 100 MV patients from three Norwegian ICUs.
Methods: A prospective observational multicenter study where we assessed the agreement between nurses, physicians and patients’ scores of breathlessness, perception of feeling secure and improvement of respiratory function at the end of an SBT. We also determined the association between breathlessness and demographic factors or respiratory observations. Self-reported breathlessness, feeling secure and improvement of respiratory function was reported at the end of an SBT by 11-point Numerical Rating Scales.

Results: Sixty-two patients (62%) reported moderate or severe breathlessness. The median intensity of breathlessness reported by the patients was 5 compared to 2 by nurses and physicians (p<0.001). Patients felt less secure and reported less improvement of respiratory function compared to nurses and physicians ratings. About half of the nurses and physicians underestimated breathlessness (difference score ≤ -2) compared to the patients’ self-reports. Underestimation of breathlessness was not associated with professional competencies, whether the nurse or physician was involved in previous patient care or number of years working in an ICU. Breathlessness was not related to objective assessments of respiratory function.

Conclusions: Patients reported higher breathlessness after SBT compared to nurses and physicians. The data suggests that patients’ self-report of breathlessness should if possible be included in the evaluation of an SBT.

THE BREATH OF LIFE. PATIENTS’ EXPERIENCES OF BREATHING DURING AND AFTER MECHANICAL VENTILATION

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Introduction: Breathlessness is a prevalent and distressing symptom in intensive care underestimated by nurses and physicians. This indicates that breathlessness has different meaning for patients and health care personnel. The patients are telling us something about the experience of breathing that we do not really understand.

Aims: First, to explore the lived experience of breathing during and after mechanical ventilation (MV) and to explore how a period of needing help to breathe was lived through and given meaning to by former ICU patients. Second, to compare the patient self-report of breathlessness obtained during MV with experiences of breathlessness later recalled by the same patients after ICU discharge.

Setting and participants: 11 former ICU patients from three Norwegian ICUs already included in a prospective observational study of MV patients’ experiences of breathlessness during a spontaneous breathing trial.

Methods: A qualitatively driven sequential mixed method design combining prospective observational breathlessness data during MV and data from 11 post-discharge in-depth interviews.

Results: Experiences of breathing intertwined with the whole illness experience and where described in four themes: Existential threat; The tough time; An amorphous and boundless body and; Getting through. The essential meaning of needing help to breathe was expressed as being in a sort of in-between space at the threshold between life and death, and elicited feelings of having to choose a direction. Bond to family and attuned caring were essential to help and promote ICU patients’ getting through and to support their existential will to keep on living. Second, there were contradictory findings concerning breathlessness, as four out of six patients who reported breathlessness during MV did not remember being breathless in retrospect.

Conclusions: Insight into the phenomenon of breathing could enhance communication between health professionals and patients in MV treatment and follow up-care.

PERSON-CENTRED CARE IN ICU DURING WEANING FROM PROLONGED MECHANICAL VENTILATION

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**Introduction:** Person-centered care (PCC) is an important part of care today in establishing routines that initiate, integrate, and safeguard patient partnership in daily clinical practice. PCC is widely employed in chronic illness and long term disease health care research. In the ICU context this could be a challenge considering critical illness, sedation and patients’ loss of voice, especially during prolonged weaning which often means patient suffering, increased mortality and risk of complications. This raises a question about if PCC has also gained ground in the context of ICU.

**Aim:** Identify elements of person-centered care during weaning from prolonged mechanical ventilation in ICU.

**Setting & participants:** 19 ICU nurses from three general ICUs in Sweden participated. All participants were specialists in ICU care and in 30-60 age.

**Methods:** Individual semi structured interviews were conducted and deductively analysed by employing PCC framework including; initiate, integrate and safeguarding the patient partnership

**Results:** Elements of PCC exist during weaning in the ICU context and the analysis shows several examples during the weaning process. Participants made communication possible for the sedated patient, tried to understand the patient’s situation and strove to know the person. They promoted for patient co-determination through a first trustful meeting, shared decision-making and relatives involvement. Finally to co-operate the weaning plan they promoted for a dynamic care plan, share the plan with the patient and finally adjusted the plan to patient will and conditions.

**Conclusion:** The result shows PCC in several areas to improve and develop weaning in the ICU context. A wider implementation of such structures where patients more systematic participate and influence over their care could lead to increased patient satisfaction and finally better patient outcome.

**OP06-05**

**NEWLY FOUNDED DUTCH NATIONAL ICU WEANING EXPERTISE CENTER (NEXCOB) INTRODUCES UNIQUE HOLISTIC WEANING APPROACH**

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**Aim:** To introduce the new phenomenon of a Dutch national ICU weaning expertise center (NExCOB).

**Introduction:** When mechanically ventilated ICU patients are recovering, the ventilator support is decreased and eventually discontinued, which is called weaning. In 20-30% of patients this process is difficult, because of multi factorial problems. This may lead to increased ICU- and hospital length of stay and thus increased costs. It also is an additional (emotional) stress to patients and relatives.

Optimal care for prolonged weaning patients requires enormous effort from both patient and healthcare professional. This process is on regular ICUs easily compromised because of distraction by acute events with other patients. Also, because of the scattering of ICU’s in the Netherlands, weaning expertise is difficult to obtain.

Therefore, a new Dutch national ICU weaning expertise center (NExCOB) was founded in 2012, which supports clinicians with a unique and innovative concept, characterized by in depth analysis of the differential diagnosis for difficult weaning and specific therapeutic strategies. Our dedicated weaning unit has become available from 2015. Aim is to analyze patients using a thorough and structured approach: the ABC of weaning failure. NExCOB treats complex weaning problems using a systematic and holistic approach by a multidisciplinary team. The ICU nurse plays a significant role in the weaning success, because of a dedicated nursing staff with specific knowledge of weaning and early mobilization in close cooperation with other professionals.

Until September 2016, 40 patients were admitted: 22 (55%) were males, mean age was 69 (SD 10) years, mean APACHE II score was 18 (SD 5). Of them, 88% was successfully weaned. Patients were discharged after median 11 [IQR 5-16] days.

**Recommendations:** When patients fail to wean, consulting specialized weaning expertise may help to increase weaning success, and shorten admission.
OP06-06

DESCRIPTIVE STUDY OF A SAMPLE OF SELF EXTRUBATION PATIENTS

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Objectives: To describe factors associated with the occurrence of deliberate self-extubation and associated patient outcomes.

Methods: Retrospective descriptive study. All episodes of self-extubations (SE) of patients admitted to a medical-surgical Intensive Care Unit (ICU) in a 5-year period (January 2009-December 2014) were included. Demographic, structural, treatment variables, length of stay (LOS) and mortality were studied. A descriptive analysis was performed. Results are presented as percentages and mean ± standard deviation, as appropriate.

Results: A total of 126 episodes of SE were analyzed. Patients' mean age was 56±19 years, 85.7% were male, APACHE II score was 16±7, and they had been under mechanical ventilation (MV) for 12±24 days.

Eighty six (68.3%) SE episodes occurred in ICU rooms with natural light, 55.6% away from the nursing staff and 45.2% overnight. Seventy-nine (62.7%) episodes with continuous sedation, 57.9% opioid derivatives and 66.7% mechanical restraint. Endotracheal tube (ETT) size was ≥ 8 in 76.6% of patients, 70.6% were in a controlled mode and 94.4% received FiO2 ≤ 50%. The episode of SE took place before the fifth day in 61.9%. Fifty-nine (46.8%) patients requiring reintubation.

Mortality was 26.2% in studied population. Those patients requiring reintubation presented increased LOS (58 ± 58 vs. 27 ± 27 days; p <0.001) and mortality (39% vs. 14.9%; p = 0.002) when compared to patients not requiring reintubation.

Conclusions: We observed a higher percentage from our sample of SE in patients with large ETT, controlled modes and requirements of FiO2 ≤ 50 and overnight. Patients requiring reintubation showed LOS and increased mortality.

ORAL PRESENTATIONS 7  CRITICAL CARE EDUCATION

OP07-01

EFFECTS OF A SIMULATED RESUSCITATION WITH A RELATIVE MEMBER PRESENT ON THE PUBLIC'S VIEWS OF FAMILY WITNESSED RESUSCITATION

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Introduction: Research into the views of health-professionals (HP), family members and patients towards family witnessed resuscitation (FWR) is well established. However, general public attitudes about FWR are under-researched and their perceptions and attitudes may support wider acceptance by healthcare professionals.

Aim: To explore the attitudes and views of general public members about FWR attending a ‘Science in the City’ public engagement event following exposure to a short simulated FWR intervention.

Setting and participants: Large public tourist information space/shopfront located at a city harbourside leisure/entertainment areas. The space was temporarily converted into a lecture room. Open invitation to members of the general public who had previously registered to attend online (n=21).

Methods: Registered attendees initially completed a short 9-item questionnaire about their views, attitudes and beliefs concerning FWR.

A pre-programmed high-fidelity live simulation scenario involving a male patient (mannequin) collapsing and being resuscitated while a family member was present observing events and interacting with staff, comprised the intervention.
After a 30 minute whole group discussion, attendees then completed a 7-item questionnaire to assess whether the simulation and group interaction had influenced their beliefs. Questionnaire content focused on their understanding of resuscitation and cardiac arrest, their preferences if they were being resuscitated, and next steps following the public engagement event.

**Results:** The data demonstrated that despite initial concerns, attendees had a more positive disposition towards FWR. Following the simulation, there was 50% increase in individuals wanting to have FWR and 75% also believing this would benefit relatives regardless of outcomes and indicating they would open discussions with their relatives and express their wishes.

**Conclusion:** Members of the public have limited understanding of FWR, however simulation and open discussion can help raise awareness, respond to concerns and impact on their future decisions and preferences such they or family members require live-saving interventions.

**OP07-02**

**INTRODUCING PALLIATIVE CARE INTO THE ICU: RESULTS OF AN EDUCATIONAL INTERVENTION**

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**Introduction:** While palliative care has been practiced for several decades, its principles are just beginning to be actively implemented in many ICUs across Europe. The Israeli Society for Cardiac and Intensive Care Nursing developed and administered an innovative ICU Palliative Care course. The primary goal of this course was not only to educate those nurses that participated in the course, but to change End-of-Life Palliative Care practices, leading to improved quality of care. A study was conducted to determine whether the course influenced participants with regards to their knowledge, attitudes, behaviors and end-of-life clinical practices.

**Aim:** To determine the effect of the ICU Palliative Care course on self-perceived knowledge, attitudes, and behaviors; and end-of-life clinical practices

**Setting and Participants:** 105 ICU nurse participants of a 112 hour course on Palliative Care in the ICU

**Methods:** Participants completed 4 questionnaires (a personal characteristics questionnaire; End-of-Life Care in the ICU; Quality of Death and Dying; End-of-Life Nursing Practices) on the first (T1) and last days of the course (T2) (6 months apart) and 6 months after completion of the course (T3).

**Results:** Palliative Care knowledge, attitude and behaviors were significantly improved over time.

**Conclusions:** The course achieved its goal of educating ICU nurses about Palliative Care and has started to trigger improved ICU Palliative Care practices.

**OP07-03**

**FROM NOVICE NURSE TO YOUNG EXPERT USING SIMULATION IN HOUSE EDUCATION**

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**Introduction:** ICU nurses are required to demonstrate knowledge, skill, confidence, and well-developed critical thinking, a challenge for new nurses without experience in clinical nursing or intensive care. Yet even new, inexperienced nurses are entering the ICU due to the nursing shortage. This is a challenge for both new nurses and management. We must aim to provide the highest standard of patient care while training young nurses and fostering their capacity for critical thinking.
Aim: We aim to describe programs to develop critical thinking among new nurses in the ICU using simulation training. Settings & participants: 40 nurses participated in the training. Simulations were prepared by the managerial nurses from the Surgical, Medical and Neurosurgical-Cardiovascular ICUs.

Method: Training was primarily based on simulation exercises based on real clinical situations, supplemented by theoretical material. Lectures and simulations were designed to provoke critical thinking. Topics included: respiratory care, noninvasive respiration, sedation of patients on a respirator, acid-base balance, neurological assessment, and head trauma.

Results: In post training assessments, 94% of participants were very satisfied with training on mechanical ventilation, and 88% were very satisfied with training on noninvasive ventilation. 82% reported that the day was excellent for them and 18% said it was very good. Nurse managers’ feedback included novice nurses working with improved critical thinking skills.

Conclusion: Simulation training can emulate the reality of intensive care nursing in the safest way, while developing clinical experience, skills, and critical thinking in intensive nursing care. The nursing management team developed the symposium for training and for empowerment of new nurses from three ICSs, together as a mutually supportive critical care team. Additional gain included increased intra- and external team cohesiveness.

OP07-04

DEVELOPMENT AND EVALUATION OF A NOVEL SIMULATION BASED APPROACH TO SEPSIS EDUCATION IN UNDERGRADUATE NURSING

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Introduction: Sepsis is an emerging life-threatening condition which may present with vague signs, and it can be misinterpreted as other conditions. Failure to recognise sepsis can lead to delayed diagnosis and treatment, with serious adverse outcomes for patients. Sepsis education is crucial for early recognition and timely management. To date, a number of initiatives have been developed to raise awareness of sepsis, yet the incidence of sepsis and lack of early identification continues. High fidelity simulation has been adopted widely within undergraduate nursing programmes, however there is a lack of evidence to support its use specifically to deliver sepsis education.

Aim: The aim of this study was to develop and evaluate a simulation exercise on the assessment and management of a patient presenting with sepsis in an adult setting.

An evaluation study using a cross-sectional questionnaire to collect both quantitative and qualitative data on the simulation exercise was devised. A convenience sample of 48 year three undergraduate nursing students from one large Higher Education institution in the United Kingdom was obtained, and descriptive statistics were used to summarise and describe the quantitative data from the fixed response questions. Content analysis was undertaken of the qualitative data generated from the open-ended questions. This study was an evaluation of teaching and therefore exempt from ethical review.

Results: Results from the questionnaire revealed that the majority of nursing students (96%, n=46) recognised that the sepsis simulation session was a valuable learning experience. It helped them link theory to practice; it was realistic, allowing them to practice skills, and it afforded students an opportunity to consolidate essential assessment and management of sepsis.

Conclusions: Active learning in the form of simulation helps enhance undergraduate nursing students’ knowledge and skills in the recognition and management of sepsis in the adult patient.

OP07-05

STANDARDIZED SIMULATION-BASED ACUTE AND INTENSIVE CARE NURSING CURRICULUM TO INCREASE NURSING STUDENTS SIMULATED RESUSCITATION PERFORMANCE: A QUASI-EXPERIMENTAL STUDY

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**Background:** Simulation-based curriculum has been demonstrated as crucial to nursing education in the development of students’ critical thinking and complex clinical skills during a resuscitation simulation. Few studies have comprehensively examined the effectiveness of a standardized simulation-based acute and intensive care nursing curriculum on the performance of students in a resuscitation simulation.

**Objective:** To evaluate the impact of a standardized simulation-based acute and intensive care nursing curriculum on nursing students’ performance in a resuscitation simulation.

**Setting:** A simulation center in a Chinese University School of Nursing.

**Participants:** Third-year nursing students (N=39) in selecting the Acute and Intensive Care course were divided into a control group (CG, n = 20) and an experimental group (EG, n = 19).

**Methods:** The EG participated in a standardized high-technology, simulation-based acute and intensive care nursing curriculum. The standardized simulation-based curriculum for third-year nursing students consists of three modules: disaster response, emergency care, and critical care, which include clinical priorities (e.g. triage), basic resuscitation skills, airway/breathing management, circulation management and team work with eighteen lecture hours, six skill-practice hours and twelve simulation hours. The CG took part in the traditional curriculum. This curriculum included two modules: emergency care and critical care with thirty-four lecture hours and two skill-practice hours (trauma).

**Results:** Perceived benefits included decreased median (interquartile ranges, IQR) seconds to start compressions [CG 32 (25-75) vs. EG 20 (18-38); p<0.001] and defibrillation [CG 204 (174-240) vs. EG 167 (162-174); p<0.001] at the end of the course, compared with compressions [CG 41 (32-49) vs. EG 42 (33-46); p>0.05] and defibrillation [CG 222 (194-254) vs. EG 221 (214-248); p>0.05] at the beginning of the course.

**Conclusion:** A simulation-based acute and intensive care nursing curriculum was created and well received by third-year nursing students and associated with improved performance in a resuscitation simulation.

**OP07-06**

**MENTORING STUDENTS IN THE CRITICAL CARE SETTING**

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**Introduction:** Teaching in the clinical setting is a demanding and complex task that many clinicians carry out without preparation. It is clear that the requirements of a clinical educator are more than just being a medical expert. The purpose of the pedagogical-oriented development project is to increase student density in critical care and assure quality of clinical education.

**Method:** To evaluate the project, qualitative focus group interviews were conducted with supervisor (n = 15) and Clinical educators (n = 3) and questionnaire to evaluate students (n=13) perception of supervisors pedagogical skills.

**Result:** The result showed that the supervisor’s perception of guidance model showed a majority of the supervisors developed way to mentor through reflection and direct feedback to clinical teaching situations. The feedback helped supervisors to reflect on their own teaching styles and to develop a broad understanding of student’s different needs to reach the goal within the clinical training. The supervisors was reported to be both more strenuous (able to take a step back) but also more inspiring (reflection to guide). The supervisors discovered themselves that they personally were not important. On the other hand, the support from the unit and co-workers were crucial for the supervision-model to function as planned. By using reflection as a tool in a learning situation it felt secure and reinforced learning for both students and supervisors.

**Conclusion:** The supervisors needs group sessions to discuss supervision, greater continuity related to the supervisor’s schedule, and a common structure for the introduction of both students and tutors. As for individual development they need individual feedback to improve their pedagogical skills.
EVALUATION OF THE EFCCNA ICU COMPETENCIES IN THE LIGHT OF LEGAL AND EDUCATIONAL FRAMEWORKS, AND ADVANCED NURSING DEVELOPMENTS IN GERMANY

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The Critical Care Working Group of the German network for APN & ANP recently conducted an evaluation of the EfCCNa Competencies for European Critical Care Nurses – German version (2014).

Aim: The aim of this presentation is to share the findings of the evaluation with a particular emphasis on current developments in Advanced Nursing Practice, and under consideration of legal and educational frameworks for intensive care nursing in Germany.

Introduction / outline: The EfCCNa Competencies for European Critical Care Nurses – German version (2014) is a standardized tool for the development of intensive care nurses’ skills. This is particularly useful for Germany, where the content of intensive care programmes can vary greatly between the sixteen counties (Bundesländer). The presentation will allude to and critically evaluate some of the aspects covered in the competency tool. Comparisons between European and German nurse education systems and with regards to Advanced Nursing Practice will be made. Aspects of the domain-specific part of the tool will be evaluated based on German intensive care nurses’ scope of practice and legal nursing frameworks.

Recommendations: Based on the evaluation, it is recommended to include sections on the country-specific context and with regards to European and local educational requirements for intensive care nurses. Some of the competencies suggested within the tool might be perceived as advanced nursing in Germany. The tool provides a sound basis for the development of fundamental, expanded and advanced Intensive care nursing skills, which could be further clarified in the document. The evaluation proved to be a valuable exercise. It highlighted the strengths and some areas for improvement. Considering current developments and local contexts is relevant to any European country for which the EfCCNa ICU Competencies exist.

PARALLEL SESSION 8  RESPIRATORY MANAGEMENT OF CRITICALLY ILL PATIENTS
No abstracts available.

ORAL PRESENTATIONS 9  ICU COMPLEX CARE

OP09-01

OLDER AGE, CO-MORBID ILLNESS AND INJURY SEVERITY AFFECT IMMEDIATE OUTCOME IN ELDERLY TRAUMA PATIENTS

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Introduction: Trauma in the elderly population is frequent and is associated with significant mortality, not only due to age, but also to complicated factors: the severity of injury, preexisting co-morbidity, and incomplete general assessment. Our primary aim was to determine whether age, Injury Severity Score (ISS) and pre-existing co-morbidities had an adverse effect on the outcome in patients aged 65 and above following blunt trauma.

Methods: We included 1027 patients ≥ 65 years old who were admitted to our Level I Trauma Center following blunt trauma. Patient’s charts were reviewed for demographics, ISS, mechanism of injury, pre-existing co-morbidities, intensive care unit and hospital length of stay, complications, and in-hospital mortality.
**Results:** The mean age of injured patients was 78.8±8.3 years (range 65 -109). The majority of patients had mild injury severity (ISS 9-14, 66.8%). Multiple co-morbidities (≥3) were found in 233 patients (22.7%). Mortality during the hospitalization stay (n=35, 3.4%) was associated with CAD, renal failure, dementia and warfarin use (p<0.05). Chronic anticoagulation treatment was recorded in 13% of patients. The addition of a single co-morbidity increased the odds of wound infection to 1.29, and sepsis to1.25. Both age and ISS increased the odds of death as 1.08 and -2.47, respectively.

**Conclusions:** Our analysis shows that age alone in elderly trauma population is not a robust measure of outcome and more valuable predictors: injury severity, preexisting co-morbidities and medications are accounted for adverse outcome. Trauma care in this population with special considerations should be tailored to meet their specific needs.

**OP09-02**

**SHARING EXCELLENCE ON SPECIFIC ASPECTS OF NURSING CARE FOR PATIENTS ON EXTRA CORPOREAL LIFE SUPPORT**

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**Aim:** Sharing excellence on specific aspects of nursing care for patients on Extra Corporeal Life Support.

**Introduction:** An increasing number of patients in the Netherlands, and most (western) European, was connected to an Extra Corporeal Life Support (ECLS) system in some phase of their treatment.

**Outline:** It was difficult to develop the knowledge and skills of the staff and the clinical management of the hospital that was necessary to treat these patients. The intensive care nurse is a vital element in the treatment of such patients. Most intensive care nurses in the Netherlands who took care of these patients, received in-house training to develop their knowledge and skills. Unfortunately, there has been no national uniformity or sharing of experience on nursing care. We were all dealing with the same challenges and, by sharing, we would be able to improve the care of the ECLS patients.

In trying to fill this gap, the University Medical Center Utrecht (UMCU) brought key speakers on this topic as well as the main industry suppliers together to develop a program for a national interactive nursing symposium to share knowledge, skills and experience. The main topics of this symposium were the basics of ECLS physiology and techniques, clinical management, specific aspects of nursing care for a patient with an ECLS system, transport of a patient with an ECLS system and interactive simulation training. It was not only sharing excellence but also learning from mistakes of others. The collaboration with the main industry suppliers was very useful in sharing specific (technical) knowledge.

**Relevance to European practice/education:** The aim of this presentation is sharing the lessons that were learned about the nursing aspects of an ECLS patient, the important knowledge and skills of the intensive care nurse and the clinical management around it.

**OP09-03**

**A CHANGING CARE ENVIRONMENT: THE SYSTEM AND NURSING-SKILL REQUIREMENTS SET BY TELE-ICU**

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**Introduction:** Tele-intensive care unit (tele-ICU) combines information and telecommunications with nursing and medicine. Intensive care nurses are core members of multidisciplinary teams providing evidence-based care. Regardless of time and place, the aim is to provide the optimum information within and between organisations in support of patient care. A tele-ICU team cannot replace a bedside one, but helps to care for and monitor the patient’s condition, improving patient safety, treatment outcomes and reducing costs. Good observation, communication and cooperation skills, and prioritising and identifying key variables among devices are paramount. Tele-ICU has long been practised in the US, but is new to Europe. Oulu University Hospital is one of five European hospitals involved in an EU project (Thalea) to define the requirements of tele-ICU, particularly new skills.

**Aim:** To establish what European ICU personnel view as the required features of tele-ICU care systems.
**Setting & participants:** Four European ICUs new to tele-ICU

**Methods:** A two-part, prospective, structured survey. The first round involved evaluating statement-content validity and the special characteristics of functions. The content was modified in the second round and the I-CVI was calculated, with 0.75 as the threshold.

**Results:** 26 respondents (nurses and physicians) from four European countries evaluated 50 statements — 36 cleared the 0.75 threshold. Real-time monitoring, alarms, an audio-visual connection and data security were deemed key factors in tele-ICU.

**Conclusions:** The outcome was a list of functions useful for creating tele-ICU systems and assessing the required skills. System reliability and monitoring compliance with treatment protocols were considered paramount, as were the involvement of nurses in system design. More information is needed on the views of remote unit staff and on tele-ICU skill needs.

**OP09-04**

**THE COMPLEX CARE FOR THE PATIENT ON THE MOVE**

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Intra-hospital transports (IHT) are potential dangerous for the critically ill patients. During this vulnerable process the patient has to rely on the transport team to detected risks and hazards and prevent them from causing harm. Therefore a comprehensive understanding of the transport process and how the team manages risks and hazards that may occur is essential to improve practice. The aim was to describe teamwork during the IHT-process of critically ill patients. This observational study was undertaken in two intensive care units at one university hospital. The first author spend three month in field (February-April, 2016). A purposive sample of transfers were observed and field notes recorded. A deductive content analysis was performed.

51 transfers were observed. A preliminary analysis shows that 17% of detected risks and hazards during the transport process could be assigned to the transport team. Members of the team were critical care nurse and unlicensed nurses. Physicians participated in 14% of the IHT. The IHT-process had three phases; preparation to the move; the transfer itself; and returning back to the ICU. Lack of communication, cooperation and unclear leadership resulted in longer transport time, mishaps or that things were not done in the most accurate way. The team often had to adjust their work due to external factors such as the overall workload in the intensive care unit or obstacles in the surrounding environment.

Despite risks and hazards the team often managed to transport the patient without the occurrence of any serious adverse events. The IHT-process is complex demanding good communication, cooperation and shared situation awareness. A deeper understanding of the transport team’s performances and the transport process will provide the foundation to develop and implement interventions that aim to improve patient safety.

**OP09-05**

**NURSING CARES IN COMBINATION OF EXTRACORPOREAL MEMBRANE OXYGENATION AND CONTINUOUS RENAL REPLACEMENT THERAPY IN CRITICALLY ILL PATIENTS**

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**Introduction:** Extracorporeal membrane oxygenation (ECMO) is used in critically ill patients presenting acute cardiac and/or pulmonary dysfunctions, who are at high risk of developing acute kidney injury and fluid overload. Continuous renal replacement therapy (CRRT) is commonly used in intensive care units (ICU) to provide renal replacement and fluid management. There is not much experience using both therapies together.

**Aim and setting:** We conducted a review of the combination of ECMO and CRRT to illustrate the methodology and nursing cares of providing both procedures together.
Method: We searched for all published reports of randomized controlled trial (RCT), quasi RCT, or other comparative study design conducted in patients undergoing ECMO plus CRRT to develop a nursing care guide to ensure a safe therapy management.

Results: The nursing care guide includes close attention to frequent procedures to patients undergoing ECMO and CRRT. The function that ensure the proper functioning of both therapies at the same time is the comprehensive control of the pressures and flows of both devices.

Conclusions: Having a nursing care guide helps us to identify the main problems associated with the maintenance of this combined therapy and increase patients security as this is not a routine therapy in our ICU.

OP09-06

DEVELOPING THE ROLE OF THE SENIOR STAFF NURSE IN CARDIORESPIRATORY ICU, TO UNDERTAKE THE ROLE OF ECMO RETRIEVAL NURSE

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In 2010 the Royal Brompton hospital in London became one of 5 designated severe acute pulmonary failure (SAPF) ECMO centres in the UK. Since 2010 ICU nursing staff have been developed to undertake advanced training in caring for both the VV and VA ECMO patient in the ICU. We have built a team of over 90 ECMO trained nurses equating to over 80% of our nursing workforce. It has become a core part of the senior staff nurse role in the ICU to be an ECMO practitioner able to care for, troubleshoot and autonomously operate the ECMO console, working within pre-set protocols and parameters set by the ECMO team. In 2015 the role of the nurse broadened out to ECMO retrieval, where a team consisting of a nurse, perfusionist and doctor would go to a referring hospital and cannulation the patient for ECMO and transfer them back to the Royal Brompton for advanced respiratory and cardiac treatment. This had taken the senior staff nurse out of the ICU and often to hospitals up to 200 miles from our ICU. We have developed a programme of training, simulation and competency based assessment to ensure the development of a group of senior staff nurses who can safely run a retrieval rota, including accepting referrals from ICU consultants from other hospitals, preparing and checking retrieval equipment, working with a team to ensure safe patient cannulation in the referring hospitals operating theatre and caring for the ECMO patient on sometimes very long road journeys to our ICU. With the broadening role of ECMO across Europe we have shown nurses are well placed to hold a key role in the development of these vital services both in and out of the ICU setting and are continuing to develop the nursing role in ECMO.

ORAL PRESENTATIONS 10 ICU NURSING WORKLOAD

OP10-01

CRITICAL CARE NURSES’ EXPERIENCES OF TEMPORARY STAFFING IN ICU

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Introduction: The shortage of nurses, especially in specialised areas such as ICUs, is described as a global problem and the use of nursing agencies as an international trend.

Aim: The aim of this study was to describe CCNs’ experiences of working with, or as temporary agency staff.

Setting and participants: This explorative qualitative study is based on interviews with five agency CCNs and five regular CCNs, a total of ten interviews, focusing on the interviewees' experiences of daily work and temporary agency staffing.

Method: The interviews were analysed manually and thematically following an inductive approach.
Results: Four themes that illustrate both similarities and differences between regular and temporary agency CCNs emerged: “working close to patients versus being responsible for everything”, “teamwork versus independence”, “both groups needed” and “opportunities and challenges”.

Conclusion: The study illustrate the complexity of the working situation for agency and regular staff in terms of the organisation and management of the temporary agency nurses, and the opportunities and challenges faced by both groups.

OP10-02

ADVERSE EVENTS RELATED TO THE SEVERITY AND NURSING WORKLOAD IN INTENSIVE CARE UNIT

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Introduction: Although adverse events are undesirable and predictable, they may occur daily in the health services. By knowing the level of severity of patients admitted in ICU and the nursing workload, nurses can improve and optimize nursing care by reducing the iatrogenic risk.

Aim: To identify the incidence of adverse events and to correlate to the severity of the patient and the nursing workload in ICUs.

Method: Prospective, longitudinal, single cohort study, conducted at the School Hospital in Clinical Hospital of Botucatu, São Paulo, Brazil. The sample consisted of all admitted to the ICU within 60 days, which remained for 24 hours, and all readmissions were excluded. Data collection comprises the registration of adverse events; the Simplifies Acute Physiology (SAPS 3); and Nursing Activities Score (NAS). The possibility of occurrence of one or more adverse events was calculated based on NAS. The study was approved by the Ethics Committee (26365014600005411). Results: A total of 138 patients were included, mean age 58.8 years, 58% male. The stay was more than four days (55.8%), and 70.2% higher. There were 166 events, 29.5% related to pressure ulcers, skin lesions 27.1%, 19.9% unplanned output feeding tube, and 9% of medication errors. The average severity was 62.6 points and the NAS was 66.8, in 800 assessments. The relationship between events and the incidence of severity of the patient was significant, and the work load was significantly inversely, showing that the higher the lower the incidence workload events.

Conclusion: The incidence of adverse events and the severity of the patient are directly related, while the nursing workload can be considered a protective factor to the patient. The evaluation of the nursing staff workload, proved capable of improving the quality of patient care.

OP10-03

NURSING WORKLOAD REQUIRED BY PATIENTS ADMITTED IN INTENSIVE CARE UNIT AFTER BRAIN OR PITUITARY TUMOR SURGERY

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Introduction: after a brain or pituitary tumor surgery, the patient needs to be admitted in the Intensive Care Unit (ICU). In the nurses perception, patients submitted of brain tumor surgery require more nursing workload on the immediate postoperative period in ICU than those admitted after pituitary tumor surgery. There are no studies in the literature that analyze this assumption.Aim: to compare patients submitted of brain or pituitary tumor surgery according to nursing workload and nursing interventions realized on the first day in ICU. Setting & participants: patients admitted in a neurological surgical ICU, with four beds, located in São Paulo, Brazil, between September/2015 and August/2016.
**Methods:** cross-sectional study. Patients were included if were aged above 18 years and admitted in ICU after brain or pituitary tumor surgery. Data collection was carried out through database analysis. The nursing workload and interventions were measured by the instrument Nursing Activities Score (NAS). The tests Pearson Qui Square, Fisher Exact and t Student were performed with significance level of 5%. Results: 176 patients were analyzed (64.8% submitted of brain tumor surgery; 54.5% female, 50.5±15.6 years). There were statistically significant differences between the groups (brain or pituitary tumor surgery patients) in relation to the following interventions: monitoring and titration (p=0.040) and specific interventions performed in ICU (p=0.017) or outside the ICU (p=0.002). The nursing workload was similar among the groups (p=0.176): brain tumor surgery patients (NAS=56.6%); pituitary tumor surgery patients (NAS=53.1%).

**Conclusions:** the nursing workload in ICU required by patients submitted of pituitary or brain tumor surgery was similar, but the interventions related to monitoring and specific interventions were different among them. The identification of the demand of care required by different neurological surgical patients helps nurses to adequate nursing care to these patients in the ICU.

OP10-04

**THE INFLUENCE OF THE TYPE OF ADMISSION ON NURSING WORKLOAD REQUIRED BY PATIENTS IN THE INTENSIVE CARE UNIT**

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**Introduction:** surgical patients require more nursing workload than those admitted in Intensive Care Unit (ICU) for clinical treatment according to nurses perception, and there are not researches about it.

**Aim:** identify if the type of admission (clinical, scheduled or unscheduled surgical) is a predictive factor of nursing workload on the first day or during hospitalization stay of patients in ICU. Setting & participants: patients admitted in ICU in São Paulo, Brazil, between May/2015 and September/2015. Methods: cross-sectional and retrospective study. Patients were included if were aged above 16 years and admitted in ICU for clinical or surgical treatment. Data collection was carried out through medical records analysis. The severity of patients was calculated by the indexes Simplified Acute Physiologic Score 3 (SAPS 3) and Logistic Organ Dysfunction System (LODS) and the nursing workload was measured through the Nursing Activities Score (NAS). Descriptive and inferential statistics were performed on data analysis; significance level was 5%. The study was approved by the Research Ethics Committee (Protocol number 1,363,959).

**Results:** among the 211 patients analyzed (56.9% male, 60.3±18.7 years), there were statistically significant differences (p<0.05) between the groups (clinical, scheduled or unscheduled surgical admission) in relation to the nursing workload required by patients and in 9 of 23 nursing interventions realized on the first 24 hours in the ICU. The predictive factors of NAS on the first day in ICU were origin and SAPS 3 and the predictive variables for NAS during ICU stay were conditions of discharge (survival or no survival) and LODS.

**Conclusions:** The type of admission was not predictive factor of nursing workload on the first day or during hospitalization of patients in ICU.

OP10-05

**VALIDATION OF A MODEL TO ESTIMATE THE NURSING WORKLOAD REQUIRED BY TRAUMA VICTIMS ON INTENSIVE CARE UNIT DISCHARGE**

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**Introduction:** it is necessary to know the nursing workload required by trauma victims on Intensive Care Unit (ICU) discharge to give information about the appropriate sizing of nursing professional staff in wards and to ensure the quality of care of these patients.
**Aim:** validate a model to estimate the nursing workload required by trauma victims on ICU discharge. Setting & participants: 180 trauma victims admitted in ICU in São Paulo, Brazil.

**Methods:** prospective cohort study conducted between 2014-2015 in three hospitals described as H2, H3 and H4. The original model was created from the analysis of 200 patients admitted to a trauma ICU (H1), and defined by the following formula: \( \text{NAS discharge} = 37.17 + 0.18 \times \text{SAPS II} + 0.19 \times \text{NISS} \), in which the Nursing Activities Score (NAS) expresses the nursing workload, the Simplified Acute Physiology Score (SAPS II) the severity of the patients, and the New Injury Severity Score (NISS) the severity of traumatic injuries. Coefficients of determination \( (r^2) \), multiple linear regression and F test were used with significance level of 5%. The research was approved by the Ethics Committee.

**Results:** sample was consisted of 180 patients (42.3 ± 19.3 years; 80.5% male). The original model showed better performance in H2 \( (r^2=3.6\%) \) than in H3 \( (r^2=2.1\%) \) and H4 \( (r^2=0.2\%) \). The adjusted models for each institution showed improvement in the coefficient of determination. A new equation adjustment \( \text{NAS discharge} = 47.16 + 0.06 \times \text{SAPS II} + 0.30 \times \text{NISS} \) from the analysis of 380 patients (four institutions) was tested in each institution and the determination coefficients from this analysis were worse than the adjusted models \( (p<0.001) \).

**Conclusion:** the SAPS II and NISS variables can be used to estimate the nursing workload required by the patient on the ICU discharge, since the coefficients of these variables are adjusted for population analyzed.

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**OP10-06**

**QUALITY OF INTENSIVE CARE IN RELATION TO NURSE/PATIENT RATIO AND CARE COMPLICATIONS**

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**Introduction:** Intensive care is one of the most resource-intensive forms of medical care due to severely ill patients. During recent years the quality of intensive care has been in focus however there is still lacking result from nursing point of view.

**Objectives:** To describe the impact of nurse/patient ratio in relation to Care burdened measurement (VTS) and optimal nursing-related result usually used indicators as mortality and complications during intensive care. **METHOD:** This is a retrospective registry study includes a survey of critical care of registry data (all patients> 15 years) receiving care in two general Level I critical care units with similar rate of admissions during 2010-2014. Data of nurse/patient ratio is collected from each unit.

**Results:** The result showed differences in specialized nurse/patient ratio of 0,5:1 to 1:1 ratio and Care burdened measurement (VTS) despite similarities in admission rate. Differences in cause of admission (surgical v.s medical) and in the amount of unexpected surgery patients were found. Differences were also found in mean time on non-invasive ventilation and in mean time on ventilator. Complications during critical care was measured by readmission and unplanned re-intubations and showed that unplanned re-intubations varied between 2.4-1.6 percent. ICU mortality showed differences with the lowest ICU mortality in the hospital with lower nurse/ patient ratio. However, 30 days mortality was lower in the hospital with higher nurse/patient ratio.

**Conclusions:** Preliminary results show differences in nurse/patient ratios and Care burdened measurement (VTS) with differences in quality measurements in general critical care units.

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**OP11-01**

**HEALTHCARE-ASSOCIATED INFECTIONS AND PATIENT SAFETY**

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Healthcare-associated infection (HAI) remains the number one complication associated with hospitalization.
Incidence and excess morbidity associated with HAI vary widely and depend on case-mix, type of infection, the causative pathogen and its antimicrobial susceptibility pattern. As such, HAI is a main topic in terms of patient safety. Yet for too long, and in contrast with for example pressure ulcers or medication errors, HAI was barely considered a patient safety issue. Patient safety typically relates to avoidable complications and in the past HAI has been considered inherently associated with critical illness. While this is not completely untrue, the overall preventable proportion of HAI is estimated to be 30%. Especially in the incidence of some device-related infections are linked with the quality of care provided. Therefore, rates of - for example central line-associated bloodstream infection - clearly can be considered as quality indicators and be given full attention in order to avoid excess morbidity. While interpreting HAI rates however, one should always bare in mind that a zero infection rate is something to aim for but hardly achievable. As such, specific circumstances of the unit and the case-mix should be taken into account when appreciating infection rates.

OP11-02

HEALTH CARE ASSOCIATED INFECTIONS AND PATIENT SAFETY

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Patient safety is threatened by health care associated infections (HClA). There are simple and low-cost tools to help prevent HClA; for example appropriate hand hygiene and protective personal equipment. These tools require staff accountability and compliance.

During the autumn of 2014 in the neurointensive care unit (NICU) at Karolinska University Hospital, Stockholm, two patients were diagnosed with having the same strain of ESBL-forming klebsiella pneumoniae. The patients were nursed in the same patient room during the same time. The Infection control and prevention center in Stockholm was contacted and identified several different problem areas;

- Basic hygiene guidelines and management
- Goods, storage and levels of cleanliness
- The soiled utility room
- Cleaning procedures
- Bronchoscope usage and maintenance

The NICU started a project that aimed to create a health care focused on infection control and prevention. Deficits in the compliance to basic hygiene guidelines were detected. The hygiene group focused on education, mainly concerning basic hygiene guidelines and management but also levels of cleanliness and cleaning procedures.

The fact that everyone involved obtained information about what was about to change and why, made the process of change easier. Everyone also had the possibility to feel involved in the project, they acquired extended knowledge and were given the chance to share their experiences.

The hygiene project has achieved:

- An extended comprehension for the importance of infection control and prevention-focused health care.
- Improved compliance to basic hygiene guidelines
- Regular, more efficient cleaning
- Checklists to control compliance to the changes made
- More thorough and safer bronchoscope handling and management
- And thus an improved patient safety.

Many patient are affected by HCIA each year which leads to significant mortality and higher costs for the health care system.

OP11-03

CONTINUOUS DAILY CLOSED CIRCLE TELEVISION (CCTV) IS A NEW MONITORING TOOL OF HAND HYGIENE HEALTHCARE WORKERS IN INTENSIVE CARE UNIT

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**Background:** Healthcare associated infections (HAIs) are major causes of patients’ morbidity and mortality, especially in intensive care units (ICUs) over the world. Healthcare workers (HCWs) hands are considered to have a leading role in patient-to-patient transmission of pathogens. We compare the standard direct observational method with the new closed circle television monitoring (CCTV) system method of HCWs’ hand hygiene compliance in our general ICU.

**Methods:** It is observational and comparative study. The study conducted by trained observers and included three arms: I) direct and overt simultaneous double appraisal observational sessions; II) covert simultaneous double appraisal observations, using CCTV, while both observers watching a remote one screen and filling separate and independent observation forms and III) overt-covert simultaneous double appraisal observations. We collected and registered observation data from both direct and CCTV methods of Healthcare workers of our GICU.

**Results:** All HCWs of our GICU were observed, including ICU register nurse, ICU staff physicians, auxiliary worker participated in present study. Overall each observer team did 50 sessions/ 500 opportunities in each arm of the study. The compliance rates when only overt observations were performed was higher than when only covert observations with a delta of approximately 10% (209/590 (35.43%) vs 130/533 (24.39%), p<0.001). Both methods of observations (overt and covert (CCTV)) demonstrated excellent reliability (ICC 0.96 (0.93-0.98) of overt and ICC - 0.81 (0.69-0.89) for covert, respectively). However, correlation between both methods was found weak in simultaneous sessions (ICC 0.40 (0.62-0.107)).

**Conclusion:** We presented a new appropriate, reliable method continuous circle television monitoring (CCTV) of hang hygiene observation. It seems that covert observations using CCTV method might get more realistic and true picture on field. There is no possibility to incorporate CCTV observation in a healthcare system mandating overt observation; hence it looks like a different method with dissimilar distributions.

**OP11-05**

**VENTILATOR ASSOCIATED PNEUMONIA NURSE-DIRECTED SELECTED PREVENTION**

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**Introduction:** Intubated patients are at high risk for development of ventilator associated pneumonia (VAP). Since VAP is associated with high morbidity and mortality, and increased duration of ventilatory support, hospitalization, and use of healthcare resources, specific prevention strategies should be implemented in every ICU.

**Aim:** This study was conducted to investigate a population of patients with VAP in order to show its characteristics and risk factors for mortality that could potentially identify the high risk mortality patients for VAP and activate directed and patient focused prevention strategies to avoid it, in order to diminish the mortality rates and the length of stay of ICU patients.

**Methods:** This study gathered data from VAP patients regarding patient’s characteristics, etiology, inflammatory response, empiric treatment, and treatment failure. Also, a mortality analysis was done and specific predictors were detected for VAP. To achieve this, an observational prospective study along 9 years, in 6 different medical and surgical ICU from a Hospital in Barcelona was done.

**Results:** 261 were included. The results showed that patients in the ICU with chronic pulmonary disease, over 62 years old, that had had recent surgery or antibiotics in the previous 90 days should be aimed for VAP prevention protocol. However, patients with VAP over 66 years old, with chronic liver disease, COPD, corticosteroids before admission to hospital, APACHE II score over 18 on admission and over 17 at pneumonia diagnosis, SOFA score over 8 at pneumonia diagnosis, and long hospital stay before the VAP episode (over 30 days) are at risk of death. Patients with previous hospital stay ≥ 5 days, and patients who had antibiotics within the last 90 days or previous surgery were found to have lower mortality rates.

**Conclusion:** Prevention bundles could be directed to these specific patients that could be activated by the nursing staff.
Aim: To discuss an educational initiative that was introduced to improve nursing students' awareness of the signs of sepsis and the importance of early intervention.

Introduction/Outline: Early diagnosis and management of sepsis are crucial for successful treatment. Unfortunately it would appear that sepsis is still not being recognised soon enough and is considered a leading cause of avoidable death. International consensus in relation to the terminology around sepsis has recently changed. Based on this, various guidelines have been issued highlighting the changes and emphasises that all healthcare staff, including students are given regular and appropriate training in identifying, assessing and managing sepsis. Given that nurses are the main healthcare professionals to carry out observations, it is essential to realise the important role that nurses have in recognising sepsis. However the literature has indicated that nurses’ knowledge of sepsis and recognition of the signs has not always been adequate. Therefore, an educational initiative was revisited that reflected recent changes and specifically focused on nursing students’ role in the recognition and treatment of patients with sepsis. A sepsis workshop was developed and introduced earlier than previously in the curriculum and provided students with an opportunity to work through a real life case scenario that focused on early recognition of sepsis, recommendations of care and monitoring for further deterioration. Evaluations highlighted that students considered that they felt the workshop broadened their awareness of sepsis and reemphasised the importance of essential nursing duties such as carrying out and interpreting observations and calling for help early. It also highlighted areas that require further reinforcement in the students’ final year.

Recommendations: Given that sepsis remains a global, life-threatening condition, it is important that nurses throughout Europe and beyond share educational initiatives in the drive to increase awareness amongst the nurses of the future.
Conclusions: Following the layout of the operative protocol, the methodology for operator intervention during the execution of the chest reopening emergency was presented. The roles of the individual operators are identified, a specific sternotomy cart for the procedure was created and prepared. It has been observed that the existence of the protocol and the creation of the dedicated cart improve the performance of the team involved.

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OP12-02

CLINICAL AND FUNCTIONAL CHANGES IN OLDER INDIVIDUALS POST TAVI

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Background: 4% of older individuals suffer from Aortic Stenosis. High risk people have the option of undergoing TAVI (Trans Catheter aortic Valve implantation) to treat this disease. This relatively new technology enables aortic valve replacement in high risk and over 70 year old population. This device is implanted subcutaneously through the femoral vessels. This procedure has been shown to be safe and effectual in this population, improving prognosis, and physical and emotional health.

Aim: to examine clinical and functional changes in older individuals one month post TAVI

Methods: Prospective During 2015, 112 post TAVI patients were contacted by telephone to complete a quality of life questionnaire (SF-36). The functional and clinical variables were compared using baseline data found in patients’ initial hospital intake to post TAVI questionnaire completion.

Results: Clinical variables - Ejection Fraction, New York Heart Association cardiac severity and 6 minute walk test all significantly improved post TAVI. The functional changes showed a mixed trend.

Conclusions: A positive relationship was found between post TAVI and clinical changes especially among women. Living in a supportive environment was found to have a positive impact on perceived patient function, as well as living at home compared to institutional living. However, the functional status stage post TAVI demonstrated that more mobility devices were needed for mobility. This study revealed patients perception of positive appropriateness for performing TAVI on the older patient.

OP12-03

EFFECTS OF NURSE-LED CLINICAL PATHWAY IN CORONARY ARTERY BYPASS GRAFT SURGERY: MORE SUCCESSFUL PATIENT OUTCOMES

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Aim: This study was aimed to develop and evaluate the effect of nurse-led CP on Coronary Artery Bypass Surgery (CABG) patient outcomes.

Background: A clinical pathway (CP) refers to the multidisciplinary care plans that are based on evidences and guidelines, and that improve the effectiveness and the quality of the patients care. This study was aimed to develop and evaluate the effect of nurse-led CP on coronary artery by-pass surgery (CABG) patient outcomes.

Setting & participants: We studied with patients hospitalized for CABG between April 2014 - November 2015. The study sample groups were included 82 patients (40 CP, 42 usual care) who accepted to participate in the study, were hospitalized in a private hospital for undergoing CABG.

Methods: The mean age was for CP group 59,8 and usual care group 62,86. %77,5 of CP group patients and %69 of usual care group were male. Before the CP application, we collected the usual care groups’ data. Nurse-led CP developed by authors was applied to the CP group during the hospitalization period and the results were compared.

Results: There were statistical differences between CP group and usual care group with regard to length of stay in intensive care unit (ICU) (38,93h vs 50,69h) and hospital (144,42h vs 162,21h). Time of extubation and removal of nasogastric tube (5,71h vs 8,64h), first oral feeding (4,72h vs 10,96h) and first mobilization (8,743h vs 22,92h) and first bowel motility (69,78h vs 85,86h) were also improved in CP group (p<0,05).
Conclusion: Nurse-led CPs improve patient outcomes as well as ICU and hospital stays and extubation with less postoperative complications. Additionally, economic benefits can be achieved as well as global expenditure and medical costs can be decreased by shortening the length of stay at the ICU and hospital.

OP12-04

THE EFFECT OF PROGRESSIVE RELAXING EXERCISES AFTER ENDOTRACHEAL EXTUBATION ON VITAL SIGNS AND ANXIETY LEVEL IN OPEN HEART SURGERY PATIENTS.

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Introduction: After open heart surgery, extubation stimulates the sympathetic nervous system and increases the release of catecholamine and results in cough and hemodynamic responses including with hypertension and tachycardia.

Aim: The purpose of this study was to examine the effects of progressive relaxation exercises after endotracheal extubation on vital signs and anxiety level in open heart surgery.

Setting and Participants: The study was carried on 30 experimental and 30 control group open heart surgery patients who met inclusion criteria in a cardiac and vascular surgery clinic of a university hospital in Istanbul.

Methods: This study was carried out as quasi experimental, pre-test and post-test with control groups. Progressive relaxation exercises which were taught before surgery began to be implemented after surgery in the intensive care unit simultaneously with endotracheal extubation. Patients’ vital signs were monitored for the first 30 minutes. Anxiety levels were measured at 30th minutes with State Anxiety Inventory. The data obtained was assessed using the NCSS (Number Cruncher Statistical System) 2007 and PASS (Power Analysis and Sample Size) 2008 Statistical Software (Utah, USA) program.

Results: The majority of patients (%66,6) had had coroner artery bypass graft, the mean age of the patients was 55,00±17,51 (20-82) years, %21,7 were female, %40 were primary school graduate, %81,7 (n=49) had a chronic disease. There were no significant differences in sociodemographic and illness characteristics on experimental and control groups (p>0,05). The lower rates were determined by heart beat, respiration, arterial blood pressure and anxiety on the experimental group in all measurement (first 30 minutes times after endotracheal extubation), and there were significant differences in experimental and control groups that be in experimental groups favor (p<0,05).

Conclusions: The study showed that relaxing technique after endotracheal extubation in open heart surgery patients were effective in vital signs and anxiety level.

OP12-05

NURSES’ EXPERIENCES WITH INITIATING AND RESPONDING TO PATIENTS’ CUES AND CONCERNS IN POSTOPERATIVE CARE UNIT - AN INTERVENTION STUDY.

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Introduction: Postoperative care requires good communications skills from the nurses. The nurses do not always communicate in a way that detects the patients’ cues and concerns.

Aim: To evaluate nurses’ initiating and responding to patients’ cues and concerns before and after an intervention and to describe the nurses’ experiences with the communication model.

Setting & participants: All participants attended a one-day communication course based upon simulation-learning method. The intervention was learning confirming communication skills and a communication model developed for postoperative setting. The study involved 19 critical care nurses and nurses from postoperative care units in Norway.
Methods: The design of the study was quasi-experimental “one-group pre- and post-test” and qualitative descriptive. The study was approved by the Regional committee for Research Ethics in Norway and by the “Personvernombud”. The data consisted of 38 video-recordings of simulated “nurse-patient dialogues”, from pre-test and post-test and 19 audio recordings from individually interviews after post-test. The video-recordings were coded with the “Verona Coding Definitions of Emotional Sequences”. The audio-recordings were analysed with inductive qualitative manifest content analysis.

Results: The study identified that nurses initiated significantly more cues and concerns post-test. Nurses reduced significantly the use of the response “reduced room” at post-test. Three manifest categories emerged: Quality improvement in dialogue with the patient; Experiences in lack of competence; Contribution to own management and competence development.

Conclusions: The communication course learned through simulation-learning method offer a promising method to enhance initiating and responding to patients’ cues and concerns. A one-day course may not be enough and further communication training may be needed. Nurses experienced the model as suitable, but challenging. Further studies are needed with greater range to enhance the transferability.

OP12.06

URINARY RETENTION - OUR RESPONSIBILITY! OBSERVATIONS AND ACTIONS IN PERIOPERATIVE CARE

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Background: The Post-operative Unit at the University Hospital of North Norway has over time treated several deviations from normal urinary retention in surgical patients. Contact with other hospitals shows similar challenges. In one 14-day period, 82 patients were studied according to specific criteria. Findings showed that 17% had >400 ml of urine in the bladder, including some with almost 1000 ml. This revealed a need for a critical review of perioperative care, to develop an evidence-based clinical procedure to prevent perioperative urinary retention.

Method: The Unit advocated further work by a multidisciplinary project group with management support. The improvement model in the patient safety programme was chosen as a tool. The Norwegian Knowledge Centre template for the design of clinical procedures was utilised.

Results: Using a literature review and consensus among local professionals, the risk factors and definition of urinary retention were defined. A local procedure covering the entire perioperative period was designed and implemented, which would apply to the whole University Hospital Trust. The procedure was reported to the National Network for Clinical Procedures.

Discussion: The literature review revealed variation from 400 to 600 ml in the definition of a full bladder. The local consensus set a 500 ml limit for indicated catheterisation. An adjusted limit for intervention and updated knowledge of risk factors required changes in practice. The procedure defines responsibilities and control to prevent full bladder in surgical patients. A bladder scanner is a key aspect.

The preparation of the procedure presented challenges in implementation. Safe implementation requires good planning, information, education and monitoring. The teaching focused on the background and objective.

Conclusion: A procedure focusing on care pathways ensures that the surgical patient suffers no negative effects of urinary retention. To implement a general procedure at the organisational level requires a systematic and structured approach.
OP13-01

DIFFERENCES IN PERCEPTIONS, AMONG CAREGIVERS WORKING AT THE BEDSIDE, OF THE RISKS OF THE REHABILITATION PROCEDURES

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Introduction: In intubated patients early mobilization reduces the incidence of ICU acquired weakness but also mechanical ventilation duration and length of stay in the ICU. Even if a relative consensus about the definition of early mobilization has emerged, there is no consensus about the safety criteria required to initiate the rehabilitation process in these patients. This is probably partly due to very different perceptions, among the various caregivers, of the risks of the rehabilitation procedures.

Aim: The aim of the study was to compare what the different professionals of the ICU consider as contra-indications to perform rehabilitation in mechanically ventilated patients.

Setting & participants: Practically, as a preliminary part of a multicenter interventional study on early mobilization, a questionnaire was sent to the referent nurse, physiotherapist and physician of each participating center.

Methods: Each professional was asked to define whether passive or active mobilization, inside or outside the bed, could safely be performed in different clinical situations. Each participant was asked to answer “No” if the mobilization was contraindicated in the described situation and “Yes” if the mobilization was possible.

Results: 51 questionnaires were analyzed (17 nurses, 17 physiotherapists and 17 physicians). Certain clinical situations have led to consensus in favor of the mobilization some against mobilization but almost half of clinical situations generated disagreements.

Conclusion: Passive mobilization is considered as safe and possible by all the professionals in the majority of the proposed situations. Oppositely, when active mobilization outside the bed is considered, major differences in perception of safety emerged within the various healthcare professionals. In particular, we noticed that the physiotherapists were less afraid by poor respiratory conditions than nurses and doctors. Otherwise, the presence of a catheter in femoral position was mainly considered as a contra-indication of mobilization outside the bed by the nurses.

OP13-02

THE EVALUATION OF ‘BALANCE-TRAINING’; A NEW METHOD IN THE AFTERCARE OF INTENSIVE CARE PATIENTS

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The long run physical, cognitive and emotional consequences of admission to an intensive care unit (ICU) are well-known. However, the ongoing debate on the best practices supporting the former ICU patients and their relatives for these consequences, is still inconclusive. A new method, ‘Balance-training’, has been developed to stimulate the regaining of emotional and physical capability. The course included psycho-education, mindfulness exercises, and peer support during a 10-week program, including daily homework.
The study aim was to explore the experiences of trainees on both the intake questionnaire and the program of Balance-training.

Eight former ICU patients in a central region of the Netherlands, voluntarily participated in the study. They started their Balance-training in January or March 2016, with the same coaches and outline of the course. The design of the study was qualitative. The semi-structured interviews were audiotaped, transcribed, and fragmented until the point of saturation. Open, axial, and selective coding were used to analyze the results. Most of the respondents evaluated the questionnaire as suitable. One respondent needed much focusing and time to answer the questions, others found it easy to finish in a range of 10 to 30 minutes. The questionnaire triggered unwelcome memories of the ICU in one respondent.

The respondents assessed the day, duration, and location of the course as positive, with all relevant topics included in the outline. An ideal composition of six to eight participants per course contributed to an excellent atmosphere, which offered the possibility to learn and grow from their own experiences. Most effective were the mindfulness exercises, which established awareness of a persons’ emotional state, and peer support.

The Balance-training showed preliminary positive results as a new method in the aftercare of ICU patients and offered support and tools to take care of one’s own emotional and physical balance in life.

OP13-03

SALIENT BELIEFS REGARDING PHYSICAL RESTRAINT USE AT INTENSIVE CARE UNITS: AN ELICITATION STUDY FROM THE THEORY OF PLANNED BEHAVIOUR

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Background: Critical care nurses’ intention to use physical restraint (PR) varies across countries. According to the theory of planned behaviour (TPB), behavioural, normative and control beliefs may influence indirectly attitudes, subjective norm and perceived behavioural control, constructs which in turn, could affect intention and behaviour.

Aim: To identify the salient behavioural, normative and control beliefs underlying critical care nurses’ intention to use physical restraint at the intensive care units (ICU).

Setting & participants: Four medical-surgical adult ICU (two tertiary university-affiliated hospitals and one community hospital) from Spain. Twenty-five critical care nurses were purposively sampled across sex, ICU experience and work shift.

Methods: Qualitative descriptive type elicitation study. A postal questionnaire was distributed. Data were obtained individually in a free qualitative response format by means of nine open-ended questions based on the beliefs categories of the TPB between July and September 2016. The TPB was used to guide both the structure of the questionnaire and the content analysis. Content analysis was done by two independent researchers. Ethical approval was obtained.

Results: Nurses reported the main advantage to use PR was to guarantee both patient and professional safety specially when reducing sedatives, and although recognised the real physical and psychological injuries associated to their use, they didn’t report any ethical conflict. They felt other nursing colleagues, medical staff and relatives approved their decision, as an ordinary practice while nurses who tried to change this practice felt under pressure and unprotected. Finally, control beliefs were linked with patients’ characteristics, analgo-sedation policies and work organization.

Conclusions: This study highlights the indirect salient beliefs which could influence critical care nurses’ intention to use PR at the ICU. The findings provide a deeper understanding of this issue and have implications for administrators and researchers involved in promoting programmes of PR minimization in Spanish critical care units.
EARLY AND ACTIVE MOBILISATION OF CRITICALLY ILL PATIENTS IN INTENSIVE CARE UNIT

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Introduction
Literature shows that early mobilisation in the ICU is important. 

Aim: To change the way ICU patients are mobilised from mostly passive to using their own strength more actively.

Settings and participants: A Danish 14-bed secondary ICU. All ICU patients ≥ 18 years and ICU-stay > 24 hours were included.


Results: The study included 116 patients at baseline, 133 at follow-up. Total number of registrations was 627 at baseline and 613 at follow-up, with a median of 5 registrations per patient. The baseline and follow-up groups were similar in regard to age, gender, APACHEII-, SAPSII- and SOFA-scores and length of ICU-stay. Time on ventilator was longest for baseline-patients (medians 3.9 and 2.3 days, p=0.03). In 84% of registrations, patients were mobilised once, in 53% twice and in 17% three times a day (similar at baseline and follow-up). For both time-periods, 78-90% of patients were mobilised to a chair. In the baseline-group, a lift was used for 52% of the patients compared to 29% in the follow-up group (p=0.001). In the follow-up group, 40-44% of the patients had also been sitting on the bedside (balance training) compared to 17-26% in the baseline group. In the follow-up group, 43-56% of the patients had been standing and 29-39% had been walking (on the spot) during mobilisation compared to 20-30% and 15-21%, respectively for the baseline group. Cycling (bed or chair) was used in 5-20% of the registrations for the follow-up group and in 4-15% of the baseline group registrations. Hand weights were used in 1-6% of all registrations.

Conclusion: Mobilisation has shifted from being mainly passive using lifts to a more active mobilisation.

FIXATION AND MOBILIZATION OF THE INTENSIVE CARE PATIENT FROM A COMPLETELY DIFFERENT PERSPECTIVE

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Aim: This study was designed to introduce a novel approach to decrease fixation and improve mobilization of ICU patients.

Aim of the presentation: The aim of the presentation is to share knowledge on management of fixation and mobilization of ICU patients.

Introduction: Despite well-known negative consequences such as hypertension, tachycardia, worsening agitation, delirium and pressure ulcers, fixation of ICU patients is still daily practice in many ICUs. Uncooperative and delirious patients are fixated because medical staff is anxious to avoid auto-extubation and to prevent patients from falling out of bed. Fixation interferes with early mobilization, known to have positive results such as earlier ICU and hospital discharge, earlier liberation from the ventilator, better independent functional status, decreasing re-admission and mortality. In practice we found that mobilization was considered to be a task extension rather than part of daily care routine. Unfortunately the implementation of new protocols amongst medical staff has been shown to be extremely difficult, even if the importance and evidence based success of the novel therapy has been demonstrated. Therefore, we developed and successfully introduced an educational film to teach the importance of less fixation and more mobilization of ICU patients. “Focus on fixation and mobilization” was well received by nurses, physical therapists, ICU doctors and management. Furthermore this film established an awareness of the important combination of medical treatment and personal approach to patients among our medical staff.

Recommendations: The educational film offers EFCCNA nurses useful tips on fixation and mobilization and makes a contribution to improving patient feelings and outcome.
OP13-06

PATIENTS EXPERIENCE OF IN BED-CYCLING’ IN ICU

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Introduction: Active mobilization with ‘in bed-cycling’ for patients in Intensive Care Unit is known as positive for patients’ physical rehabilitation. Early mobilization may reduce the weakness that occurs rapidly during the first week of critical illness. There is no significant risk with this active mobilization but patient’s condition often restrict that patients can participate in an active way. Patients’ experiences and participation is important for a better outcome but patients’ experience of active mobilization is rarely investigated.

The aim was to explore patients’ experience of in bed-cycling in ICU

Settings and participants: Two ICUs with ‘in bed-cycling’ as an intervention of active mobilization participate in the study and 14 former ICU patients from these units were invited to an interview 2-4 month post ICU stay. Thematic analysis was used.

Result: Result showed that 13/14 participants had mechanical ventilation and suffered from circulatory and respiratory failure or sepsis in ICU. About half was female, all with an age of 33-77 year. Eight participants remembered the ‘in bed-cycling’. All of them found it as a positive experience which gave them energy, hope and pleasure. They felt they participate in their rehabilitation with self-control and being part of the decision of in bed-cycling or not. To take the risk of doing ‘in bed-cycling’ and to be safe that nothing goes wrong was important for participants.

Conclusion: ‘In bed-cycling’ was overall a positive experience for those who remember it. It gave a feeling of hope and self-control with patient participation in care.

ORAL PRESENTATIONS 14 PSYCHOLOGICAL CARE

OP14-01

ASSOCIATION BETWEEN POST TRAUMATIC STRESS SYMPTOMS AND SENSE OF COHERENCE IN INTENSIVE CARE UNIT PATIENTS

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Introduction: Posttraumatic stress symptoms (PTSS) following intensive care treatment are frequent. In accident victims strong sence of coherence (SOC) has previously been associated with less PTSS. To our knowledge no study has investigated the association between PTSS and SOC in a mixed intensive care unit (ICU) population.

Aim: To examine the prevalence of PTSS after ICU stay, and the relationship between PTSS, SOC and demographic and clinical characteristics in ICU patients.

Setting and participants: Patients ≥18 years treated in two ICUs at Oslo University Hospital Ullevål for ≥24 hours were consecutively included during one year (2014-2015).

Methods: We did a cross sectional study and measured PTS symptoms and SOC at the ward after ICU discharge with Post Traumatic Stress Scale 10 Intensive care screen (PTSS10-I) and Sense of Coherence Scale 12 (SOC-12). Demographic and clinical data were collected. PTSS-10-I scores ≥35 was used as cut off value indicating clinical significant PTSS. Descriptive and multivariate logistic regressions analysis was performed with IBM SPSS statistics 21.

Results: We included 133 patients with mean age 54 (±17 SD) and 56 % being male, of whom 37% were trauma patients and 54 % receiving ventilator treatment. Prevalence rate of defined PTSS was 25%. Demographic and clinical variables were investigated for association with PTSS and variables with a p value < 0.1 were included in the multivariate logistic regression analysis. Adjusting for gender and age, only SOC (OR 0.91, [95%CI: 0.87-0.95]) and ventilator treatment (OR 4.98, [95%CI: 1.67-14.83]) were significantly associated with PTSS symptoms. The Regional Ethics Committee and the Data Inspectorate approved the study.
Conclusion: In our study population low SOC and ventilator treatment was associated with clinical significant PTSS in patients after discharge from the ICU.

OP14-02

SHOCK AND IGNORANCE: IMAGES OF ACUTE CRITICAL ILLNESS IN DIARIES BY CLOSE FAMILY OF PATIENTS SUFFERING NECROTIZING FASCIITIS

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Introduction: The study was a part of a larger investigation into the human cost of necrotizing fasciitis to improve patient and family care in the intensive care unit (ICU). Necrotizing fasciitis is a severe necrotizing soft tissue infection (NSTI) that progresses in the matter of hours requiring immediate diagnosis and treatment to save lives and limbs.

Aim: The aim was to explore the lived experience of close family members during the patient’s acute stage of necrotizing fasciitis. What do family members experience, and what do they need?

Setting and participants: Participants were family members (n=17) of NSTI-patients at three specialized hospitals in Denmark and Sweden. Family was spouse, partner, relation, or friend. Mean patient age 62 (34-92), and mean ICU stay 6 days (1-12).

Methods: The study had a qualitative explorative design using diaries written by close family members in 2016. Qualitative content analysis and inductive coding were supported by NVivo. Investigator triangulation and patient and public involvement were used throughout the study. Ethical approval was met in Denmark and Sweden.

Results: Three main categories emerged: 1) Trajectory, 2) Treatment, and 3) Patient & Family. The first category described a model for the typical trajectory. The second focused on informational needs, and the third identified issues of importance to the close family. Main themes: Being close to the patient, Being worst for the family, Fearing relapse, Network and travel, and Existential reflection.

Conclusion: Necrotizing fasciitis came as a shock to close family members who were unable to sleep due to ignorance, fear and lack of information. Treatment was offered far from home requiring close family to travel. Spouses needed to remain with the patient and worried how the children would cope. We recommend the provision of systematic information during the acute stage, including what to expect.

OP14-03

WHAT DO ICU PATIENTS RATE AS MOST IMPORTANT - AND HOW IS THIS MET? RESULT FROM AN EMPOWERMENT QUESTIONNAIRE STUDY

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Introduction: It is well-known that intensive care patients often experience dependency and powerlessness. There are also some knowledge about what ICU patients experience as strengthening and empowering, but we do not know how patients rate the importance of those issues.

Aim: The aim of this study was to explore what patients evaluate as being of the greatest importance respectively less important when being cared for in the ICU. The aim was also to examine the extent to which those topics were met.

Methods: A survey study was conducted in three ICUs in southern Sweden. Analysis was based on 266 answers from patients who had been cared for ≥48 hours in the ICU. Patients were asked to rate the importance of 37 items together with an evaluation of how often this was met, during their stay at ICU. Permission was obtained from Regional Ethical Board.
**Results:** Percentage of the judgment “of the greatest importance” ranged from 28-69% regarding different items. Overall, more patients rated items related to relationships and caring atmosphere as being of the greatest importance, than items related to physical help and support. Pain relief was also highly ranked. When patients were asked to rate how often they considered each item as met, percentage of the answer “always” varied between 18-75%. Biggest difference between importance and experience was detected regarding “help to look forward”. Interesting dissimilarities were also found concerning “have trust in staff”, “strengthen life spirit”, “encourage to fight”, “information understandable” and “have influence”.

**Conclusion:** Result show that Swedish ICU patients get their physical needs quite well met, also pain relief, but they lack staff support in getting their life spirit strengthen. There is also a need to get information more understandable, which in turn is a prerequisite for patients being able to have any influence on care.

**OP14-04**

**DOING IT MY WAY; INTENSIVE CARE UNIT (ICU) PATIENTS' EXPERIENCES OF THEIR ICU STAY AND RECOVERY PERIOD.**

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**Introduction:** The recovery period for ICU patients is often prolonged and suboptimal. Some of the complications include weakness, fatigue, shortness of breath, reduced mobility, loss of appetite, impaired memory, poor concentration, nightmares, hallucinations and flashbacks. Internationally ICU-staff offer various types of intensive aftercare. ICU after care services are not standard clinical practice in Norway. We designed an aftercare information-pamphlet for patients and families.

**Aim:** To investigate how adult ICU patients experienced the ICU stay, the recovery period and the usefulness of aftercare information-pamphlet.

**Setting and participants:** Twenty nine former ICU patients were included.

**Method:** Qualitative approach conducting interviews just after discharge from ICU and 3-4 months after. The data were transcribed and analyzed by means of qualitative content analysis.

**Results:** One main theme: “Doing it my way” and two subthemes emerged: “Being on an unreal, strange journey” and “Balancing between who I was and who I am”. Patients’ recollections from their ICU stay showed great differences, underlining the importance of ICU nurses’ ability to see and value individuality. Individualized recovery processes were described.

**Conclusion:** Patients’ recollections from their ICU stay showed great differences. Some perceived moving from ICU as scary while others described a sense of victory. Some highlighted the importance of diaries and pictures from the ICU stay, others had no need for filling gaps in their memory and focused on future only. A majority experienced fatigue, muscle weakness and slow rehabilitation. Most patients experienced a psychological improvement three months post-ICU. They felt unprepared for the rehabilitation period and valued the aftercare information-pamphlet. ICU nurses must see, value and meet individual needs. The importance of understanding and being understood was highlighted. There is a need for individualized recovery processes. They underlined the importance of the take-home aftercare information pamphlet.

**OP14-05**

**MULTIPLE SYMPTOMS IN FAMILY CAREGIVERS OF INTENSIVE CARE PATIENTS**

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**Introduction:** Family caregivers (FC) of intensive care unit (ICU) patient experience symptoms that threaten their quality of life. Common symptoms are anxiety, depression and post-traumatic stress. Previous studies have primarily assessed single symptoms, and little is known about multiple symptoms and how they impact on each other. Most research has been done on the occurrence of symptoms, and less about how severe and distressful they are experienced to be.

**Aim:** Describe occurrence, severity and distress of multiple symptoms in FC’s of ICU patients and identify associated background characteristics.
Setting & participants: FC’s were included when the patients were admitted to the ICU at Oslo University Hospital.

Methods: Cross-sectional study approved by the Regional Ethical Review Committee. FC’s symptoms were assessed using Memorial Symptom Assessment Scale (yes, no). Severity and distress were registered on a scale from 0 – 10, were 10 were most severe or distressful. General linear model was used to assess the impact of background variables on number of symptoms.

Results: Mean age of the FC’s (N=211) were 49 years (SD 14.3), and 68 % were women. Mean occurrence of number of symptoms were 9 (SD 5) ranging from 0 to 24. The most prevalent symptoms were “worrying”, “feeling sad”, “difficulty sleeping”, “difficulty concentrating”, “lack of energy” and “feeling nervous”. Mean single symptom severity score ranged from 2.3 (SD 2.7) to 7.2 (SD 2.4) and mean distress score ranged from 2.2 (SD 3.1) to 5.9 (SD 3.1). The most severe and distressful symptom were “worrying”. Higher age, increased number of comorbidities, higher education and being a spouse was associated with higher number of symptoms.

Conclusion: FC’s had a symptom burden that is comparable to cancer patients. The most vulnerable groups of FCs must be identified and the FCs with high symptom burden needs careful attention.

OP14-06

USING INTERVENTION MAPPING TO DEVELOP A DISCHARGE PROTOCOL IN THE INTENSIVE CARE; NEEDS ASSESSMENT INVOLVING THREE PERSPECTIVES.

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Admission into an intensive care unit (ICU) might lead to long run physical, cognitive, and emotional consequences for patients and relatives. The care of the critically ill patient does not end upon ICU discharge; therefore, integrated and ongoing care reducing the emotional impact of ICU admission is pivotal. This study provides insights into ICU discharge problems and their underlying causes in daily practice from the perspective of ICU nurses, general ward nurses, and former ICU patients. Aiming to develop an intervention that is robust, effective and useful in practice because grounded on theoretical and empirical evidence.

This qualitative study was conducted among 42 ICU nurses, 12 general ward nurses, and 4 former ICU patients. We conducted a needs assessment of discharge practices according the first step of Intervention Mapping to provide a framework for effective decision making. Nurses reflected on three composed vignettes describing discharge procedures in five roundtable meetings, which were conducted separately for the ICU and general ward. Additionally, former ICU patients were questioned in semi-structured interviews by telephone. This needs assessment was framed by literature study.

ICU nurses reported various benefits and barriers regarding the vignettes. For example time and logistic constraints, patient (dis)comfort and the responsibility of less monitoring prior to discharge, informal versus structured preparation of the patient, additional written material, and involving relatives. Writing a lay summary faced overwhelming doubts, for example insufficient skills, not knowing the patient well enough, and expected juridical consequences. General ward nurses emphasized an improvement of the written transfer document. They also acknowledged a lack of knowledge on the consequences of ICU admission. Former ICU patients and relatives underlined the relevance of effective discharge information and supportive written material.

The needs assessment provided insights from three different groups of users to develop a suitable evidence-based protocol improving ICU discharge.
OP15-01

REMEDIES FOR CULTURAL DIVERSITY: PERCEPTION OF CRITICAL CARE NURSES' IN TURKEY

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Beliefs and behaviors are related to health and illness. Culture has many components and the health care beliefs are affected by cultural influences. The increasing number of patients have been living in and also coming to Turkey for healthcare services especially Syrian refugees has brought different cultural values, beliefs, behaviors and attitudes that were greatly differ from Turkish healthcare providers. Majority of health care professionals only speak Turkish. Cultural considerations became very important in the healthcare system as well as for intensive care nurses. This study aimed to figure out the perception of the critical care nurses when caring for patients from different cultures. Ten ICU nurses were interviewed from a government and a private hospital. Each group had 5 ICU nurses. This study was design as a qualitative study and two focus groups conducted by researches. Semi structured approached was used during focus groups. All the participants indicated that interpreters were not qualified to translate medical terminology. Due to their lack of experience patients and their families often did not understand seriousness of their condition. Language barrier generally occurred when interpreters were not present. Nurses stated that they felt desperate because they did not understand his/her patients’ needs correctly. They used gestures and a few simple words, in the manner of Tarzan and Jane. They also stated that their workload increased when they tried to communicate with patients who did not speak Turkish or had a different cultural background other than theirs. Misunderstanding occurred when defining the patients’ and family members’ needs that led to frustration between patients and healthcare professionals. As a result need for structured checklists and guidelines in Turkish have emerged to assess cultural differences in critical care unit and interpreters need to learn medical terminology.

OP15-02

PROVIDING PATIENT AND FAMILY CENTERED CARE FOR THE CRITICALLY-ILL LESBIAN, GAY, BISEXUAL AND TRANSGENDERED (LGBT) PATIENT

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The notion of “Patient and Family-Centered Care” in the Intensive Care Unit is hardly a new concept; however, we live and practice in an environment where the definition of “family” continues to evolve. This requires clinicians to evaluate their practice to ensure an environment of trust, respect, and dignity is maintained for the LGBT patient and his or her loved ones. The Intensive Care Unit (ICU) has historically served as a battle ground for same sex couples in the fight for visitation and surrogate decision making. While great strides have been made worldwide in awarding this population many of the same rights granted to heterosexual couples, the ICU can be a daunting place for the critically-ill patient and his or her family members. The purpose of this proposed interactive workshop is to offer ICU clinicians tools to provide their LGBT patients in the a positive experience. The importance of non-verbal cues of LGBT inclusivity, considerations in medical history taking, and the concept of the “preferred pronoun” and “gender neutral language” will be discussed. Additionally, a series of case presentations surrounding the unique medical needs of the critically ill LGBT patient will guide discussions on HIV, Trans-Care, and suicide as they pertain to the ICU clinician.
OP15-03

TREATING CIVILIAN CASUALTIES OF WAR FROM AN ADVERSARY COUNTRY - FINDING HEART AND SOUL IN ICU

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**Background:** In 2013 the government of Israel decided to permit the Naharia Galil Hospital the support to treat Syrian wounded. These wounded are transported by the Israeli Army Corps back and forth over the borders, frequently alone with no family accompaniment, including children. The medical personnel in the hospital have no previous or background information about the Syrian wounded. Most of the wounded arrive with festering medical complexities including multi-organ injuries. This medical facility is the only institution in the region with neurosurgical capabilities, therefore the most complicated injured are treated here. Nursing supervisors are managing and organizing these injured. Currently, nurse supervisors are the leaders using their clinical judgment, administrative capabilities, and holistic perspective taking charge of the Syrian wounded.

**Results:** Since 2013, this medical facility has treated over 1000 Syrian wounded. Range of ages from 15-29, 95% male, 30% children. Wound characteristics include- 29% fatal, 22% severe, 30% moderate, 19% mildly injured; 10% of these die. The nurse supervisor is responsible for all professional and administrative decisions in the hospital during evening and night shifts weekends and holidays. During these past 3 years the supervisors’ job has broadened to include accompanying Syrian wounded, assuring emotional support, human resource management during shifts, communication and culturally barriers and organizing definitive treatment.

**Conclusion:** The Syrian civil war has worldwide implications. The wounded population of Syria continually needs support and medical treatment. More and more civilians cross the borders from their bleeding country into Israeli shelter hospitals. As relationships deepen and the wounded return to their country it is believed that every healed Syrian transport messages of caring between the 2 countries- nurses can be ambassadors of peace.

OP15-04

ORGAN DONATION IN MONTENEGRO

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We believe that the obstacles regarding organ donation in Montenegro numerous prejudices. Most of those who are against such form of treatment emphasize the fear of abuse, the desecration of the body. Most of those who are against this type of treatment emphasize the fear of abuse, the desecration of the body. In Montenegro is still in effect an information agreement that prevents a potential organ donor explantation regardless of his possession of donor cards, because how many close relatives does not allow organ explantation there is no legal aid to proceed with organ donation to a patient who is on the waiting list, regardless of what they match all the legal, medical and ethical conditions for cadaveric organ transplants. From September 2012, Montenegro has bequeathed their bodies through a donor card only 300 citizens, which is an extremely low figure to the total number of adult population in the country. The proposal on the presumed consent for organ donation came in a parliamentary debate in 2014, but was not adopted by the deputies who showed great animosity on the issue of organ donation. These data correlate with only one has been done cadaveric kidney transplantation 8.12.2013, and only 24 live related kidney transplant within three years from when it entered into force on the legacy of authority by donor cards. Our research shows that the highest percentage of both test groups, ie. health workers and the general population share the opinion that it should be effective legislation to regulate organ donation, however, is considerably higher percentage of respondents from the general population who said they do not know whether there is a need for this legislation.
01

NEED FOR SPECIALISED CRITICAL CARE IN THE UNIVERSITY HOSPITAL OF OULU: A POINT PREVALENCE STUDY

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Ward patients with organ dysfunctions create an imbalance between the need for care and resources, and the knowledge and skills required. Risk scores and rapid response teams have been implemented to assist with early recognition and treatment decisions.

To generate information on the need for critical care and patient care intensity in somatic wards and recovery rooms at Oulu University Hospital (OUH).

Cross-sectional point prevalence study. The following data was collected from every adult ward and recovery room between 3 pm and 9 pm on a single day: demographics, physical vital sign measurements based on NEWS scoring and the nursing intensity grade (I-V) calculated using an Oulu Patient Classification (OPCQ) -patient care intensity instrument. The OPCQ grade is the sum of six evaluations, each from different nursing sectors. Grades IV-V represent the highest nursing intensities. The validity of the care facilities was evaluated based on this information. Nurses also assessed the care facility’s validity.

441 patients were assessed. 385 patients without treatment restrictions were included in the analysis. Of these, 109 (28%) were grade IV or V patients as measured by the OPCQ instrument. 9 (2%) patients showed signs of acute organ dysfunction (NEWS > 5) and 7 should have been transferred to a critical care unit. The nurses considered the ward resources insufficient for caring for 10 (2.6%) of the patients. However, none had acute organ dysfunctions and only 3 were categorised as grade IV or V.

The OPCQ scale used by the wards did not reflect the need for critical care based on the severity of organ dysfunctions. Calculating the NEWS would ease decisions about calling for further assistance. The MET system has been implemented in OUH since the study.

02

THE DEVELOPMENT OF AN ENTERAL FEEDING ALGORITHM TO IMPROVE THE DELIVERY OF NUTRITION TO CRITICALLY ILL PATIENTS

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This presentation aims to demonstrate how this particular unit responded to the poor performance outcome the 2013 international nutrition survey: Improving the provision of nutritional therapies to the critically ill: an international quality improvement project. The key recommendations from this survey were early initiation of enteral feed (24-48 hours) and application of strategies to optimise the delivery of enteral feed.

It is well recognised that critically ill patients are at risk of malnutrition due to their hyper catabolic state. They often require nutritional therapies to meet their catabolic demand. Poor nutrition can have poor outcomes for the patient, such as poor wound healing, poor immune function, reduced respiratory drive and an increase length of stay in hospital.

Within this unit there was no established protocol, there was a variety of practices amongst staff with regards to the delivery of enteral feed. In addition there had been no dietician involvement.

This presentation demonstrates why a multidisciplinary nutrition group was established. It highlights the main results from the nutritional survey and its key recommendations. The algorithm that was designed by the group is presented. In addition the presentation demonstrates how the algorithm was implemented and what the outcomes following the implementation of this algorithm. Finally it explains why there is a need for further data collection.
Critical care is always evolving and therefore it is essential that the care we provide is supported by evidence. This presentation highlights the importance of nutrition in the critically ill on a local and international basis. It is imperative that as practitioners we deliver safe and effective nutrition to this group of patients to ensure the best possible outcomes.

03

A NUTRITIONAL ALGORITHM FOR PATIENTS WITH ACUTE COPD EXACERBATIONS IN NEED OF NON-INVASIVE VENTILATION

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We have experienced through our clinical practice that there are varying kinds of nutrition that COPD patients recive, and therefore saw the need for quality improvement in the clinic. We decided to write a Master’s Thesis where the objective was to develop an algorithm that would help to assess nutritional risk, prevent and treat malnutrition in patients hospitalized with COPD exacerbations receiving non-invasive ventilation (NIV).

The Norwegian directorate of health’s guideline methodology, a guide for the development of evidence-based guidelines, which involves AGREE II and GRADE was used in the preparation of our guideline. Demings circle is a basis model for quality assurance which we used during the process.

We have created an evidence-based nutrition algorithm to COPD patients in exacerbation receiving NIV. The recommendations are based on systematic evaluation and grading of the documentation. There is much research on nutrition and nutrition for COPD patients, however there is little research specifically related to nutrition for patients receiving NIV. We have therefore compiled the knowledge in our algorithm. The algorithm involves the use of Nutritional Risk Screening 2002 and provides recommendations for oral nutrition supplements, enteral- and parenteral nutrition. The important role of the intensive care nurses regarding facilitation and administration of nutrition therapy are emphasized.

Through a systematic search for guidelines and relevant research, we found that there was a need for an algorithm regarding nutrition in COPD exacerbated patients receiving NIV. To prepare an algorithm falls under quality assurance and is therefore part of the intensive care nurse’s role in research and development. Patients with COPD exacerbation receiving NIV need special preparation and planning of nutrition, and an algorithm may be of assistance to ensure good practice.

04

THE ROLE OF THE EXTRACORPOREAL MEMBRANE OXYGENATION IN CARDIAC ARREST; A REVIEW

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The extracorporeal membrane oxygenation (ECMO) is a technique, which provides cardiac and ventilatory support to patients whose heart and lung are severely damaged, and consequently, they cannot develop their normal function. It is intended to know the current evidences about the use of the ECMO on situations of cardiac arrest (CA) during the performance of cardiopulmonary resuscitation manoeuvres (CPR).

Several uses of ECMO on the context of CA and CPR were found. Some examples are the improvement of the neurological outcomes in refractory CA patients or the increment of the survival rates during CA. Moreover, it seems to provide a better prognosis on several clinical scenarios such as the complications of the acute coronary syndrome. The implementation of ECMO, also achieved better outcomes on the out of hospital CA (OHCA) and on the optimization of post-resuscitation care.
A systematic review was performed considering the main health' database: IBECS, LILACS, Pubmed and MEDLINE. The search was done using the following descriptors, extracorporeal membrane oxygenation, cardiopulmonary resuscitation and cardiac arrest. 31 articles were obtained; many of them measuring the prognosis and survival rates at discharge of patients suffering an inside-or-outside hospital CA.

Found articles concluded that CPR with ECMO (ECPR), during first stage of refractory OHCA or in-hospital CA in young patients, enhanced the survival rates and neurological recovery.

Evidences denote incorporating ECMO was essential as a CA treatment. Multidisciplinary groups should be instructed by ECMO staff to get expertise using the device, managing and caring this kind of patients. As well as, it is crucial the early use of the ECMO to get better outcomes.

It can be concluded that ECPR get better results than conventional CPR. It is advisable to apply the ECMO as soon as possible in young patients with refractory CA, to enhance survival rates and neurologic recovery.

05

SPONTANEOUS SUBARACHNOID HEMORRHAGE FROM A CEREBRAL MYCOTIC ANEURYSM: CASE REPORT WITH NURSING EMPHASIS

Mira Zool

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Cerebral mycotic aneurysms (CMA) are a complication of infective endocarditis (IE). They occur as a result of infectious material embolizing to cerebral vessels. CMA Rupture may lead to a disastrous aneurysmal subarachnoid hemorrhage (aSAH), with significant morbidity and mortality in up to 60-80% of the cases.

We present a case of aSAH from a CMA with significant complications, yet a good outcome.

A 23-year-old man returned from a trip abroad. Upon return, he complained of throat pain, a migratory polyarthritis, and was found by the admitting nurse to have a new systolic murmur. He was diagnosed with Streptococcus mitis IE. He was treated with intravenous antibiotic treatment. He presented to our center a month after discharge, due to severe, sudden onset headache. He collapsed in our emergency department, and deteriorated to coma with a right blown pupil. Imaging revealed a diffuse, aSAH with a large intraparenchymal clot. The patient was taken to emergency surgery, for evacuation of the hematoma.

Angiography revealed a cerebral mycotic aneurysm which was treated with endovascular coiling.

He was examined routinely by the nursing staff, according to the protocol described by Iacono et al. On the fifth day, left hemiparesis was noted. Emergent transcranial Doppler (TCD) demonstrated vasospasm surrounding the area of the initial bleed. The patient was treated with hyperdynamic therapy, and improved. Upon discharge he had residual motor aphasia and left-sided weakness (3/5). He was discharged to a rehabilitation center.

At last follow-up, more than 1 year after the original bleed, he was neurologically intact. aSAH from a CMA is a devastating complication of IE which may lead to severe neurological sequelae. Complications may ensue, irebleed, vasospasm, hydrocephalus and non-neurological complications. Some of these complications are demonstrated in this case. Persistent, unrelenting nursing measures in these patients, may aid in achieving a favorable outcome.

06

CARDIOVASCULAR DISEASE AND HIGH RISK PREGNANCY

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Background: Cardiovascular disease is the number one cause for mortality in women. There has been a steady increase in mortality in women younger than 55. There is a lack of awareness and knowledge regarding signs and symptoms of cardiovascular disease in women. A unique sub-group of this population is pregnant women. Acute Myocardial infarction incidence is 0.2-1% in pregnant women. There has been a steady increase of pregnancy in older women and cardiovascular complications. In this group-Mother Mortality is 9% and fetal mortality is 6%.
**Aim:** Early identification and assessment of women and high risk pregnancy.

**Method:** Case presentation of 37 year old woman with Ischemic heart disease and Status post coronary stent placement. Before discharge home from ICCU she consults with nursing staff about becoming pregnant.

**Results:** Women suffering from ischemic heart disease are able to become pregnant and undergo labor and vaginal delivery while under close surveillance. Epidural anesthesia should be preformed and the birthing mother should be attached to cardiac monitoring while in labor and delivery. Caesarian section should be performed only in cases when mother is hemodynamically unstable, or in cases that myocardial infarction occurred close to day of delivery.

**Conclusion:** Since the increase of pregnancy in older women and cardiovascular complications, it is imperative that intensive care nurses know how to instruct and guide these women regarding their obstetric future.

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**07**

**PULMONARY HYPERTENSION DURING PREGNANCY: CARING FOR THE HIGH RISK MOTHER IN ICCU**

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**Background:** Although pulmonary arterial hypertension (PAH) in pregnancy is rare, there are high risks for both mother and child. Therefore, nurses caring for women with pulmonary hypertension during pregnancy need to have an understanding of the pathophysiology, management options, risks, and outcomes.

**Aim:** Update awareness and enrich knowledge of pulmonary hypertension in pregnant women.

**Method:** Case presentation

A 22 year old pregnant female 31 weeks pregnant was admitted to ICCU. The primary objective was close cardiac and hemodynamic monitoring surveillance while receiving IV EPOPROSTENOL treatment. Medical history - Congenital VSD which was treated at age 3, existing ASD and elevated pulmonary artery pressure since age 16; Topics to be discussed: Hemodynamic changes of pregnancy in patients with pulmonary hypertension, maternal and neonatal outcomes, Prostacyclin Pathway, mode of delivery, type of anesthesia, and other issues in the peripartum period.

**Results:** A young pregnant female is a rare occurrence in ICU. The ICCU team in this setting worked in close cooperation with nurses from maternity, high risk pregnancy and delivery room nurses in order to deliver quality care to this patient.

**Conclusion:** The knowledge gained from caring for this pregnant patient suffering from pulmonary hypertension should be shared with nurses form a wide variety of intensive care settings. Our hope is to distribute and share our experience with European nurses.

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**08**

**HIGH RISK PREGNANCY IN WOMEN WITH AND WITHOUT ESTABLISHED CARDIOVASCULAR DISEASE**

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**Background:** Cardiovascular disease is the number one cause of mortality in women. There has been a steady increase in mortality from acute myocardial infarction (AMI) in women younger than 55 years. Lack of awareness, and knowledge regarding signs and symptoms of AMI, is related to increased cardiovascular mortality in women. A unique population is pregnant women, in which reported AMI incidence is 0.2-1%. The incidence of acute MI during pregnancy has been determined to occur with a frequency of 1 in 10,000 to 1 in 30,000 pregnancies. Higher rates of cardiovascular complications are reported in pregnancies. In this group, maternal mortality is approximately 9%.

**Aim:** Review of the literature and case presentation of women and high risk pregnancy.

We will present a case of 37 year old woman with established ischemic heart disease (Status post coronary stent placement). Before discharge from ICCU she consults the nursing staff about future pregnancies. In the presentation we will review the literature showing that women suffering from ischemic heart disease are able to become pregnant and undergo labor and vaginal delivery while under close surveillance. Epidural anesthesia is the preferred method while the birthing mother should be attached to cardiac monitoring while in labor and delivery.
Summary: Increase number of pregnancies in women with established cardiovascular disease pose a new challenge to the cardiovascular team. It is imperative that intensive care nurses will know how to instruct and guide these women regarding their future obstetric planning and risks.

DETERMINATION OF APPROXIMATE VOLUME BLOOD WITHDRAWN IN CRITICAL PATIENT IN THE FIRST 24 HOURS OF ADMISSION IN INTENSIVE CARE UNIT

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Aim: To calculate the number of blood tests in critical patients during the first 24 hours of ICU admission. To quantify the total volume of blood extracted related to ICU admission unit, baseline hemoglobin and hemoglobin at 24 hours.

Setting & participants: Performed in the ICU of the University Hospital Son Espases of Palma de Mallorca, from November 2015 to May 2016. Inclusion criteria: Patients over 18 years admitted for more than 24 hours at the cardiac, coronary, medical, or neuro-critical surgery units of the ICU.

Methods: Observational descriptive study. A data sheet was developed and completed by the nurse performing the blood tests during the first 24 hours of admission at the ICU. The study variables were: age, sex, admission unit, analysis type, hemoglobin at admission and hemoglobin at 24h. Descriptive statistics and correlations of the variables were analyzed with SPSS vs.20.0 program.

Results: The sample consisted of 100 patients, 42% female and 58% male. The average age was 64 years (± 13.62). 18% of the patients were admitted at cardiac surgery, 49% coronary, 20% medical, and 13% neuro-critical.

The average number of extractions per patient was 7.27 (± 2.76). The average volume of blood extracted per patient was 31.61 (± 15.77). The average hemoglobin baseline was 12.42 (± 2.08), and average hemoglobin at 24h was 11.90 (± 1.89). There is a tendency for hemoglobin to decrease at 24h.

At the cardiac and coronary surgery units more blood was extracted versus the neuro-critical and medical surgery units, being statistically significant (p = 0.05).

Conclusions: The admission of critical patients involves extracting blood for metabolic and gas monitoring. The number of extractions is directly proportional to the volume of blood extracted. The decrease in hemoglobin at 24h and the number of extractions was not found to be statistical significant.

UNDETECTED INJURIES IN SEVERELY INJURED PATIENTS AFTER INITIAL TRAUMA CARE

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Introduction: Trauma is the leading cause of death for people aged 18-45 years in most developed countries. Trauma may cause great suffering and disability, as well as inducing high costs for society. It has been indicated that undiscovered physical injuries after trauma exist, but the extent of the problem is not fully described.

Aim: To investigate the extent of undetected physical injuries in severely injured patients after the initial trauma care.

Methods: The study was conducted during two months at a level 1, trauma center in Stockholm, Sweden. Patients with an injury severity score > 15 (i.e. severely injured patients) were included in the study. Data regarding number of documented injuries at admission were collected from patients’ medical charts and compared with number of documented injuries at discharge. Descriptive statistics were used to present data.

Results: Among 60 medical records, 34 initially undetected injuries were identified in 22 patients. One injury was critical, 5 (15%) were serious injuries, 25 (73%) were moderate injuries and 3 (9%) were of minor severity. The most common undetected injuries were fractures located in the thoracic region. Out of these injuries, 28 (82%) were discovered within the first day after the trauma. Five of these injuries demanded treatment after re-assessment. Six injuries (18 %) were discovered after the first 24 hours of hospital admission. Two of these injuries needed to be treated.
Conclusions: Initially undetected injuries were found in more than one third of the severely injured trauma patients. The majority of the injuries were of moderate severity and most injuries were discovered in the first days after the trauma. Although most injuries did not appear to be of a serious nature, the consequence of undetected injuries may cause patients great suffering.

SEPSIS AS A SERIOUS PROBLEM IN NURSING CARE

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Sepsis belongs to a life-threatening condition. It is a general reaction of an organism with massive activation of immunity system among the bacterial infection which can develop to septic shock. It is caused by the infection which disseminates in organism and activates uncontrolled answer of immunity system. The most often infections which causes sepsis are urinary infection, pneumonia, intraabdominal infections or bacterial infections of central nervous system. It is necessary to hospitalize the patient with symptoms of sepsis at Intensive Care Unit (ICU) where the continual monitoring is possible. The role of nurse working at ICU in cooperation with the doctor is to monitor vital functions of patient – blood pressure, heart rate, electrocardiograph, saturation of oxygen, etc. Regarding with a health condition of the patient, the invasive inputs are applied. If it is needed, the oxygenation is provided by an alternated lung ventilations. Regularly, based on doctor’s indication, the nurse realizes a blood sampling for inflammatory markers, sampling of biological material to find out the pathogen which causes sepsis, and samplings to specify a functionality of vital organs. The stated examinations are complemented by additional imagine methods such as CT, MRI, sonography, etc. The goal/aim of sepsis threatening is to heal and to eliminate the underlying condition, to support failing function of organs and to attempt influence the activity of the immune system. Nursing care for patients with sepsis is very difficult. Nurse in nursing practice itself, or in cooperation with the doctor, carries out many professional activities which may require use of critical thinking. Sepsis is still the most common cause of death in hospitals and therefore it is necessary in a context of nursing care, to give due consideration.

SELECT ISSUES IN THE CARE OF PATIENTS WITH LYELL’S SYNDROME

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A patient with Lyell’s syndrome is in a life-threatening condition. Nursing problems are primarily focused on the lesions. The skin is a natural protective barrier for man. Lyell’s syndrome patients lose this barrier. The illness appears on the skin as pain, bursting blisters, erosions and ulcers. In addition, diseased mucous membranes occupy the urogenital organs, the mouth, there is conjunctivitis, corneal erosion of purulent exudates, haemorrhagic erosions in the inside of the lip or loss of nails. Because of the condition of the skin, a patient is exposed to a greater risk of infection. This can lead to sepsis and septic shock.

The process of therapeutic and medicinal care of patients must be adapted to the overall clinical status and the patient’s needs, while ensuring safety. Important is the multifaceted intensive care, including patient isolation, while maintaining increased sanitary order, analgosedation, immunotherapy. In case of significant damage to the lining of the gastrointestinal tract, when feeding by oral or intestinal route is impossible, total parenteral nutrition is carried out. Sometimes artificial respiration is needed if the disease proceeds to the respiratory system, leading to respiratory distress syndrome, or if there are complications resulting from hospitalization (pneumonia).
We ought to pay special attention to the mental state of a patient with Lyell’s syndrome. Concerning the skin’s and mucous membrane condition, enormous pain, immobility, lack of independence in care giving activities, the inability to perform basic physiological needs, the patient feels fear, anxiety and has a depressed mood. Therefore, to ensure the integrity of the entire therapeutic process, it should be accompanied by counseling, with the objective of eliminating deficits in the psycho-emotional realm of the disease. Care of a Lyell’s syndrome patient should be done by an interdisciplinary therapeutic and medical team consisting of highly specialized medical and nursing personnel.

13

NURSE CONSULTANT A NEW PROFESSIONAL ROLE FOR THE CRITICAL CARE NURSE

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Background: The purpose of this project was to introduce a Nurse Consultant, a modified Liaison Nurse role at a Swedish hospital during evening and night shift. The Liaison Nurse has it’s background in Australia and is a relatively new development of the Critical Care Nurse, (CCN) role. A pilot study involving three wards with surgical, orthopaedic and medicine specialities started at a Swedish hospital in October 2015. The purpose was to support the ward nurse in how to perform some difficult tasks she or he had a limited practical knowledge of. This can sometimes cause stressful situations and feelings of inadequacy for the nurses. The CCN is an experienced nurse with a postgraduate education and she is also well familiar with some of the task the nurses on the ward had problems with. Aims and objectives To explore the need of and what kind of support the nurses on the general ward wanted help with. Method Data was collected from all the assignments the Nurse Consultant got from the ward nurses for a period of 6 months. Result In total, 54 assignments were performed. Mainly during evening and night shifts. 19% of the assignments were concerning management or administration of medication in Central Venous Lines. 15% was regarding support with respiration or upper airway suctioning. The general action was a personal visit but in 19 of the tasks involved was solved directly during the phone call. Conclusion The Consultant Nurse had a supportive and pedagogic role and the ward nurse had a positive attitude to the role and felt they increased their knowledge.

14

MDT QUALITY IMPROVEMENT INITIATIVE TO INCREASE AWARENESS AND AVAILABILITY OF TRACHEOSTOMY EQUIPMENT FOLLOWING DISCHARGE FROM THE GICU AT BEAUMONT HOSPITAL

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Introduction: Best practice guidelines recommend that tracheostomy emergency equipment is readily available to all patients with a tracheostomy. The equipment should be at hand in an emergency and follow the patient from the critical care environment to all areas within the hospital.

Aim: Establish the availability and awareness of tracheostomy equipment at ward level in Beaumont Hospital, Dublin

Method: Feedback was gained at a MDT, Quality improvement forum. Tracheostomy equipment questionnaire was carried out on 20 nurses from all wards within Beaumont Hospital.

Results: Staff at the MDT forum identified the difficulty in obtaining essential tracheostomy equipment. It was also highlighted the risk when critical care discharges of tracheostomy patients occurred “out of hours”. The staff questionnaire results demonstrated the varying levels knowledge on resources and bedside safety equipment.

Discussion: Due to the discrepancies at ward level in the knowledge of tracheostomy safety equipment and the recommendations in best practice guidelines, a tracheostomy box initiative was developed. The tracheostomy box, with essential bedside equipment now accompanies every patient discharge from critical care. A MDT approach to education at both organisational and ward level occurs, with particular focus on the nurse by the patient’s bedside.

Conclusion: This aim was to introduce a quality improvement initiative in line with tracheostomy best practice guidelines. Early audits demonstrate 100% compliance with the initiative. However, continuous review is essential to continue patient safety within Beaumont Hospital.
SPONTANEOUS DELIVERY OF A HEALTHY BABY GIRL DURING VENO-VENOUS EXTRACORPOREAL MEMBRANE OXYGENATION TREATMENT

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At Clinical Department of Intensive Internal Medicine, University Medical Centre Ljubljana, we have been using veno-venous extracorporeal membrane oxygenation (VV-ECMO) as a method of treatment for severe respiratory insufficiency since December 2009. We had 58 cases until August 2016, of which 8 were H1N1 influenza patients. With this case report we want to present the first case of pregnant woman on ECMO in Slovenia, and the second case of successful spontaneous delivery worldwide so far.

29-year old, 23 weeks pregnant female with H1N1 influenza infection was put on VV-ECMO in University Medical Centre Maribor by our ECMO team. She was then transported 120 km away. Upon admission she required high FiO2 ventilation and high FiO2 and blood flow on ECMO. After five days she was weaned of ECMO but due to worsening of respiratory insufficiency she was again put on VV-ECMO on day 13. The patient and the foetus were closely monitored by obstetrician/gynaecologist the whole time of hospitalization. On the 17th day of hospitalization a nurse noticed that the cervical mucus plug had passed, notified the attending physician and obstetrician/gynaecologist, who continued with the labour. A girl was born in 25th week and 6 days gestation, with birth weight of 820 grams. The baby was admitted to a Neonatal intensive care unit. The health status of our patient rapidly improved in the following days; ECMO was removed on the second day after the delivery and she was then transmitted to Gynaecology department on the 35th day with 3 litres per minute of oxygen by nasal cannula.

Treatment of a pregnant woman on ECMO was a challenge for our medical/nursing team. With multidisciplinary approach we gained valuable experience and new knowledge. A positive outcome was a result of good work performance of the whole team.

NURSE INSERTION TOOL

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Introduction: The inclusion of a nurse in a high specialties ICU, like Neonatal Pathology, could be difficult. The highly specialized realities require a high professional. Newly inserted nurse needs to increase learning in addition to the request of an intensive clinical support, in order to reach the expected level. An insertion program, and the accompaniment of a tutor have led to improved performance of the newly inserted.

Purpose: It is, therefore, required the availability of protocols and procedures necessary for a suitable placement of the staff, whether it be in possession of specific requirements and not.

Materials and methods: Evaluating the literature, an instrument was created with specific objectives in order to train and make independent the new nurses. The objectives are divided by complexity, and the time to collect all of them is fixed in 5 months.

Conclusions: The instrument has references to time to achieve, with the ability to program the practical and educational learning. In addition, the presence of a time limit, allows the newly inserted and the tutor to carry out continuous assessments with the rank and adherence to autonomy.

The grid is made up of theoretical objectives, clinical, practical and logistical. It is also divided in timing of insertion and degree of autonomy.
THE CORE TEAM, TO IMPROVE THE PHYSICAL AND MENTAL STATE OF CRITICAL CARE PATIENTS DURING AND AFTER CRITICAL CARE ADMISSION.

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This abstract is first to inform the European colleagues about the good effects of a core team as a tool to improve the care of long stay critical care patients. Second about the highly valuable effects of consulting other hospitals as Radboud U.M.C., Helio, Reade rehabilitation center. Third, the necessary adjustment of a tool from somewhere else, to bring to your own situation

The core team pilot started as organization tool to increase the sense of responsibility of critical care nurses, improve continuity and quality of care for patients with a long critical care stay. The long critical care stay, severe illness and critical treatment, brought negative effects on patients like wasting, acquired weakness, anxiety, loss of self confidence, what did carry on far past critical care- and hospital discharge. Our goal to reduce these negative effects brought us to early mobilization, got appliances, materials, protocols and educated the team. Previously, the lead nurse alone was not able to guarantee the quality and continuity. The core team plan and an adapted computerized patient file to document the problems, goals, acts and discharge preparations gave us more motivated nurses, and patients leaving the critical care in a better shape

The core teams, six nurses and one coordinator per patient, made better informed nurses, timely adjustment of patient goals, early start mobilization and a better customized care. Europeans are getting older and so are our critical care patients, what comes with vulnerability, complications, and longer hospital stays. To reduce the acquired weakness, muscle wasting and post critical care trauma, a core team did contribute early mobilization start and less loss of function

FAMILY MEMBERS’ EXPERIENCES WITH ICU DIARIES WHEN THE PATIENT DOES NOT SURVIVE.

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Introduction: The ICU diary was originally intended for patients to help fill the memory gap and enable them to better understand what happened in the intensive care unit. However, less is known about how family members experience the diary when the sick relative does not survive the stay.

Aim: This study explored how family members experienced the use of a diary when a sick relative does not survive the stay in the ICU.

Methods: A qualitative method was used. The collected data were analysed using a hermeneutic technique inspired by Geanellos. The regional ethics committee approved this study.

Settings & participants: Nine family members of patients in a general ICU in southeast Sweden, who recorded eight diaries in total, were interviewed.

Results: The analysis revealed an overall theme ‘ the diary was experienced as a bridge connecting the past with the future’, which was a metaphor referring to the temporal aspect which included the period with the diary up until the patient’s death and then the post-bereavement period. The diary contributed to both a rational and emotional understanding of the death of the patient and disclosed glimmers of light that still existed before the illness deteriorated. Further, the diary strengthened relationships between family members themselves and between family and nursing staff. It helped to maintain a feeling of togetherness and engagement in the care of the patient which family members found comforting.

Conclusion: Family members of non-survivors had a need to have the ICU time explained and expressed. The diary might work as a form of ‘survival kit’ to: gain coherence and understanding; to meet their needs during the hospital stay and, finally; to act as a bereavement support by processing the death of the patient.

Acknowledgement: This study was supported by the Research Board of South-east Sweden.
PARTICIPATION IN FOLLOW-UP AFTER CRITICAL ILLNESS AND INTENSIVE CARE - A WAY TO IMPROVE THE FOLLOW-UP OFFER?

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Aims: The aim of this presentation is to facilitate increased understanding of participation and involvement in follow-up programs offered after critical illness and intensive care, from the perspectives of former patients and their next of kin.

Introduction / outline: The background for this presentation is an ongoing PhD-project that amongst other will investigate former intensive care patients and their next of kin’s experiences and thoughts about participation and involvement in follow-up after critical illness and intensive care. Little research has been found on participation and involvement in follow-up after critical illness, thus little knowledge exist on how this may impact patients and their next of kin. Being an active part and participating in own health care demands both cultural health capital and health literacy. The patients and their next of kin needs knowledge and skills to be able to participate. Moreover, research found on patient participation indicates that people emphasized different contents in the term participation, and that participation meant different things to the same person during the illness trajectory. An interesting aspect to include in the discussion.

Recommendations: Even though the follow-up across Europe and the United States show some similarities, there is no international consensus on how to conduct the best possible follow-up. Based on the values of autonomy in our society and governmental guidelines that emphasize increased participation and involvement in own health care, this should be highlighted and discussed in connection to the follow-up. Former intensive care patients are a heterogeneous group of people, potentially suffering from different kinds of sequelae requiring various follow-up measures after critical illness and intensive care. Considering the perspective of patient participation, one may discuss if the best model for follow-up is the one responsive to the many different needs the former intensive care patients and their next of kin have.

ICU DIARIES: WHAT WORKS, FOR WHOM AND IN WHAT CIRCUMSTANCES?

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The combined after-effects of critical illness and the ICU experience itself have been linked to both short-and long-term psychological consequences. Patient diaries have been postulated as a low-cost intervention that may assist this patient group in their psychological recovery. A realist review of the literature on the use of diaries to support ICU patients was conducted. The objectives of the review were to ascertain what is it about diaries that work, for whom and in what circumstances? A realist review methodology was chosen as it allowed the existing body of evidence to be drawn upon and an explanatory understanding of how patient diaries work in supporting the psychological health of ICU patients to be produced. Diaries were predominantly used for individuals who underwent a prolonged ICU stay, including mechanical ventilation. From reading their diary, patients could process their ICU experience and formulate more accurate memories of that time. Concreting their experience in reality enabled understanding of how ill they were and how far they had progressed. Insight into the holistic care and presence of their loved ones and caregivers was also provided. Reading and writing in diaries also provided a channel of communication and a means for family to feel included and connected to the patient. All aspects of the diary intervention varied and such variability raises challenges with regards to identifying an optimal diary model that could be implemented by service providers in future practice. Strong emotions can be evoked when reading a diary and exposing individuals to their ICU experience within a short period of time, without appropriate support may potentially serve to cause greater harm than good. Taken in this light diaries clearly need to be implemented and evaluated with greater stringency.
AN OVERVIEW OF PATIENT DIARIES FOR USE IN SUPPORTING PATIENTS’ PSYCHOLOGICAL RECOVERY AFTER DISCHARGE FROM THE ICU

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Aims: A review of current literature on Patient Diaries, for use in supporting patients’ psychological recovery after discharge from the ICU.

Introduction: “Primum non nocere”, meaning “First, do no harm”, is a basic understanding of the ethical principle of non-maleficence, and a guide for all nursing practice.

Recovery from critical illness can be a challenging process. It is informally noted that every day spent in ICU with a critical illness, can result in one month’s recovery. The physical recovery is challenging, however the psychological recovery can be the most distressing.

With advances in healthcare and improvements in clinical treatments, more and more patients survive ICU. Their experiences in ICU can often be harrowing and frightening, as they battle critical illness in an effort to survive. The memory of ICU therapies, the recollection of being unable to move, to speak or to communicate is daunting for many survivors. Memories can be fragmented and influenced by hallucinations, lack of sleep, the noise of the environment and the use of anxiolytic agents.

The intensive care environment is a high-tech clinical setting, which may not initially seem conducive to compassionate patient-centred care. With guiding literature on prevention of delirium and the PAD guidelines, it is hoped that the psychological effect of ICU will lessen. In the meantime, it is important to acknowledge the risk to patients, and prevent long term debilitating psychological outcomes where possible.

Recommendations: The aim of this literature review is to establish an evidence base to support the introduction of patient diaries to the ICU. As we become aware of the psychological impact of an ICU stay in the long term outcomes of patients, it is important we prevent harm where possible. The introduction of patient diaries could be a simple solution.

HEALTH AND SUPPORT TO FAMILIES LIVING WITH A MEMBER OF CRITICAL ILLNESS’ - A PILOT RCT STUDY

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Family members are facing an overwhelming and emotionally challenging situation, need to be seen and heard. Families to critical illness patients, who participate in health promoting conversations will experience increased family functioning, quality of life, level of hope and sense of coherence.

It will improved family interactions and alternative ways to manage the situation

The aim was to investigate if Health promoting conversations with families improved family functioning and wellbeing in families with a critically ill member.

This study was conducted at 2 Intensive care units in the southeast region of Sweden with 16 families.

The study was a pilot RCT study used a pre-test, post-test intervention and control group design, at baseline and after 3 and 12 months for both groups.

Patients over the age of 18, a minimum of 72 hours at the intensive care unit, and at least one family member (>15 years) of each patient interested in participating.

Main outcome variables in this study were family functioning and family wellbeing.

Mixed models were used in the analyses of data.

Patients and their families were approached in a sensitive manner and were given verbal and written information regarding the study.
Families’ showed a tendency to less stress and more hope, better mental health, but poorer physical health. No significant differences could be found. At 3 months HHI showed that those who were in the intervention group had a 4.5 higher level of hope than the controls, adjusted for family/patient (variable ID) the difference was 4.35 and significant (p = .018).

Health promoting conversations with families increased families hope after 3 months and they experienced less stress and more hope, better mental health, but poorer physical health in the intervention group. Health promoting conversations are used at the follow up visits at some intensive care units.

A LITERATURE REVIEW EXPLORING THE LIVED EXPERIENCE OF BEREAVED RELATIVES OF PATIENTS WHO DIE IN THE INTENSIVE CARE UNIT.

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**Aim:** A literature review exploring the lived experience of bereaved relatives of patients who die in the Intensive Care Unit.

**Introduction:** 29,000 people die in Ireland each year, leaving 290,000 people bereaved, according to the Office of the Ombudsman (2014). Even though 67% of people would prefer to die at home, only 26% actually do. 43% of people in Ireland die in acute hospitals, with 20% of hospital deaths occurring in the Intensive Care Unit. Given the advent of ICU’s and advances in healthcare, attempts made to resuscitate patients and prevent sudden death can lead to decisions regarding end of life care being made within the ICU. Families are at greater risk of developing Post Traumatic Stress Disorder or major depressive symptoms when a relative experiences death in the ICU, as opposed to death at home with hospice care according to recent research. Death is understood to be a deeply emotive experience, whether sudden or expected. A death is an inevitable occurrence, the importance of managing the process of dying empathetically is central in preventing undue distress in the lives of bereaved families. The lasting impact of a good death was vocalised by a bereaved family member at the Fourm on End of Life in Dublin 2013, “Because of the support he received, my husband died well. Because he died well, I live well”.

**Recommendations:** A structured literature review addressing the experiences of relative when planning for death in the ICU, the dying process in such a clinically advanced environment and bereavement after an ICU death will be discussed. This will allow for a better understanding and empathetic view on the experiences of relatives, when their loved one dies in the ICU.

END-OF-LIFE CARE IN THE INTENSIVE CARE UNIT - LET THE FAMILY IN AND OFFER A FOLLOW-UP VISIT

Isabell Fridh
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The Task Force of World Federation of Societies of Intensive and Critical Care medicine has made a call for the need of guidelines for End-of-Life (EOL) Care. Inter-professional teamwork and families involvement in the communication and decision-making process is showed to be of utmost importance for relatives’ experience of losing a loved one in an intensive care unit (ICU). However, there are other aspects of family-centered EOL-care that need attention and which are of certain interest for the nursing profession and can be of importance to include in guidelines. The aim of this presentation is to highlight current knowledge and evidence, concerning the ICU healthcare environment and bereavement follow-up for family members. These aspects are seldom included in the current EOL discourse or in instruments for evaluation of quality of death in the ICU, but can have impact on family members’ EOL care experience in short and long term.
In this presentation, the ICU environment and family members need for proximity, privacy and rest when a loved one is dying, will be illuminated and supported by research findings. These aspects are of importance for relatives’ capacity to cooperate in communication and decision-making concerning their dying loved one. Taking part in EOL discussions is related to posttraumatic stress symptoms which are common by bereaved ICU family members. Follow-up services might be a way to prevent and detect this condition. This service is implemented in some ICUs but there is a big variety in Europe as well as globally. The importance of ICU nurses’ participation and engagement in this service will be stressed and preliminary results from a national-wide study on this issue will also be presented.

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OPENING THE DOOR: IMPROVING CARE OF DYING PATIENTS AND THEIR FAMILIES IN AN INTENSIVE CORONARY CARE UNIT

Naela Aslan, Shaol Atar, Sousan Magdi

Galilee Medical Center, NAHARIYA, Israel

Background: In the Intensive Coronary Care Unit (ICCU) ensuring quality care of the dying patient can be a challenge. Supporting patients and families through End of life situations is a difficult and delicate task. Opportunities to help maybe missed due to barriers such as fear, denial, ignorance and lack of training. This has resulted in avoidance of families, and a “Closed Door” policy of strict visiting hours. This presentation describes a project designed to improve care of the most vulnerable patients, the dying and their families.

Aims: To develop appropriate care guidelines for patients dying in the ICCU to ease suffering and enhance the quality of death.

The Process: Unit nurses trained in palliative care led the project. Guidelines were developed with the approval of the Unit medical and nursing management. These were based on existing hospital policy, recognized palliative principles, and religious and cultural ceremonies. The project was presented at the monthly staff meeting, and a work plan was developed involving all ICCU team members. Improvement in Communication was seen as vital to the project. The entire ICCU team received training to increase Communication skills. The existing policy of strict visiting hours for families was changed, and nurses began to assess family and patient psycho-social needs as a routine part of care. The families need for a respectful parting from the dying patient was recognized and became part of Unit policy.

Results: Staff report increased confidence in their ability to care for dying and deceased patients and bereaved families. Families express gratitude for precious time with loved ones. Opening the door and allowing families in was a breakthrough in changing attitudes, and ensures quality of care for all Unit patients.

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SHARED DECISION MAKING: A CASE STUDY USING FAMILY CENTERED CARE (FCC)

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The aim of this presentation is to present the principles of Family Centered Care (FCC) as it applies to ICU shared decision making, through the use of a case study.

Introduction: M.L., 60 years old woman, was admitted to the Intensive Care Unit with septic shock due to Cholelithiasis. M.L. was fully conscious when admitted but hemodynamically and respiratorily unstable. M.L. was later intubated for 3 weeks, with tracheostomy. After 22 days, she developed an ischemic bowel. The ICU doctors and surgeon decided on conservative treatment. The medical decision was presented to the family, who understood and accepted by them. The same evening, while the family was separating from their loved one, a senior surgeon suggested surgery, with a slight chance of survival. The family were confused but agreed to the surgery. Just before leaving the ICU for the surgery, M.L. Passed away.
According to FCC, the patient and family are considered the unit of care. This approach requires time, patience, and acceptance of the patient’s and family’s needs and beliefs when making clinical decisions. This process begins from admission to the ICU, while integrating the family in making decisions for their loved one. Informing family members of the patient’s condition, treatment options and rate of survival are some of the data they need to make a decision. Decision making rely on good communication, mutual respect and trust mainly when preparing the family towards death of their family member. Inconsistency with the information harms this process and promotes conflict while the family in a crisis.

**Recommendation:** The nurse, as a part of the medical team, has a role to support the family in the whole process especially at the end of life decision. Therefore, it is important to educate ICU nurses on how to implement FCC into their practice.

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**CHILDREN AS NEXT OF KIN - IMPROVING FAMILY CENTERED CARE**

Charlotte Förars, Håkan Engdahl

Karolinska University Hospital, STOCKHOLM, Sweden

NIVA is a Neurosurgical Intensive Care Unit for adult patients, where patients are in need of constant care and supervision. The importance of caring for the patients family, where children needs extra attention, are well documented. Parents need support and guidance how to manage the situation when children are involved. Recent research shows that this will affect their longterm mental process.

**Aim:** “Draw attention to the importance to notice relatives with children” “Increase the knowledge about children as relatives” “Design a best pracice routine for children as relatives at our unit”

**Intervention:** A group of three members were initiated as support persons for children. Lectures and training courses with structured method for talking with children as relatives were performed. Leaflets were implemented to give information to adults as well as separate leaflets for children. Two teaching opportunities where held for the entire staff. Documentation was improved and introduction calls focusing on the children were initiated. The unit had 379 admissions over a ten months period, 1 august 2015 to 31 of may 2016. 39 families with 89 children were included in the investigation. Of 81 calls performed, 24 were with children, 17 with children and parents together and 40 with parents only. A best pracice routine were created and the entire staff were involved in the process. There was an awareness of the children. We created the 4 steps method when children arrive to our unit.

**Conclusion:** It’s our responsible to dare to ask. Children dont ask for attention themselves and parents often feels unsecure and need support. Our recommendation is keep it simple, “Here and Now”, focusing on the wellbeing of the whole family given extra attention to vulnerable children. We are proud of what we have achived.

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**HOW THE INITIAL CARE AND INTENSIVE TREATMENT OF A PATIENT WITH A LIFE-THREATENING CONDITION IS PERCEIVED BY THE PATIENT’S RELATIVES**

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Treatment of a patient with a life-threatening condition consists of a series of actions, the aim of which is to do away with afflictions which, if left untreated, would certainly result in the patient’s death. Swift emergency medical assistance is crucial when it comes to the survival of patients in a critical condition. The presence of relatives in the course of treating such patients has proven helpful, as relatives are thus able to see that everything possible has been done to preserve the patient’s life.

A critical and unstable condition of a patient requires continuous processes of intensive treatment, which is why the presence of relatives is usually restricted. Meeting the family members’ psychological need to be by the patient’s side or close by is therefore a relevant part of the medical treatment plan for a patient with a life-threatening condition. While an ill person is undergoing intensive treatment, their family members may notice physical changes which may scare them.
The patient’s relatives are under a lot of stress and are concerned about the patient’s medical condition, which usually changes from one minute to another. At the same time, they are coping with the possible treatment outcomes, such as potential premature death or disability. In addition to being faced with their own fears, they find themselves in a completely foreign environment, surrounded by unknown and fear-inducing high-tech machines, while having to adhere to certain rules and instructions. Family members play an important role in the emotional support provided to patients in critical condition, contributing significantly to their recovery. By enabling their presence, an essential need of the family members is fulfilled. Being able to see with their own eyes that members of the medical staff are competent and properly trained is a great source of comfort to them.

CARE FOR RELATIVES OF THE DYING OR DEAD ICU PATIENT: A QUALITY IMPROVEMENT PROJECT FOR INTENSIVE CARE NURSES

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When an ICU patient dies, how do you create the best possible conditions for the family to have a respectful memory of the occasion for the rest of their lives?

At the ICU in Tromsø, we had an established culture for dealing with the situation of dying or dead patients, which was implemented differently by different nurses. We wished to build on this experience to create standardised guidelines and ensure quality in this area.

It was important to build a common platform with the nurses. This involved teaching by hospital chaplains, who are our greatest experts in this field.

We wished to create a respectful and solemn atmosphere around the patient and relatives using simple means. A staff guideline was created, called “Guideline for termination of intensive care and deaths in the ICU”. A “bereavement package” was put together, containing items to create a solemn atmosphere in the room. In collaboration with an artist, a religion-neutral stretcher blanket was designed to be laid over the deceased after washing the body to contribute to a respectful atmosphere for the ceremony. A candle is lit in the central area of the ward to inform the staff that a patient is dying or dead, primarily to reduce the noise level out of respect for those involved.

We also produced a brochure with information on practical assistance for death and burial.

In our multicultural society, we have been keen to provide a good service for all, irrespective of religion or belief. Our aim is to create a respectful setting adapted to individual needs.

This work began in 2008 and was implemented in the ICU in 2010. Our experiences so far have been entirely positive.

PEER-PRECEPTORSHIP - A WAY TO PROMOTE REFLECTIVE PRACTICE

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Introduction: Is a peer-preceptorship module a way to promote joint, reflective practice during Intensive Care specialist education? Inspired by study units and peer learning from nursing schools, we investigated if a similar concept could support the transfer of theory to practice during the clinical practice modules of Nurse Specialist Intensive Care education.

Aim: To investigate whether peer-preceptorship can promote peer learning, through joint reflection during clinical practice modules of nurse specialist intensive care courses.

Settings: 5 students and 2 clinical instructors took part in the study, conducted in a closed, four single roomed section of the ICU, over 4 consecutive day shifts.

Method: 5 students took part in a focus group interview where qualitative data was collected using a hermeneutic approach. The transcribed data was analysed using Steinar Kvales 3 levels of interpretation.
**Results:** The students shared experiences, and knowledge through joint reflection leading to peer learning. The peer-preceptorship module created a safe learning environment, giving the students space to reflect together. The peer-preceptorship module enhanced patient care. Teamwork and joint reflection led to innovative nursing interventions that benefitted the patients. During the peer-preceptorship module, clinical instructors were instrumental in encouraging joint reflection, motivating the students to think critically and reflectively. The structure of the module meant that the students could concentrate on joint reflection. It was essential that the students had time for joint reflection and this was supported and encouraged via clinical instructors, unit management and organization.

**Conclusion:** Peer-preceptorship module owed its success to support from unit managers and colleagues. The challenge will be to translate the success of the peer-preceptorship module to the ICU where there is less time and resources available to facilitate change in culture. Peer-preceptorship module is now a permanent fixture twice a year with an aim to integrate peer learning to the unit.

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**DEVELOPMENT OF A CRITICAL-CARE NURSE EXAMINATION**

Lena Stevens, Janet Mattsson

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**Background:** The preparation to become a critical-care nurse in Sweden consists of a college program. The programs need to meet a set of widely defined goals developed by the Board of Higher Education, but can differ in content and layout depending on the college curriculum. There is subsequently no pre-defined standards for the knowledge, competencies and capabilities a critical-care nurse should possess. This presents a problem for both employers, educators, nurses and students and can ultimately compromise patient safety.

**Aim:** Our aim was to develop a final examination that would reflect theoretical knowledge, as well as practical skills and competencies for an entry-level critical care nurse.

**Method:** The content of the final examination was based on a previously developed assessment tool used for clinical rotations at our college. This assessment tool reflected the competencies stated by the national association of critical care nurses in Sweden (AnIva) as well as the goals required by the Board of Higher Education in Sweden. After development of the exam, which comprises a two-step assessment where the students’ skills and capabilities are assessed, and a theoretical part where the students’ nursing-care knowledge is assessed by explicit pre-determined standards, the exam was tested and then revised in several steps after several focus-group discussions with content-experts and students.

**Result:** The content-experts reported they were helped by having a set of explicit pre-determined standards to guide them. The students expressed similar sentiments as well as satisfaction from receiving “proof” of having reached an entry-level critical-care nurse level.

**Impact for practice:** A set benchmark where knowledge-level and competency requirements are clarified for critical care nursing-practice aids students, educators and employers in setting goals for, and evaluating individuals working towards becoming a critical care nurse. This ultimately strengthens the profession and promotes patient safety.

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**STRUCTURED ASSESSMENT OF STUDENTS IN A CRITICAL-CARE NURSING PROGRAM**

Lena Stevens, Janet Mattsson

Red Cross College, STOCKHOLM, Sweden

Critical care nurses need to possess theoretical knowledge, advanced skills as well as competencies and capabilities to care for critically ill patients in the challenging and fast changing environment of intensive care. In order to assess performance and learning in critical care nursing students in the clinical setting, a structured process enabling college faculty, clinical educators and students to work towards the same goals and learning outcomes is of outmost importance.
In this study action research was used to develop an assessment instrument in a collaborative effort between faculty, clinical educators and students. The instrument was developed and tested at several clinical sites during a period of 11/2 years. Interviews were conducted with expert focus groups and students about the ease and feasibility of the instrument. Four themes emerged during the analysis of the interviews: clarity, helping me, arranging and timeliness. The analysis further revealed positive opinions about the structure, content and usability of the instrument. We conclude that the instrument helps in both assessing student performance and in revealing knowledge-gaps for the students in the critical care nursing program.

ICU PHYSICIAN–NURSE SHARED CLINICAL DECISION MAKING: FLUID BOLUS ADMINISTRATION

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Introduction: The ICU is a dynamic, rapidly changing environment where clinical decisions are often made under stress. The quality of these decisions and their outcomes is affected by the level of collaboration, communication and shared decision making (SDM) between healthcare professionals, especially physicians and nurses. A model was developed that describes ICU clinical shared decision making and the factors that affect it. One common yet critical decision is whether to administer a fluid bolus to a hemodynamically unstable patient.

Aim: To describe shared decision making related to fluid bolus administration, based on an ICU SDM model.

Setting and Participants: A convenience sample of 109 nurses attending two national meetings were sampled. Most were women (78%), in senior or managerial positions (75%), with a mean age of 44.0 (SD=9.3) and a mean of 13.3 years (SD=8.7) working as an ICU nurse.

Methods: Nurses completed a questionnaire based on an ICU SDM model that measured how nurses make decisions related to fluid bolus administration, and personal and work characteristics. Ethical approval was obtained for the study.

Results: The level of shared decision making was evenly divided between relaying information (69%), deliberation (66%) and shared decision making (70%). Other non-shared methods of decision making such as administering the bolus and then calling the physician (69%) and only providing information that supports the nurse’s decision (39%) were also used. The level of shared decision making was not related to any of the work or personal characteristics measured.

Conclusions: ICU nurses, regardless of their role or other characteristics, use different strategies to obtain medical orders for fluid bolus administration. This is in contrast to a body of literature stating that physicians dominate clinical decision making in the ICU. Further studies are warranted to investigate these results.

CCNS EXPERIENCES OF NURSING TRAUMA PATIENTS

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Introduction: Disruptions of work due to an acute change in priorities are not uncommon for critical care nurses’ (CCNs), their skills can be required outside the ICU – as part of a mobile intensive group or as in this study, in the trauma team.

Aim: To explore CCNs’ perspectives of assisting in trauma team and nursing trauma patients.

Setting & participant(s): A midsize hospital in Sweden with a joint ICU and postop ward. CCN mans the wards and are responsible for carrying a trauma pager and assist in trauma teams at the ED.

Method: Descriptive design. Focus group discussions with 12 CCNs were analyzed with qualitative content analysis. Written consent was given by all CCNs.
**Results:** One overall theme: Preparing for the unexpected. Four sub-themes; (1) Feeling competent but sometimes inadequate; (2) Feeling unsatisfied with the care environment; (3) Feeling satisfied with well-functioning communication; and (4) Feeling a need to reflect when affected.

**Conclusions:** Nursing trauma patients can overall be emotionally challenging. In specific, it can be challenging for the CCN to in a hurry leave their patients at the ICU/postoperative ward when rushing to assist in a trauma team. To address these challenges, and to ensure delivery of a high-quality trauma care, correct preparations and evaluations are needed. We suggest improvement of two aspects in order to optimize trauma care: First, systematic and continuous formal preparation to secure optimal conditions for teamwork, so CCNs can feel satisfied with the communication and avoid feelings of inadequacy. Secondly, ensuring follow-ups/debriefings for the trauma team when there is a need to address uncertainties and feelings that need to be voiced.

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**THE HELICOPTER AS A CARING CONTEXT: TRAUMA PATIENTS’ EXPERIENCES**

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**Introduction:** Emergency medical services (EMS) assist in primary and secondary transportations. Primary, from scene of the accident to hospitals or secondary, between hospitals. The patient’s medical condition, transport accessibility to the accident site and the receiving hospital’s resources are some factors influencing the choice of transport. An increased use of helicopter ambulance has occurred over the years, but little is still known about patient’s perspective of helicopter emergency medical services (HEMS).

**Aim:** The aim of this study was to describe trauma patients’ experiences of HEMS.

**Setting & participant(s):** Persons who due to an unintended physical injury were cared for by HEMS during primary transportation.

**Method:** Descriptive design. Thirteen persons (ages 21–76) were interviewed using an interview guide. Data were analyzed using qualitative content analysis.

**Results:** The analysis resulted in three themes: Being distraught and dazed by the event – patients experienced shock and tension, as well as feelings of curiosity and excitement. Being comforted by the caregivers – as the caregivers were present and attentive, they had no need for relatives in the helicopter. Being safe in a restricted environment – the patients’ injuries were taken seriously and the caregivers displayed effective teamwork.

**Conclusion:** For trauma patients to be taken seriously and treated as ‘worst cases’ enables them to trust their caregivers and ‘hand themselves over’ to their care. We argue that environment in HEMS’s should not only be looked upon as inhibiting. As HEMS’s provide additional advantageous circumstances, that may be hard to achieve in other nursing context, such as being the sole patient and having proximity to a small, professional team.

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**NURSE WORK ENVIRONMENTS: PERSPECTIVES FROM CANADA AND THE UNITED KINGDOM**

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**Introduction:** Canadian nurse mean turnover rates have been shown to be 19.9%, with supportive work environments playing a key role in curtailing turnover. Nurse work environments have been rapidly changing in the last 15 years as hospitals make efforts to reduce costs, streamline services, and cope with a worsening nursing shortage. Many of the definitions of a healthy work environment for nurses refer to practice environments that offer opportunities for autonomy, professional development, accountability, and control over the work environment. Healthy work environments have been linked to nurse retention. An accurate description of current critical care nurse work environments are urgently needed in order to develop strategies to retain nurses and optimize nurse work conditions. Research is beginning to establish the relationship between healthy work environments, nurses, and organization and patient outcomes, though more research is needed to confirm the important factors for strengthening the nurses’ work environment.
Aim: The aim of this research was to develop a baseline assessment of critical care nurse work environments and levels of moral distress among critical care nurses.

Setting and Participants: Critical care nurses from Canada and the UK were included in this study.

Methods: The study was a cross-sectional survey design. Results This study began in September 2016 and the preliminary results will be presented.

Conclusions: Implications for nurse managers, educators, research and policy will be explored along with potential strategies to improve work environments for critical care nurses.

PERCEPTION OF CONSCIOUSNESS IN NON-COMMUNICATIVE PATIENTS BY NURSES AND NURSING ASSISTANTS IN A NEUROLOGICAL INTENSIVE CARE UNIT

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This study aims to evaluate nurses and nursing assistants’ (NAs) perception of the consciousness in patients suffering from disorder of consciousness (DOC) and to quantify their implicit assessment of patients’ clinical states of consciousness into an Analogic Visual Scale. We hypothesized that even in the absence of a structured and explicit evaluation of consciousness (in contrast for instance with the Coma Recovery Scale Revised, CRS-R), nursing expertise could be a valuable measure to improve assessment of state of consciousness. Method: This is a prospective observational single-center study. All consecutive patients suffering from disorder of consciousness (DOC) since March 2016 were included. We plan to enroll 50 patients (25 acute / 25 chronic) in 12 months. Our primary objective is to correlate the nurses and Nursing assistants’ assessment of those patients’ consciousness quantified through an Analogic Visual Scale (the DOC-feeling) with the results of the standard methods for evaluating DOC (including Coma Recovery Scale Revised, fMRI, electrophysiology etc). The secondary objective is to identify elements which correlate with this assessment and/or with the expert’s diagnosis (such as visual pursuit, patient’s participation to nursing, motor responses to verbal command or adapted reactions to painful care). A preliminary survey was done to evaluate the baseline medical knowledge of the team members. 80% (29) team members completed the preliminary survey. Evaluation of consciousness was rated as easy or very easy by 38% of team members and distinction between awareness and wakefulness by 52%. In 3 months, 28 patients have already been enrolled and 608 forms have been collected (156 in ICU, 452 in the step down unit). This corresponds to a mean of 21.7 evaluations per patient. Preliminary analysis on 26 first patients reveals a remarkably good correlation between the DOC-feeling and the Coma Recovery Scale Revised (R² = 0.48, p-value <0.0001).

HOW DO PATIENTS EXPERIENCE THE ICU AFTER GASTROINTESTINAL SURGERY AND WHICH CONSEQUENCES CAN BE DERIVED FOR THE MANAGEMENT?

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New evidence-based attempts of surgical and anesthesiological treatment have influenced the care of patients in intensive care units. This leads to the question of how the patients experience the ICU after the surgical extraction of an esophageal tumor and what possible impact this could have on nursing management in this area. Former studies have only dealt with the experience of ventilated patients, but neither of them explicitly sought for the experience of not-ventilated patients.

In qualitative research narrative interviews were conducted with four male patients who have spent at least 48 hours on an intensive care unit after a surgical extraction of an esophageal tumor. The interviews have been recorded and evaluated using content analysis by Mayring.
The collected data was analyzed and divided into five different categories, characterizing the deeper meaning of the categorized statements. Those five categories are: ‘patient care’, ‘security’, and ‘coping strategies’, ‘knowledge’/‘awareness’ and ‘quality of care’.

The interviewed patients’ experiences during their stay on the ICU were mainly positive in the former mentioned five categories. On behalf of the caring management and quality of care could be seen that the development of care was going the right direction. For the future the team culture with focus on a positive self-concept has to be improved. Discussions that lead to more flexibility of the visiting policies as well as introducing a pre-intensive care information for patients and their relevant others, should be initiated.

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NURSING INTERVENTIONS BEFORE, DURING AND AFTER TRANSCATHETER MITRAL VALVE REPAIR (TMVR): NEW HOPE FOR PATIENTS WITH DEGENERATIVE MITRAL REGURGITATION (DMR).

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Background: Mitral Valve Regurgitation is a serious disease and difficult to treat. Heart failure progressively worsens, with loss of function and reduced life expectancy. Conventional treatment includes drug therapy, and referral for open heart surgery. However many patients are not suitable for surgical solutions. These patients suffer from physical symptoms requiring frequent hospitalizations causing constant anxiety and stress. Cardiology nurses witness the suffering and hopelessness of patients and families with few treatment options. New technology has enabled the development of a new procedure, Trans catheter Mitral Valve Repair (TMVR).

The procedure: A minimally invasive repair procedure for high surgical risk patients. The mitral valve leaflets are clipped together with a device. Indicators of suitability include significant DMR and severely symptomatic patients unsuitable for surgery due to age or comorbidities.

Nursing Interventions: Three years ago Cardiology Nurses in our hospital formed a task force to lead the way in educating and training all staff to promote this new approach. They began by identifying patients who could benefit by recognizing the pattern of recurring hospitalizations. They developed checklists and suitable documentation to supervise the care before, during and after the procedure. In the Intensive Care Unit they actively promote early extubation, and discharge home. In the outpatient clinic nurses follow up outcomes and monitor the improved quality of life enjoyed by patients and families.

Results: Since introduction 3 years ago, there has been a 50% reduction in recurrent hospitalization amongst these patients, saving the health care system valuable resources.

Conclusion: TMVR is a ground breaking procedure that gives hope to the severely ill with no surgical option. It has improved clinical outcomes and patient quality of life. Cardiology nurses in our hospital have taken a leading role in the management of these most vulnerable of heart failure patients.

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THE ROLE OF RAPID RESPONSE SYSTEM TEAMS IN END-OF-LIFE CARE DECISION- MAKING: A SYSTEMATIC REVIEW

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Background: Over the last decade Rapid Response System (RRS) teams have experienced a transition of their role from managing acute deterioration and life threatening events to making informed decisions regarding the End of Life Care (EOLC) for hospitalised patients. The development and expansion of this role within RRS teams is not clearly defined or structured.

Aim: To systematically review the literature examining the role that RRS teams have in the decision-making process surrounding EOLC.
Methods: The databases Medline, Cinahl, Web of Science, Embase and Scopus with no restriction on dates. Qualitative, Quantitative and mixed-method studies were included, conference abstracts, literature reviews and editorial articles were excluded. All included studies were screened for eligibility, data extracted and quality appraised. Ten percent of the data extraction and quality assessment was undertaken by two independent reviewers. Qualitative and quantitative data was analysed normatively.

Results: Twelve studies were included in the review. The results indicated that one third of RRS consultations were related to EOLC decisions, indicating that this is an integral part of their role. However, the findings suggest that incorporating EOLC into the RRS role may not be the best use of resources and that earlier decision-making by general ward staff or integration of support teams, such as palliative care, may be more appropriate. In addition there was limited evidence in the literature regarding how and what framework the RRS teams used to make these EOLC decisions.

Conclusion: EOLC decisions are an integral part of the RRS role. There is a need for further research to understand how these decisions are made and what structure or framework is used. The role of the RRS with palliative care teams also needs to be explored.

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AWARENESS OF CITIZENS OF MONTENEGRO ON ORGAN DONATION

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In Montenegro, in 2009 and passed the law on transplantation of human body parts, organs and tissues for medical purposes, which is in line with European and international legislation. One of the most important segments of the transplant program is to increase and spread knowledge about the importance of transplantation in the professional and lay population. However, many studies show that a disproportionate ratio of donor organs and the necessary authority, the main problem in this area.

Method: Cross sectional study

Results: The analysis of data on the occupation of respondents it was found that the sample was the largest number of nurses and technicians, a total of 156 (39%). Regarding the work of the general population sample, was approximately equal to the number of students surveyed, a total of 27 (6.8%), housewife 22 (5.5%), pensioners 33 (8.3%) and 25 unemployed persons (6.3%). Given that the health workers most dominant professional activity of the nurse-technician to be expected. Total 192 (96%) of health workers were previously informed about the term “organ donation”, and 178 (89%) of respondents from the general population. A significantly higher number of respondents was informed about the term “organ donation” from a group of health care workers than in the general population, which was expected given their formal medical education and continuing education that is carried out in the Clinical Center of Montenegro. The largest number of respondents was 336 Orthodox faith (84%), followed by the Islamic 44 (11%) and Catholic 19 (4.8%). Patients from both groups were tested for the reason of their negative attitudes towards organ donation cited lack of public awareness regarding the transplantation and organ donation.

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ORGAN DONATION IN THE INTENSIVE CARE UNIT (ICU)

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Transplantation is often the only option for patients with terminal organ failure. The need for transplantation and the demand for organs exist globally. Many Irish citizens indicate their willingness to donate their organs. Therefore it’s essential that the option of organ donation, where medically suitable, is discussed as part of end of life care in Intensive Care Units (ICU) where potential organ donors are a small population of the total patient cohort. There have been many changes to the organ donation structure in Ireland recently. One of the critical changes was the introduction of Organ Donor Nurse Managers (ODNM’s) in Intensive Care Units within each hospital group where critical care education is central to this role.

The overall aim of this poster is to present an overview of Organ Donation in ICU and increase Critical Care healthcare professionals’ awareness around organ donation. In addition this poster aims to:
- Provide an overview of the new structure around Organ Donation in Ireland
- Provides information on assent in Ireland
- Provides information on ICU patients that may donate
- Details support services for donor families
- Gives information on the Organ Donor Nurse Managers who are embedded in Intensive Care Units throughout Ireland

**ETHICAL ROUNDS - A POSSIBILITY FOR THE ICU STAFF TO IDENTIFY AND DISCUSS ETHICAL ISSUES REGARDING THE CRITICAL CARE PATIENT**

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**Aim:** To identify ethical issues regarding the intensive care patient at an early stage in his or her care and to discuss those issues in an interprofessional setting.

**Introduction/outline:** In order to give the ICU staff a tool for identifying ethical issues earlier and be given an opportunity to discuss these issues we were given the assignment to create a structure that allowed it to happen. After researching literature we created “Ethical rounds at the ICU”. An ethical round should be held when the patient has been at the ICU for approximately a week and are estimated to stay in the unit for an additional week. Ethical rounds can and should be held earlier and more frequent if necessary. The critical care nurse and the intensive care physician in charge of the patient should always be present for ethical rounds with additional staff if required. The team identifies ethical issues and discusses them together in order to come up with a solution. The discussion should be based on the ethical principles for healthcare in Sweden. It is of importance that the discussion is unprejudiced, joint and non-hierarchical; all participants should feel comfortable to speak up regarding the patient’s care. The team comes to a solution which is documented in the patient’s journal. The discussion can be about ending life support, how to proceed with the patient’s care, treatment of next of kin or how to empower the patient’s autonomy.

The staff is highly appreciative of this opportunity to discuss ethical issues. It has allowed the team to communicate about these issues in a new way.

**Recommendation:** The critical care nurse and the staff at the ICU should address ethical issues earlier in order to ensure that the patient gets the best care possible.

**DELIRIUM IMPLEMENTATION**

Susanne Nielsen

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**Introduction:** Clinical guidelines are helping to ensure consistent and high quality in assessment, care and rehabilitation based on scientific evidence. Implementation of knowledge from Clinical guidelines to clinical practice is often associated with challenges, the literature don’t precisely point out how to implement it successfully. Unclear strategies on implementation and lack of systematic approaches are barriers which may result in the fact that health professionals are not prepared for this task.
**Aim:** To identify challenges related to the implementation of a clinical guideline about delirium experienced by nurses in Cardiac Intensive Care unit. Nurses learn to make qualified clinical decisions based on best evidence.

**Settings & participants:** The project is a collaboration between Cardiac Intensive Care Department, the Heart Center at Rigshospitalet, University Hospital in Copenhagen, Center for Clinical Guidelines and Metropolitan University College in Denmark

**Methods:** To plan interventions based on identified challenges in clinical practice. To involve nurses in order to make them take ownership/responsibility and to make sense for the nurses in clinical practice, to use the Clinical guideline about delirium Methods. Challenges are identified by; Patient audit, gap analysis pre-post, discourse analysis pre-post, dialogue meetings pre-post , Workshop, nursing conferences, lessons in delirium.

**Results:** Identified challenges: Interdisciplinary collaboration, physical environment, knowledge about delirium, documentation standard versus individual, relatives as a collaborators, and nurses responsible for implementation creates a distance from their colleagues due to greater knowledge about delirium.

**Conclusions:** More systematic screening
Focus has moved to more prophylactic interventions to prevent delirium
Patients with delirium is an interdisciplinary collaboration
Nurses’ collaboration with relatives is sometimes influenced by their own attitudes
Individual care plans are documented frequently
Delirious patients are moved to a single rooms at an early stage, if possible, and nursing teams are established
Nurses responsible for implementation are used to support their colleagues.

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**THE ACRONYM G.H.O.S.T.M.I.N.D AS A PREVENTION TOOL IN THE DIAGNOSIS OF DELIRIUM**

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GHOSTMIND – A Delirium Prevention Tool
Cardiac surgery in Belfast is carried out in a single centre, providing a total of 1100 procedures per annum for the population of Northern Ireland. Following surgery patients are expected to spend 24hrs in intensive care before moving to high dependency care (HDU). Slower recovery rates leads to surgeries being cancelled due to a lack of beds. Patients suffering from delirium make up a significant proportion of our long stay patients.Delirium represents an important and growing area of clinical practice. Behavioural and psychological symptoms of delirium include agitation, psychosis, aggression and a variety of inappropriate behaviours. These symptoms are among the most complex, stressful and costly aspects of care and a contribution to morbidity and prolonged hospital stay Research shows that there is a lack of awareness of different types of delirium among healthcare professionals in up to 66% of cases. This has a direct impact on the outcomes for patients. Within the unit, a team was created and motivated by MSc research completed by a clinical sister in the field of Delirium. The delirium team was created to improve the care and management of patients suffering from the condition, and through this work a tool was formulated to support continuous improvement in the care of patients with Delirium. To aid in the diagnosis of Delirium, the assessment tool ICDSC (Intensive Care Delirium Screening Checklist) is used in daily practice, though as with many conditions, prevention is better than cure – therefore the Delirium team has proposed and introduced the acronym “GHOSTMIND” which can be used to reduce the risk of Delirium through preventive methods. The aim of the Delirium team is to communicate the paradigm shift needed to fully institute tailored treatments for patients and their families in dealing with the symptoms of Delirium.

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**GOAL DIRECTED SEDATION (GDS) FOR IMPROVING QUALITY OF CARE**

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**Aim:** To describe a quality improvement project regarding sedation titration.

A goal directed approach has become routine in the ICU. Clinical goals such as glucose or blood pressure control are relatively easy to reach however appropriate sedation is more difficult to achieve. Balancing the level of sedation is a big challenge for many clinicians. Monitoring sedation level is a complex process that requires assessment of multifactorial interventions while maintaining patient comfort and safety. GDS incorporates challenges such as variable medical staff knowledge, monitoring sedation levels, the use of behavioral scales to monitor sedation, multifactorial assessments and lack of standardized sedation target that suit all patients all the times.

A GDS project was introduced in General ICU in order to improve quality of care regarding keeping patients on light sedation. The project included approval of the director of the Center for Clinical Quality and Safety, devising a computerized sedation order, daily teaching and follow up of physicians and educating nurses. Demographic data, level of sedation, compliance to reporting sedation level, length of stay and days of intubation were collected on 50 patients before and after initiation of the project. Demographic data were similar in both groups, however a difference in the nurses’ compliance before and after the project was found (73.5% VS. 60.1%), with no statistically significant difference due to small groups.

Using this approach has some advantages. When a bedside nurse has a written sedation target, motivation and compliance to achieve that goal is higher. There is a continuity of maintaining the target sedation level while promoting patient comfort. Last but not least, improving quality of care by maintaining the light sedation has been shown to shorten the number of ventilation days and prevent complications.

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**SLEEP AND SEDATION PRACTICES OF INTENSIVE CARE NURSES: A UNITED KINGDOM SURVEY**

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**Introduction:** The use of non-pharmacological for sleep promotion are suggested as an alternative to pharmacological interventions to prevent ICU delirium (Hu et al 2015). Little is known regarding nurses’ role in ICU sleep and sedation practices.

**Aim:** The aim of this study was to undertake a survey of existing practice to determine current sleep and sedation practices in ICU in the United Kingdom.

**Setting & participants:** ICUs across the United Kingdom were surveyed as part of a larger international study. Lead nurses in each ICU completed a questionnaire which was adapted from a previous version developed in the Netherlands (Hofhuis et al 2012).

**Methods:** The Critical Care National Network Nurse Leads Forum (CC3N) distributed a cover letter and web link to all Lead Nurses in England, Wales and Northern Ireland. Questionnaires were distributed to 150 ICUs using Survey Monkey. Submission of completed questionnaires was taken as consent. Data was analysed in Excel.

**Results:** Forty-eight ICUs responded to the questionnaire. The most commonly identified reason for poor sleep quality was disturbed night/ day cycle (14%) or delirium (12%). Non-pharmacological interventions routinely used by nurses to improve sleep were reducing ICU staff noise (47%), turning room lights off (79%) and delaying routine blood work until morning (62%). However, earplugs (70%) or eye masks (83%) interventions were seldom or never used. The majority of units did not have a sleep protocol (96%). The RASS-score was the most common sedation tool (81%) used every 1-2 hours (54%) day and night (71%). Clinical assessment and sedation score (36%) were used by nurses and physicians (60%) to determine sleep medication. Remifententanil (46%) and Propofol (36%) were the most frequent medications used for sleep.

**Conclusion:** There is a need for further research to understand the challenges to enhancing sleep and sedation practices in ICU.
PAIN IN THE EMERGENCY DEPARTMENT OF A GERMAN HOSPITAL - INCIDENCE, INTENSITY AND LOCALIZATION

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Pain is a common, but little explored interdisciplinary phenomenon in the emergency department. In this quantitative survey the following questions were investigated in an emergency department of a German hospital of basic and standard care: What is the incidence of patients suffering pain during their treatment in the emergency room? Is it acute or chronic pain? Are there any differences between the attending disciplines concerning intensity and localization of pain detectable?

Only those patients were included who were treated by one of the somatic disciplines and consented, but not those who were admitted to a palliative or intensive care unit or those who were disoriented.

During the two-week study period, a total of 155 paper-based questionnaires were issued to outpatients immediately after completion of treatment, to inpatients on the day after their admission (return 64.52%; 44% male; 45% female; mean age 54.1 years).

69% of responders reported pain (of these: 79.7% acute and 15.9% chronic pain). 85.5% cited pain as a major reason for their consultation. The mean pain score before an analgesic treatment was 5.9 over all departments (n = 50) on a ten-step numerical analogue scale (internal medicine 5.8, n = 28; general surgery 7.0, n = 4; traumatology 6.2, n = 12).

A majority of patients who were treated in the internal medicine, complained of abdominal pain (45.7%), pain in several areas of the body (17.1%) or chest pain (14.3%). In general surgery, all patients complained of abdominal pain (100%), in traumatology mostly about limb (45.5%) and thoracal pain (18.2%).

In summary, pain represents a major cause for patients to consult the emergency room. Often this pain requires a targeted intervention. The localization of pain differs between the attending medical disciplines. Especially in the emergency department be an interdisciplinary pain management concept should be established.

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GROUP DISCUSSION ON NURSES IN ACUTE CONFUSIONAL INTENSIVE CARE UNIT.

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Introduction: The acute confusional syndrome presents a high incidence in intensive cares units, between the 20 and 70% depending of the type of intensive unit. In most of the times it is an underdiagnosed and undertreated pathology. The presence of acute delirium in patients admitted to intensive care units implies increased workload, increased hospital stay and health care costs

Material and methods: Descriptive qualitative study.

To gather information we will carry out a group of discussion formed by nurses that realise their asistencial work in intensive cares units of the Autonomus community of Madrid. For the sampling of the participants we will use the technicians of snow ball and sampling by purpose. It realised thematic analysis, using the proposal of Giorgi, identified in the first place units of meaning to conclude with the preparation of the subtemas of the investigation. We use the criteria of quality for qualitative studies COREQ.

Results:

The sample of the group of discussion is formed by sixteen nurses, three men and thirteen women with an average of age of 35,5 and an average of 7,5 years of experience in intensive cares units . The subjects are:
- The fault of training of the professional of infirmary in the care and treatment of the patient with acute confusional syndrome.
- The routine of the unit like triggered factor of the acute confusional syndrome
- The difficulty to get to sleep and keep it of the patients admitted in the ICU.
- The structure of the unit cone obstacle for the handle of the syndrome confusional acute.
Conclusions:
The nurses of the intensive cares units, sue more training. The routine can cause that they do not identify acute confusional syndrome. I. The structure of the ICU is perceived like a trigger factor.

IMPLEMENTING A PAIN ASSESSMENT TOOL CPOT FOR NON-SELF-REPORTING PATIENTS IN TWO INTENSIVE CARE UNITS

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Introduction: Intensive care patients experience pain while at rest and in connection with care- and treatment procedures. In non-self-reporting patients, the behavioral CPOT (critical-care-pain-observation-tool) is used to assess pain.

Aims: Determine if non-self-reporting patients were CPOT assessed 3 times/day. Identify if CPOT scores >1 at rest or >2 in activity were acted upon. Establish if CPOT scores and a plan for management of future pain were documented in the patients’ medical journal.

Method: Designation of resource nurses in practice. Development of an interdisciplinary guideline for pain. Launching of mono- and multidisciplinary education. Completion of 8 PDSA (plan-do-study-act) tests in order to apply CPOT into practice. Data collection of CPOT scores in day, evening and night shifts. Identification of relevant CPOT scores that were treated and followed up. Reviewing of 43 medical journals in order to retrieve CPOT scores and a plan for managing future pain.

Results: PDSA demonstrated a weakness in the observation contained in CPOT that resulted in a change in the treatment goals and showed that CPOT could complement the NRS scale. 84% of the patients were CPOT scored in daytime, 70% in the evening and 60% at night. 44% of the relevant scores had triggered actions. 66% of the relevant scores were followed up. The result of the CPOT assessment was recovered in 51% of the medical journals. A plan for managing future pain was found in 28% of the journals.

Conclusion: There was low correlation between pain assessment and a future plan for managing pain, perhaps due to an insufficient articulation of pain assessment and a traditional belief that pain is not a problem.

Recommandation: Interdisciplinary cooperation and doctors’ and nurses’ knowledge of CPOT must be strengthened in order to increase the link between pain assessment and a future plan for managing pain.

ELDERLY PATIENTS WITH SEDATIVES AND HYPNOTICS IN INTENSIVE CARE UNITS

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Introduction: Sedatives and hypnotics are High Surveillance Medications widely used in intensive care units with high risk of exposure to Adverse Events, especially elderly patients who have clinical and pharmacokinetic characteristics.

Aim: To describe the elderly patients using sedatives and hypnotics in the Intensive Care Units (ICU).

Setting&Participants: Study conducted in eight ICU of a Brazilian university public hospital from July to August, 2016, included patients aged 60 or more years old.

Methods: Retrospective cohort study approved by the Research Ethics Committee under the 56398116.9.0000.5392/2016 protocol. The convenience sample was composed of elderly patients with length of stay in the ICU greater than 24 hours. The collect of data occurred from a primary database. After the transfer to Excel 2010 and conference, the analysis showed descriptive statistics. The patients were classified in the protocols Anatomical Therapeutic Chemical-World Health Organization (ATC-WHO) and Clinical Practice Guidelines for the Management of Pain, Agitation, and Delirium (PAD).
Results: This study presents 257 patients, being 52.3% male, mean age 71.2 years old, 63.4% in clinical treatment and average of length of stay 8.2 days. Regarding comorbidity, patients showed average of 3.60 diseases. The risk of death measured by SAPSII was 18.0% and death output condition 25.7% of patients. The average of drugs was 17.9 per patient. In the sample, 28.01% of patients were classified in the ATC-WHO and 70.0% in PAD protocol, being that 58.0% received opioids and 38.0% received benzodiazepines.

Conclusion: Approximately 70% of patients received sedatives and hypnotics, represented mostly by PAD protocol (58% opioids and 38.8% drugs for agitation and sedation). Only 81 didn’t use any of drug listed in the study. This study is important to support the development of well-defined protocols for elderly submitted to intensive care in order to promote the safety and quality of care.

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HOW TO IMPLEMENT EARLY MOBILISATION IN ICU?

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Background: Several studies the last decade has shown the importance of physical therapy and early mobilisation in the ICU. Many organs systems are severely affected by immobilisation and studies show that mobilisation has a documented positive effect on many of them. Today patients in the ICU are less sedated and more awake. Two factors encouraging early mobilisation. ICU’s all over the world are heavily staffed and consist of different healthcare professions with different working schedules. The patient can meet a new team every day and it is important to have a program with clear mobilisation aims and individual set goals according to patient’s ability. We found there was a need to develop a strategy plan of how to implement daily patient activity. The project included compliance to prescribed daily goals, implementation of a 4 level mobilisation scale and a staff education day. A pilot study was done before the project started in 2015.

Aim: The aim with our project was to increase the physical activity of the ICU patient during every shift, at least two times a day.

Result: The pilot study showed that 49% of the patients admitted to the ICU did nor receive any physical training and there was a low compliance to the prescribed mobilisation daily aim. The preliminary results from our follow up show a positive trend of early mobilisation even with patient with multi organ failure and in need of life support. 95 % of the ICU patients had a prescribed level of mobilisation.

Conclusion: We have almost achieved our goal with receiving 100% physical activity of the ICU patient two times a day and 50% are mobilized at least three times a day.

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TRAINING AND ACTIVE MOBILIZATION IN THE ICU

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Introduction: An ICU stay can entail considerable loss of muscle mass (up to 3% daily), reduced functional level and reduced quality of life. Studies have shown that early mobilization is possible and can reduce respirator time, length of ICU-stay, maintain muscle-mass, functional ability, and provide mental wellbeing.

Aims: Mobilize ICU-patients more actively; Increase knowledge and break down barriers in regard to early active mobilization; Improve interdisciplinary collaboration between nurses and physiotherapists.

Setting & participants: A Danish 8-bed secondary ICU with twenty hours physiotherapy a week. All patients and nurses in the ICU participated.
Methods: A quality improvement project with three phases:
A baseline questionnaire survey among ICU-nurses
Interventions: Education of nurses in active mobilization and exercise, 10 hours extra physiotherapy a week and a daily allocation of individual patient training-plans based on a flow-chart
Effect assessment (November/December 2016): Individual patient interviews, nurse focus-group interviews and follow-up questionnaire survey

Results: Ad. 1: A total of 43 out of 49 eligible ICU-nurses filled in the questionnaire (88%). Responses showed that 79% of ICU-nurses normally transferred the patient passively from bed to chair. Furthermore, 31% found it relevant to ask advise from the physiotherapist in regard to mobilization, 36% read the physiotherapist notes in the hospital record, and 75% found that the physiotherapist to some or very high degree should have more influence on patient exercise and mobilization.
Ad. 2: Interventions are now well implemented, and patients exercise with individual training-plans both day and evening. The training-plan is made bed-side including the patient, the ICU-nurse and the physiotherapist. Initiatives for active mobilization instead of passive are now common.

Conclusion: A high involvement in active mobilization is now seen among the ICU-nurses, the interdisciplinary collaboration with the physiotherapists has greatly improved, and the daily training-plans are adhered to.

EARLY MOBILIZATION IN INTENSIV THERAPY (MIT-PROJECT)
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Critically ill patients may experience prolonged physical impairment after intensive care. Immobilization increase the risk of reduced functionality after hospitalization. However, it is not clear, how soon and with which intensity the patients can be exercised.
The purpose was to investigate:
a mobilizing protocol applied at critically ill patients
the effect of early systematic mobilization of critically ill patients
how soon, safe and with which intensity critically ill patients can be mobilized
The intervention project was a multicenter design with pre- and post study. 155 patients were included. 65% in the control group were excluded, while 25% were excluded the intervention group.
48 hours after intubation patients in ICU were exercised according to a mobilizations program.
A positive effect was found in patients physical function, when discharge from ICU, measured in Timed up and go (TUG), chair stand test and Barthel 20. Patients had higher Barthel score in the intervention group when discharge from ICU and five day in ward, than in the control group. At 3 and 12 months after discharge from the hospital, there was no significant difference in Barthel score. Barthel has limitation when used as a measurement method over 12 months, because of few variations in the tool.
We found a positiv difference in TUG in the intervention group at 1st and 2nd measurement. In the last two measurements TUG was slightly higher among the intervention group.
Like a growing amount of other studies that demonstrates that mobilization, is safe and that it has a positive effect on the patient’s functionality, this study also found that it was safe to mobilize the critically ill patient 48 hours after intubation, and that it has a certain effect on physical performance.
Early mobilization of the critically ill patient in ICU should be seen as part of the patient’s rehabilitation.

PATIENT MOBILIZATION TECHNIQUES FOR NURSES
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Background: Nurses all over the world have challenging workload, especially physiologically. After many hours on duty, years of mobilization patients, some will get problems with pain in the neck and shoulder. Sick leave can be a big burden and connected costs of the wards. We wanted to mobilize the patient without harm of either, the patient and the nurses by teaching the knowledge of transfer and movement assistance.

Method: First, we had a pilot project on one ICU ward for a two-years period. During that time we educated supervisors in patient mobilization techniques. The three supervisor taught the rest of the staff during a three hours course whereas they had 30 minutus of theoretical education and after that the practical classes. The pilot project was financed by the the Norwegian Labour and Welfare Administration. After the first year we found a reduction in sick leave. Most of the nurses experienced the mobilization training useful. Now, five years later every patient related ward in our clinic has patient mobilization technique supervisor, two or more depending on the amount of staff the ward has. The supervisor do educate the staff and are helping to maintain the knowledge. Further more did we get some extra equipment to make it easier to mobilize the patient. Every staff member has got training hours in how to use the equipment.

Results: Nurses found the program useful and they had less neck and shoulder problems according to a quesback done after the pilot program. The records show that the clinic in total has a reduce in sick leave.

Conclusion: The educational program for our staff will continue. Although staff in our clinic, without direct patient related work can profit from the program.

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PATIENT-ORIENTED PROCESS OPTIMIZATION IN A CENTRAL EMERGENCY DEPARTMENT

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The emergency departments of German hospitals have been facing increasing numbers of cases for many years. Meanwhile, costs and competitive pressure increase. Additionally, patients turn more and more into customers who address their wishes and needs. Patient satisfaction is closely linked to the quality claims of hospitals. The aim of this scientific investigation was to determine how satisfied patients in the emergency department are and to clarify which dimensions of satisfaction are of particular importance. Questions about patient experience allowed assessing whether there was a need for improvement of established processes, and, if so, in which ways. The aim was to make processes more patient-friendly and to optimise both process and outcome quality.

This was an empirical study with a pretest and a subsequent computerised analysis. A validated paper-based standard questionnaire on patient satisfaction in the hospital was adapted to the specific requirements of an emergency department, e.g. by adding a part that asks decidedly for pain, pretested in a small patient cohort and issued to the patients.

Only those patients were included who were treated by one of the somatic disciplines and consented, but not those who were admitted to a palliative or intensive care unit or those who were disoriented.

Overall, 184 patients according to the inclusion criteria were questioned (return: 60.3%). For patient satisfaction in the emergency department, the areas of pain relief, medical care, hygiene, nursing care and trouble-free admission processes are of particular relevance. There also seems to be a correlation between pain, analgesia received and overall satisfaction.

As a result of the study the default processes in the study hospital were optimised so that the initially triaging nurse always raises important patient parameters and performs certain obligatory medical examinations. In addition, according to the requirements from literature, a structured pain management was established.

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IMPLEMENTING DOUBLE CHECK PROCESS OF ADMINISTRATION OF HIGH RISK MEDICATIONS IN GENERAL ICU

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**Background:** Error administration of medications constitute can lead to harming patients. High risk medications are defined as drugs that can cause damage to the patient even when administered correctly. In previous studies it was shown- that 95% of errors of wrongful administration of medication can be prevented by independent and thorough double checking by health care providers. We hypothesize that an increase double checking with appropriate education and training of health care providers as cognitive process and not as routine task.

**Aim:** Evaluating the efficacy of double checking implementation of high risk medications.

**Methods:** Structuring and implementing independent double checking of administration of high risk medications.
- Mapping factors impeding the implementation of double checking.
- Defining and structuring standard independent double checking.
- Performing observations of double checking process and providing feedback to staff
- Debriefings on reported errors and presenting them in staff meetings.
- Increasing storage room for narcotics by adding a separate cabinet.
- Self reflection on errors of administration of high risk medication.

Outcome measurement: Decrease in Incidence rate of errors in administration of high risk medications per 1000 hospitalization days.

**Results:** From January 2016 to June 2016 the incidence rate of the reported errors decreased by 26% compared to the previous year (from 1.9:1000 hospitalization days to 1.4:1000 hospitalization days).

**Conclusions:** Practicing correct independent double checking, observations and direct supervision, real time feedback and reflective debriefing after each report of an error, constituted a combination of improvement actions that demonstrated effectiveness in implementing the process in the ICU.

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**WHAT IS HOT ABOUT CPR?**

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**Background:** There has been a rise in awareness among the general population regarding acquiring knowledge in basic life support and CPR techniques in order to save lives. In the CPR course emphases is placed on saving lives and less on patient safety. Adverse event during CPR include- broken ribs, liver tear, aspiration, chest wall hematoma, burns.

The aim of this case study is to raise awareness in CPR teams regarding patient safety, update on safety techniques during CPR, preventing complications

**Method case presentation:** 51 Year old male underwent out of hospital CPR as a result of VF. After finding AB unconscious and passerby started CPR until pre-hospital team arrived on scene. AB arrived at hospital, underwent PCI, stent placed in LAD. A severe complication of the out of hospital CPR, patient suffered from 2-3 degree burns on back as a result of lying on hot asphalt road, which needed intense dressings and plastic surgery consultation; after extubation patient suffered from severe skeletal chest pain.

**Results:** Patient was discharged home after 1 week hospitalization with stented Coronary artery as well as long term plastic surgery treatments.

**Conclusion:** In modern day and age mortality and survival are not our only objectives. We need to think about morbidity and preventing complications and most importantly quality of life. This case is a prime example of critical thinking of health care teams in preventing complications and promoting quality of life

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**ESTABLISHING A NATIONAL DATABASE FOR MEDICAL ERRORS**

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Background: The recent literature describes medical errors as the third cause of death in the US. An adverse event is defined as an unexpected, unwanted occurrence that can cause harm to the patient. In Israel, there is no estimation regarding the incidence of medical errors in patient care, and the medical system in Israel and over the world suffers from sub reporting of adverse events in relation to the estimated incidence of medical errors and that happen in each medical intervention.

Aims: National analysis of the adverse events and near miss events in order to locate high risk medical interventions or specialties for patient safety and accommodating systemic solutions and improvements for lowering those risks.

Methods: Developing computerized system for direct reporting from the medical institutions to the MOH Definition of basic criteria for reporting of adverse events Establishing computerized reports for analyzing the different adverse events in several stratifications Designing education programs regarding the use and implementation of the computerized program in the their institute Implementing organizational culture for medical errors’ reporting

Results: Increase of 34% in the number of reported adverse events per year (between 2014 to 2015) Increase of 10% in the number of reported near miss events Improvement in the reporting process to the MOH about adverse events and improving its accessibility to more medical institutes

Conclusions and Recommendations: Implementation of the computerized system improve significantly the ability to manage the national database for patient safety, recognizing better high risk interventions for patient safety and focused intervention in those risks. For example: data verification in the OR and in the wards, information transferred in shifts’ changes, interdisciplinary team work relations, deciphering imaging exams.

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SEVERITY AND WORKLOAD OF PATIENTS ELIGIBLE FOR ADMISSION IN INTENSIVE CARE UNIT
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Introduction: The highly specialized care in Intensive Care Unit (ICU) has been central in life saving. This requires highly specialized healthcare professionals and large technological support. Patients should be evaluated for the severity and the workload when admitted to the ICU in order to justify the need for intensive care. Aim: To identify the severity and the workload in patients who require Adult ICU admission.

Method: This is a quantitative, exploratory and prospective research. The study was conducted at the School Hospital in Clinical Hospital of Botucatu, São Paulo, Brazil. Data collection was based on the bed request in the adult intensive care unit, and in the Simplified Acute Physiology Score III (SAPS III) and Nursing Activities Score (NAS) to assess the severity and nursing workload. Data were analyzed using descriptive statistics and correlation tests. Result: The overall mean SAPS III was 30.52 (± 18.39) and the NAS overall mean was 58.18 (± 22.29). The group of patients admitted in ICU had a SAPS III score higher than the group who was not admitted (p = <0.0001); the same for the NAS (p = 0.0085). Eleven patients died while awaiting for the admission, and had a mean age 66 years, SAPS III 44.5 and NAS 96.9. The correlation between variables was positive (R = 0.52066; p = 62
EFFICACY AND COMPLIANCE WITH EARLY WARNING SCORES - THE RESULTS OF 2 SYSTEMATIC REVIEWS
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Introduction: Failure to recognise physiological deterioration in acutely ill adults, combined with a failure to seek appropriate help promptly and intervene in a timely manner, results in increased rates of cardiac arrest and unanticipated intensive care admissions. The earlier we identify the deteriorating patient and trigger competent intervention the more lives we will save. National Early Warning Scoring (NEWS) has been designed to support clinical staff in the recognition of the signs and symptoms associated with deterioration, with a view to triggering early and competent intervention.
**Aim:** To determine if early warning scores improve patient outcome and what is the compliance with these scores

**Method:** Two systematic reviews. The first exploring the effectiveness of early warning scoring and the second exploring compliance with such tools and the relationship with patient outcomes

**Results:** There is an improvement in mortality, ICU admission rates, serious adverse events, cardiopulmonary arrest and length of hospital stay associated with the use of an early warning score. Compliance with EWS is generally poor with day of the week, time of day, severity of patient deterioration, incorrectly calculated NEWS scores and inadequate lack of timely repeat assessments all impacting on patient outcome.

**Conclusion:** Despite the work that has been done to develop early warning scoring systems for recognising patients at risk of deterioration over the last decade, there remains a need to improve compliance with early warning track and trigger tools. It would be prudent to investigate staff perceptions of the barriers to recognition and response and identify strategies to decrease these. This work has the potential for national impact, improving the way we implement measures to improve the management and clinical outcomes of acutely ill patients.

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»BLAME AND PUNISHMENT« IN EMERGENCY NURSING CARE

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**Introduction:** The poster will demonstrate how nurses in emergency department experience their recognition of professional errors and whether their further professional work is tainted with the experience of being punished in some working aspects.

**Aim:** The aim of the research is exploring the recognition of errors that happen during nursing care process and may have effect on the patient recovery. Confessing errors is still a taboo among nurses. We are not asking ourselves enough why the error happened and what can be done for not repeating it.

**Setting & participants:** Participants; nurses working at Emergency Medical Unit of Division of Internal Medicine, University Medical Centre Ljubljana and performing nursing care.

**Questionare:** anonymous, close-ended type of questions.

**Data processing:** statistic processing of the results and comparison with other related researches results.

**Methods:** Survey questionnaire, literature review, search for parallels with other related researches.

**Results:** In case of error during the nursing care process insufficient time and energy are devoted to emergency nurses.

**Conclusion(s):** The need of increased supervision, education and other elements that empower confidence and enable nurses to learn from errors for their future work, strengthen professional knowledge, self-aware and professional team dynamic were recognised.

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CONTENT AND CULTURAL VALIDATION OF AN IHI ICU ADVERSE EVENT TRIGGER TOOL FOR FINNISH INTENSIVE CARE

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**Introduction:** Adverse events are common in intensive care. They cause human suffering, increased costs, length of hospital stay and death. Identification, recognizing and measurement of adverse events are the central aspects to ensure patient safety and quality of care. Currently there are only few accurate methods to identify and measure harms with intensive care patients. One practical approach measuring and identifying harms and adverse events associated with intensive care is the Trigger Tool methodology.

**Aim:** To translate and evaluate the content and cultural suitability of the international ICU Adverse Event Trigger Tool for Finnish intensive care environment.

**Methods:** The tool was translated from American English to Finnish by two licensed translators and were evaluated by fourteen intensive care experts (N=14). A cross-cultural relevance and the content of the tool were evaluated by using modified Content Validity Index and free word comments and proposals. Unanimity of the evaluations were calculated by percentages. Comments and proposals were analyzed by content analysis.
Results: According to intensive care experts’ agreement out of 24 triggers ten were well suitable (unanimity ≥ 80 %), twelve quite (unanimity ≥ 40–< 80 %), and two not suitable (unanimity < 40 %) to Finnish ICU Adverse Event Trigger Tool. The comments and proposals concerned the importance of clarity and accuracy of the terms and words used in a new culture.

Conclusions: According to the study results the original IHI ICU Adverse Event Trigger Tool is not feasible for the Finnish intensive care as such. Based on evaluations by experts showed that the content of the tool is partly out of date and it is not suitable for today’s intensive care as such. The tool proved to be insufficient and it requires supplementing and updating.

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ENHANCED RECOVERY PROGRAM (ERP) - A STEP TOWARDS SAFER CARE

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In the 1990s, Professor Henrik Kehlet introduced the concept of Enhanced Recovery After Surgery (ERAS), otherwise known as “fast-track” programs. ERAS protocols are evidence-based, multimodal perioperative care pathways designed to standardize medical care, improve outcomes, and lower health care costs.

In order to improve patient outcome after surgery, Karolinska University hospital (KS) in Sweden has developed a variety of Enhanced Recovery Programs (ERP), similar to ERAS, within a number of clinical areas such as liver-, pancreas- and esophagus surgery.

The purpose of ERP was to integrate surgical and anesthesiological interventions in order to lower postoperative complications and shorten hospital stay. The key elements of ERP included preoperative counseling (e.g. surgeon, anesthesiologist, physiotherapist, contact nurse and dietician), optimization of nutrition, standardized analgesic and anesthetic regimens and early mobilization. At last, a check-list contributed to enhanced compliance among both health personnel and patients.

Six months after introducing ERP for esophagus surgery in 2014 an evaluation took place which, among others, demonstrated a reduction of respiratory complications from 40 to 17 percent. In addition the anastomotic leakage lowered from 30 to 13 percent. Finally, introduction of ERP esophagus contributed to shorten hospital stay, from 20 days to a median hospital stay of 16 days.

The most important parts of ERP were found to be preoperative patient education, early start of operation, targeted fluid treatment, 45° inclined position in bed and early mobilization.

Altogether, ERP seems to be a successful concept by which postoperative complications and hospital stay are reduced.

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NURSING WORKLOAD IN BRAZILIAN INTENSIVE CARE UNITS IN 2012 AND 2016

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Introduction: The Nursing Activities Score (NAS) is an important instrument to measure the nursing workload in Intensive Care Units (ICU). The analysis of the nursing workload could contribute to the adequacy of the patients’ demands and nursing resources in order to assure the quality of care. Aim: To analyze the nursing workload measured by NAS in 2012 and 2016.

Setting & Participants: Study conducted in eight ICU of a Brazilian university public hospital from September to December, 2012 and from June to August, 2016, included patients aged 18 years or older.

Methods: Prospective cohort study approved by the Research Ethics Committee under the 0196/2011 and 4998515.0.3001.0068/2016 protocols. The NAS was applied to measure the nursing workload. The clinical and demographic variables of patients were SAPSII in 2012 and SAPSIII in 2016, comorbidity, clinical/surgical treatment, length of stay (LOS), output condition, age and gender. The data were analyzed by the descriptive statistics and the linear regression test. The analysis considered 5% of statistical significance.
**Results:** Comparing respectively 2012 and 2016, the study found 614 and 265 patients with 60,09%/55,84% male, mean of 53/49 years old, 55,21%/55,09% of clinical treatment, 20,19%/34,34% death output condition, 18,0% SAPSII/35,2% SAPSIII, 1/1,39 mean of comorbidity, 7/15 LOS. The NAS average in 2012 was 71,37% with confidence interval [70,22-72,52] and in 2016 it was 93,22% [91,60-94,84], with statistically significant difference (p<0,05). The variable type of treatment presented mean of surgical patients higher than clinical in 2012 and 2016, with important increased of the rate of the surgical treatment between 2012 and 2016. The increased of surgical treatment was associated with the increased NAS average (p=0,004).

**Conclusion:** Surgical patients contributed to increase the NAS in 2016. This study is important to promote the organization and the adequacy of nursing professionals, mainly considering surgical treatment to promote quality of care.

**DEVELOPMENT OF A CLINICAL INTERVENTION PROJECT CONCERNING ICU PATIENT ROOM ENVIRONMENT: AN APPLICATION OF MEDICAL RESEARCH COUNCIL’S (MRC) FRAMEWORK.**

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The actual project was carried out in a patient room in a general Intensive Care Unit (ICU). The project was planned with the help of the Medical Research Council's (MRC) framework for accomplishment of complex clinical intervention research. Few studies exist on the subject empirical intervention projects in intensive care. Knowledge of the impact of the concept evidence-based principles is of interest for researchers working with the development of the clinical practice in relation to safe and enriching environments. However, the subject is of outmost importance for professional health carers as environment indeed influence their daily work.

The research question considered whether a refurbishment of a one two-bed patient room in a general 12-bed ICU according to evidence-based design principles could promote and accelerate patient health, recovery and wellbeing compared to an ordinary ICU patient room. The latter meant that an identical room was kept as a control. Evaluation of the project comprised patient, next of kin and staff perspective and the use of various methodological approaches. Principal concepts, theoretical underpinnings and ethical and methodological aspects when implementing and evaluating a complex intervention in an ICU according to the MRC's framework were viewed from a caring science perspective.

The MRC’s framework provided a good and structural guidance in planning, implementing and evaluating the complex intervention research concerning ICU environment. Principles identified from the knowledge field evidence-based design adds an important contribution to patients' wellbeing and recovery as well as bringing positive aspects to their families' situation. More knowledge is needed concerning the impact of environmental components in the ICU patient room also in relation to staff's working conditions, safety and wellbeing.

**WHAT DOES EMPOWERMENT MEAN IN A CRITICAL CARE CONTEXT?**

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**Introduction:** Empowerment is a widely used concept referring to managing challenges and overcoming the sense of powerlessness. Critical care patients and their next of kin often experience powerlessness and critical care staffs are frequently exposed to demanding situations. Empowerment may therefore be a useful concept in the critical care, but has then to be defined in this context.

**Aim:** The purpose of this study was to analyse how the concept of empowerment is defined in scientific literature in relation to critical care. As empowerment is a mutual process affecting all individuals involved, the perspectives of not only patients and next of kin but also staff were sought.
Method: A literature review and a concept analysis based on Walker and Avant’s analysis procedure was used to identify the basic elements of empowerment in critical care. Twenty-two articles with a focus on critical care were discovered and included in the investigation.

Results: A mutual and supportive relationship, knowledge, skills, power within oneself and self-determination were found to be the common attributes of empowerment in critical care. The results could be adapted and used for all parties involved in critical care – whether patients, next of kin or staff – as these defining attributes are assumed to be universal to all three groups, even if the more specific content of each attribute varies between groups and individuals.

Conclusion: Even if empowerment is only sparsely used in relation to critical care, it appears to be a very useful concept in this context. The benefits of improving empowerment are extensive: decreased levels of distress and strain, increased sense of coherence and control over situation, and personal and/or professional development and growth, together with increased comfort and inner satisfaction.

A MIXED-METHODS APPROACH FOR CONDUCTING A PROCESS EVALUATION OF TRIALS OF COMPLEX INTERVENTIONS IN THE CRITICAL CARE SETTING

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Aim: This presentation will outline the method and the value of conducting a process evaluation alongside a critical care trial.

Outline: Complex critical care trials pose methodological challenges as they comprise a number of interrelated and interdependent components, the effects of which can be difficult to disentangle. Consequently, there is a need to understand how interventions do/do not work, the extent to which they are implemented as intended, and how participants react to them. Furthermore, multi-centre trials are susceptible to variations in context and how the trial is delivered. In order to understand the question ‘does it work?’ in a way that distinguishes between intervention and implementation failure, complex interventions require an evaluation of the process of intervention delivery. Process evaluation provides qualitative information about how the trial was implemented and will thus help to explain the outcomes of a study. For example, if an intervention shows no beneficial effect, a process evaluation can identify whether the intervention or implementation was inherently faulty. Methods such as semi-structured interviews and focus groups are conducted at the beginning, middle, and end of the trial to explore clinician experiences with the trial in the context of their site, including those relating to barriers and facilitators to the delivery of the intervention.

Recommendations: Many nurse researchers excel in qualitative research and are thus well placed to conduct process evaluations alongside trials. Furthermore process evaluations offer a way of understanding the context of evidence derived from trials.

THE RELEVANCE OF REALIST REVIEWS TO CRITICAL CARE NURSING

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The importance of evaluation in healthcare is well recognised as it facilitates judgement to be made about the impact of interventions and the efficaciousness of new practice. When implementing a healthcare intervention there is always an underlying theory about how the intervention should work: if we do X in this manner, then it will bring about a better outcome. Realist evaluation is a theory-based model which seeks to identify underlying components that are needed for an intervention to work. Underpinned by the generative model of causality, realist evaluation holds that to infer a causal outcome (O) between two events (X and Y), the underlying mechanisms (M) that connects them and the context (C) in which the relationship happens, needs to be understood.
This strong emphasis on causation makes realist enquiry particularly suitable for review on complex interventions that involve human decisions and actions. Fundamentally, in unpacking the context-mechanism-outcome (CMO) relationship by which an intervention works (or fails), a realist review is concerned with providing an explanation rather than a judgement. So, the question changes from ‘what works?’ to ‘what is it about this intervention that works for whom and in what circumstances?’ Utilising a realist review approach has enabled the existing body of evidence to be drawn upon and an explanatory understanding of how patient diaries work in supporting the psychological health of ICU patients to be produced. Insights into which populations benefit, in what ways and in what circumstances have also been produced.

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PSYCHOMETRIC ASSESSMENT OF THE POLISH VERSION OF THE BEHAVIORAL PAIN SCALE IN INTUBATED CRITICALLY ILL PATIENTS

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Aim: To examine the reliability and validity of the Polish version of behavioral pain assessment scale.

Design: A prospective, repeated-measure, observational study.

Setting and Subjects: A convenience sample of twenty-eight adult, non-communicative, mechanically ventilated, ICU patients were included in the study. Pain assessment was conducted at rest, during non-painful and painful procedures. The pain assessment in the non-painful phase was performed with an indirect measurement of blood pressure with an arm cuff and in the painful phase during tracheal suctioning or turning the patient in bed. Additionally the physiological indicators of pain were monitored during observation phases.

Results: The Cronbach-α coefficient for Polish version of BPS was 0.6883. Reduction in the number of component domains decreased the internal consistency of the scale. Principal component analysis showed that all three domains of BPS formed separate factors and explained 63.9% variance of pain expression. There was a significant difference between the pain scores during three observation phases (Friedman’s test: Chi² (df=2, N=156) =236.46 p<0.001). The value obtained from the Kruskal-Wallis ANOVA rank test for multiple comparisons of BPS scores was H (2, N= 468) =256.0519 p =0.000. Discrimination validity of the scale was not proved, the value of pain assessment increased significantly during non-painful procedure. The U Mann-Whitney test demonstrated no significant differences between scores obtained by assessors in each of the observation phases. The value of Fleiss’ kappa indicated that the greatest consistency between raters was in the rest phase (0.52) and the lowest in the painful phase (0.22). The analysis of variance demonstrated a statistically significant difference in the values of physiological indicators of pain (SBP, DBP and MAP) between observation phases.

Conclusions: Psychometric parameters of Polish version of BPS should be further monitored. It is necessary to define precisely the descriptors used in the scale and to implement a personnel training system.

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GLOBAL SELF-ESTEEM AND SOCIO-DEMOGRAPHIC VARIABLES AS PREDICTORS OF BURNOUT SYNDROME AMONG POLISH NURSES

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Introduction: As described by Rosenberg, self-esteem is a positive or negative attitude towards ‘Me’, a kind of global assessment of one’s self and is related to social functioning. As studies show, it may be related to burnout, which manifests itself as fatigue, mental and physical exhaustion.

Aim: Analysis of the relationship between global self-esteem, selected socio-demographic variables and the burnout syndrome among nurses in intensive care and the operating theater.

Setting & participants: The study included 253 nurses in 23 hospitals in Poland. The mean age was 42.25±8.28 years.
**Methods:** Diagnostic survey was conducted and for the data collection a questionnaire of our own design and the Copenhagen Burnout Inventory Scale and Rosenberg Self SES were used. The statistical analysis used descriptive statistics, sten scores, and Spearman’s Test(r). The level of significance was $\alpha=0.05$.

**Results:** The analysis shows that 26.48% of patients have the presence of symptoms specific to work-related burnout, 24.9% points to burnout in contacts with patients and 22.53% experience personal burnout. Nurses who experience work-related burnout, at the same time with same strength burnout in contacts with patients ($r=0.79; p<0.001$). The relationship is considerable. Rate of self-esteem was at an average ($M=30.11, SD=4.08$). A quarter of respondents showed low/very low self-esteem. It has been shown that low self-esteem promotes the development of burnout—there is a negative relationship with the area of personal burnout ($r=-0.27; p<0.0001$), work-related burnout ($r=-0.21; p<0.0004$) and burnout in contact with patients ($r=-0.18; p<0.003$). There was a negative relationship of self-esteem with financial situation ($r=-0.20; p<0.001$) and the type of job ($r=-0.13; p<0.03$) and positive with education ($r=0.13; p<0.03$). Personal burnout negatively correlated with financial situation of nurses ($r=-0.18; p<0.003$).

**Conclusions:** The relationship of self-esteem and burnout syndrome was confirmed. Nurses with a lower self-esteem often experience symptoms of burnout. It is advisable to carry out preventive measures and education in the working environment, to protect nurses against burnout.

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**POSITIVE ORIENTATION AND THE PERCEIVED QUALITY OF INTERPERSONAL RELATIONSHIPS IN THE WORK OF POLISH NURSES**

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**Introduction:** There is evidence showing the impact of social acceptance on a positive orientation. The level of social approval refers to generalized self-esteem in interpersonal relations and reflects the sociometric position in the group.

**Aim:** Analysis of the relationship between positive orientation and interpersonal relations in the work environment of nurses anesthetic.

**Setting & participants:** The study included 253 nurses working in intensive care units and the operating rooms in 23 hospitals in north-eastern Poland. The mean age was 42.25±8.28 years.

**Methods:** Diagnostic survey was conducted and for the data collection a questionnaire of our own design, containing questions on demographics and interpersonal relations, and the scale of Positive Guidance by Gian Vittorio Caprara et al. in Polish adaptation were used. The statistical analysis used descriptive statistics, sten scores, and Spearman’s rank correlation ($R$). The level of significance was $\alpha=0.05$.

**Results:** The mean index of positive orientation in the test group was on average level ($M=28.98; SD=4.26$). In the sten scale, 29.25% of respondents rated the positive orientation at low level, 47.43% at average and 23.32% at high. A positive, weak relationship has been demonstrated between the level of positive orientation and education of the respondents ($R=0.16; p=0.01$) and a negative with financial situation ($R=-0.33; p=0.00001$). Statistically significant positive correlation was observed between the positive orientation and interpersonal communication: nurse-nurse ($R=0.24; p=0.0001$), the nurse-superior ($R=0.17; p=0.008$), nurse-physician ($R=0.29; p=0.0001$), nurse-other medical personnel ($R=0.17; p=0.005$), nurse-patient/family/caregivers ($R=0.21; p=0.001$). Nurses showing higher levels of positive orientation cope better in interpersonal communication in the workplace.

**Conclusions:** Nurses involved in the study recognized the mutual relationship between the positive orientation and interpersonal relations, which translate into the quality of cooperation between the professional groups. In the field of organizational activities it is reasonable to strengthen the proper interpersonal relationships with colleagues and superiors, which are essential to ensure proper quality management process of nursing teams in intensive care and the operating theater.