EfCCNa
European federation of Critical Care Nursing associations

10th EfCCNa Congress

Navigate the future - realise sustainability in ICU

Bologna, Italy ● 12-15 March 2025

ABSTRACTS

www.efccna.org

EfCCNa 2025 - ABSTRACTS

TABLE OF CONTENTS

Please note that the abstract texts have not been checked for any errors in spelling, grammar or scientific fact. The abstracts have been reproduced as submitted by the authors.

PLENARY PRESENTATIONS (PLE)

PLE01

ICU movement for sustainability

Heather Baid[1]

[1] University of Brighton, Brighton, United Kingdom

The planetary health crisis significantly damages public health, meaning climate change and other ecological issues are increasingly important to all healthcare professionals, including intensive care nurses. Firstly, healthcare system adaptation is needed to become more resilient to the impact of air pollution, extreme weather events and food and water insecurity on intensive care admissions, care delivery and environmental, financial and social resource availability. Secondly, mitigation is required to lower healthcare's ecological footprint, which is 4.4% of greenhouse gas emissions globally. If rated as a country, the healthcare sector would be the 5th most significant contributor to emissions.

The nursing profession comprises a large proportion of a hospital's workforce, offering an excellent opportunity for intensive care nurses to collectively improve their hospital's resilience and sustainability. ICU Green Teams also have great potential to address the environmental impact of intensive care's large consumption of medicines, single-use plastics and energy by promoting a circular economy to reduce, reuse and recycle where possible, leading to more sustainable procurement, product utilisation and waste management. Furthermore, sustainability requires ethical procurement by considering labour rights and fair-trade principles to ensure that producing intensive care products is not exploitative or harmful for those in the healthcare supply chain.

This keynote talk will explore the role of intensive care nurses in urgently adapting to the impact of planetary health issues on healthcare and in providing nursing care that is environmentally sustainable, financially affordable, and socially responsible. Sustainability implications for intensive care nursing clinical practice, management, research, quality improvement and education will be discussed.

PLE02

Artificial Intelligence in the ICU, how can it help us?

Louise Rose[1]

[1] King's College London, London, United Kingdom

Background: Artificial Intelligence (AI) has the potential to revolutionize the way we deliver ICU care. The sheer volume, granularity and continuity of data collected in ICU allows for detailed analysis of clinical trajectories over time, identifying new trends and patterns. These data are generated through monitoring, life support technologies, and documentation in the electronic medical record by the ICU team and other specialties.

Aim: The aim of this presentation is to discuss ways in which AI may revolutionize ICU care, the current evidence base, and challenges of incorporating AI into routine practice.

Discussion: Given it ability to analyze vast amounts of routinely collected data, one key role of AI is predictive analytics with techniques including machine learning and natural language processing. AI generated predictive models have been developed for numerous use cases including outcome prediction (sepsis, pneumonia, pressure ulcers), and need for therapies such as mechanical ventilation. Generative AI and use of large language models can evaluate text in the electronic medical record to generate nursing and medical summaries in a fraction of the time humans take. AI-driven decision support systems can produce real time and personalized recommendations based on best evidence and individualized patient data. Ambient AI can be used to facilitate decision support using sensors and video. AI can also be used to automate routine tasks.

Yet there are numerous challenges associated with using AI in critical care and implementation is currently limited. These challenges include data quality, need for clinical validation, trust and transparency, need for data standardization, as well as regulatory and ethical challenges.

Conclusion: AI holds immense potential to transform critical care practice by enhancing predictive capabilities, improving decision support, improving diagnostics and increasing efficiencies. There is an Imperative to address associated challenges to ensure that the integration of AI is both ethical and effective.

PLE0301

Reevaluating Oral Care Practices: The Impact of Tooth Brushing and Antiseptic Use in Clinical Settings

Elena Conoscenti[1]

[1] ISMETT IRCSS UPMC, Palermo, Italy

Oral care is a critical component of overall health, with significant implications for both oral and systemic well-being. Despite its importance, oral health is often underemphasized in clinical practice, particularly in nursing, where standardized oral care protocols are frequently inadequate. Oral health assessment is essential for identifying early signs of oral disease and potential risks, enabling timely interventions that can prevent complications and improve patient outcomes. Recent literature has shifted the perspective on the use of antiseptic mouthwashes, particularly chlorhexidine. It has been shown that chlorhexidine can disrupt the nitrate-nitrite-nitric oxide (NO) pathway, which is vital for vascular and immune health (Blot 2010). This disruption occurs as chlorhexidine eliminates bacteria necessary for converting nitrates into nitrites and NO, potentially increasing the risk of sepsis, organ failure, and ischemic events. In light of this, tooth brushing has become recognized as a more effective method for maintaining oral hygiene, especially in high-risk patients.

A significant trial by Dale et al. (2021) demonstrated that removing chlorhexidine from ICU protocols improved oral health outcomes without affecting mortality rates. This suggests that alternatives such as tooth brushing may be more effective in preventing oral infections while maintaining oral health. Additionally, the use of moisturizers plays an important role in preserving oral mucosal integrity, particularly in patients suffering from xerostomia or those at risk of mucosal damage due to medication or prolonged ventilation.

Implementing evidence-based oral care protocols, which include regular oral health assessments, tooth brushing, and careful consideration of antiseptic mouthwashes, offers substantial benefits. These practices can enhance oral hygiene, reduce the risks of healthcare-associated infections, aspiration pneumonia, and other complications, ultimately improving patient outcomes in critical care settings.

PLE0302

New Algorithms for Airway Management

Ida di Giacinto, MD

Airway management can present critical issues, often unforeseen, that can put the patient's safety at risk in the operating room, intensive care unit, during intra-hospital and extra-hospital emergencies.
The evolution of evidence in the literature and technological innovation requires continuous training updates on the use of algorithms, new devices and techniques: these concepts apply to all medical and nursing staff, each for their own area of expertise. Oxygenation and hemodynamic stability are paramount in patients with a physiologically difficult airway.
The wide range of newly introduced and marketed devices, despite having expanded the number of equipment intended to solve difficult cases, does not always meet expectations and guarantee the safety of the result; moreover, the analysis of their effectiveness is not always easy on the basis of literature alone. The acquisition of decision-making skills, based on knowledge and technical and non-technical skills are the cornerstones to optimize patient safety in an ever-increasing complexity of care and increasingly critical and fragile patients.
The literature agrees in demonstrating that mortality linked to airway management is still mainly due to organizational deficiencies, insufficient communication between team members and inadequate strategy, especially in terms of prediction of difficulty.

PLE04

Creating a clinical research environment to sustain excellence

Leanne Aitken[1]

[1] City St George's, University of London, London, United Kingdom

Clinical research activity is widely recognised as bringing benefits to the clinical environment, specifically to the patient, staff and the organisation. Patient benefits include improved patient and carer experiences, better quality of information and care and lower patient mortality. Staff benefits include improved work variety and interest and diversity in work roles, while organisational benefits include improvements in service provision and cost-savings and efficiencies.

A multi-dimensional programme of strategies may be employed to enable a positive clinical research environment – adaption of different strategies to different settings and contexts is an important consideration. Core to these strategies is a vibrant and effective clinical research team. Such a clinical research environment creates potential for sustained practice change, improved patient outcomes and increased staff satisfaction with both the opportunity to be involved and the reward of seeing the benefits achieved.

PLE05

International exchange - The path towards new knowledge and improvement of practice

Jelena Slijepčević, RN, MsN[1]

[1] Department for Education and Professional Development UHC Zagreb, Zagreb, Croatia

Sharing knowledge and expertise had always significant impact on the nurses' personal awareness, professional development and competence development. Meeting people in unfamiliar situations over a period in different cultural settings also helped to strengthen their cultural competence.

European federation of Critical Care Nursing associations long time ago realised and embedded such kind of learning in its pillars by developing exchange programme. From the beginning of early 2000, Council of Representatives formed committee who have started preparations for the implementation of the program by collecting data from hospitals in Europe that were willing to participate and receive nurses from other countries. Exact plan and guidelines were created according to which the exchange is carried out and everything was well structured and thought out so that each candidate gets the best out of their visit to another hospital.

One of the most crucial benefits from doing exchange is discovering what the nurse profession means globally. After all, nurses' methods, practices, beliefs, and values differ depending on where you live and for which cultural background you are coming. Nursing abroad allows us to share the skills and knowledge from our country and culture with equally dedicated people abroad. Also, if we keep an open mind, we can gather knowledge and techniques which we can implement and use in our country. There are many benefits if we use the possibility of exchange, and this paper presents experience of nurses who have gone through the programme. The best examples came from personal experience and provides the most realistic representation of international exchange program quality.

PLE06

How to Prepare Patients and Family

Marie Madlen Jeitziner[1]

[1] University Hospital Bern

The burden on patients and families in the intensive care units (ICUs) is high. Family- and person-centered care, designed to support these individuals, often presents a challenge for patients and families. This is especially the case for particularly vulnerable relatives such as children and adolescents, the elderly, socioeconomically disadvantaged individuals, ethnic minorities and people with chronic or special medical needs. In addition, experiencing one's family in a new role is a significant situation for a patient. Concrete, vulnerability-reducing approaches to family- and person-centered care are needed. This presentation will discuss strategies that view both patients and families as integral parts of the treatment team in the ICU.

ORAL ABSTRACT PRESENTATIONS (OP)

OP01 PATIENT SAFETY

OP0101

Evaluating the Impact of Safety Fact bulletins on Blood Administration Practices in ICU

Dorit Weil Lotan[1, 2], Tal Ilsar[2]

[1] The Academic College Tel Aviv Yaffo, Yaffo, Israel
[2] Hadassah Hospital, Jerusalem, Israel

Introduction: While safety fact bulletins are commonly used in healthcare settings, limited evidence exists regarding their effectiveness in improving patient safety outcomes.
Since the publication of "To Err is Human" in 1996, patient safety has become a central focus in healthcare.
In ICUs the frequency of blood type and crossmatch procedures is notably high, which can lead to near-miss bulletins events in blood administration. These events are often mitigated by laboratory intervention. Despite existing protocols, errors in blood type identification persist, posing significant risks.
Aim: This study aimed to assess the effectiveness of distributing safety information bulletins, providing detailed case study of a real incident describing a failure in blood type and cross-matching, in reducing near-miss events in blood administration.
Setting & Participants: ICU staff who routinely handle blood type and crossmatch procedures were the study participants.
Methods: A mixed-methods approach was employed. Information bulletins, based on a real-life near-miss event, were distributed among staff, emphasizing the correct sequence of actions in blood cross-matching. Data collection included quantitative measures of near-miss incident reports both before and after the introduction of the bulletins. Staff perceptions of the case study and its relevance to their daily practice were also assessed via qualitative surveys. Ethical approval was obtained for all aspects of the study.
Results: Preliminary data indicate a positive reception to the information sheets, with staff expressing high levels of identification with the described case. Final results regarding the long-term impact on error rates will be published following a quarterly follow-up.
Conclusion: The use of safety information bulletins in ICUs has the potential to reduce errors in blood administration. This intervention promotes adherence to correct procedures, offering a practical, low-cost strategy for enhancing patient safety in critical care settings.

OP0102

Documentation and risk assessment of pressure injuries in Swedish Intensive Care Units

Silvana Alvina Urzua[1], Mona Ringdal[2], Lina Bergman[3], Helle Wijk[2], Carl-Johan Cederwall[2]

[1] Sahlgrenska University Hospital, Gothenburg, Sweden
[2] University of Gothenburg, Gothenburg, Sweden
[3] Karolinska Institutet, Stockholm, Sweden

Introduction: Patients in the intensive care unit (ICU) are prone to develop pressure injuries (PI) due to risk factors as respiratory and circulatory instability, decreased perfusion to the skin, immobilisation, and malnutrition. Occurrence of PI increases both ICU-, hospital length of stay and mortality. There is a lack of data reporting documentation, risk assessment and prevention of PI from Swedish ICUs.
Aim: The aim of this study was to investigate documentation of risk assessment, occurrence, and prevention of pressure injuries in patients admitted to the ICU.
Setting and participants: A retrospective patient record review was conducted. An observation protocol was designed and tested in a pilot study of 130 patient records. The total sample consisted of 234 patient records in three different ICUs.
Methods: Data was analysed with descriptive and analytical statistics.
Results: For the total sample, risk assessments were documented in 23%, according to the Norton scale. More than half of them had a high risk of developing PI. Risk assessed patients had longer length of stay in ICU than non-risk assessed patients. Prevalence of PIs was 9% upon discharged from ICU, and 4% of all patients developed PI during their stay in ICU. Most patients had developed PI of category I, located in the sacral area. In total 55 % of the patients had documented pressure relieving treatment such as pressure relieving mattress, mobilisation and pressure relieving dressing. **Conclusions**: Documentation of preventive measures and risk assessments of PI is inconsistent and there is a need for improvement to achieve patient safety care. A more thorough and structured documentation may lead to identifying patients at risk of developing PI and can therefore prevent pressure injuries in the ICU. Finally, improvement in this area can decrease the length of stay, patient suffering, and hospital costs.

OP0103

Implementation of a medical device alert management strategy in the intensive care units to prevent Alarm Fatigue

Irit Weisbord[1], Natalie Lancman[1]

[1] Rabin Medical Center, Petach Tikva, Israel

Background: Intensive care units (ICU) are notoriously noisy places. The main source of noise is tone alerts from medical devices. The number of daily tone alerts in the ICU ranges from 700 to 2000, 72–99% require no clinical intervention.
An environment with constant noise may lead to alarm fatigue, which means staff may disregard or even silence the alarms. Approximately 17% of avoidable deaths in the ICU are caused by alarm fatigue. Reducing noise and the number of false/ non-actionable alerts should diminish alarm fatigue.
Purpose: Increase attention to actionable alerts by reducing the number of non-actionable alerts (false alarms) in the ICU.
Methods: All alarms were recorded during 25 hours of observations. Alerts were then divided into two: those that required action and those that did not. 30% of alerts were false or non-actionable.
The noise measured at the time was 72.8 dBs, which is nearly the maximum level allowed by occupational safety regulations.
Interventions: Implementation of an alert management strategy specifying the rules for setting and adjusting parameters and prioritization of alerts.
Team training on alert types, implications, handling and correlation to clinical conditions.
Results: Following the implementation of interventions, noise levels dropped by 11%, from 72.8 to 64.8 dBs
Non-actionable tone alarms dropped from 30% to 17%.
Conclusions: Reducing unnecessary alerts is possible and may contribute to improving the safety and quality of care.
The study will continue with the development of an artificial intelligence algorithm for individual customization of patient alerts.

OP0104

Identifying dysphagia in the Intensive Care Unit: Adaptation and validation of the Gugging Swallowing Screen into Swedish

Anna Schandl[1, 2], Liza Bergström[2, 3], Jenny Selg[4], Anna Eliasson[1, 2], Mia Hylén[5], Fanny Silwerbrand[5], Linda Nymark[1], Jenny McGreevy[6, 7], Thorbjörn Holmlund[4], Patricia Hägglund[4]

[1] Södersjukhuset, Stockholm, Sweden
[2] Karolinska Institutet, Stockholm, Sweden
[3] Remeo Intensive Care Rehabiliation Center, Stockholm, Sweden
[4] Umeå University, Umeå, Sweden
[5] Skåne University Hospital, Malmö, Sweden
[6] Region Sörmland , Nyköping, Sweden
[7] Uppsala University, Eskilstuna, Sweden

Introduction: Post-extubation dysphagia is common among ICU patients. Early identification through dysphagia screening would possibly reduce the risk of aspiration.
Aim: To cross-culturally validate the Swedish version of the Gugging Swallowing Screen – Intensive Care Unit (GUSS-ICU).
Setting & participants: A prospective multicenter study of 56 adult ICU patients with endotracheal intubation exceeding 48 hours at three hospitals in Sweden.
Methods: The GUSS-ICU was translated into Swedish and used to screen all prolonged intubated patients (>48 hours) once extubated. The GUSS-ICU screen was conducted by ICU nursing staff and then compared with a gold standard Flexible Endoscopic Evaluation of Swallowing (FEES), within two hours of the screen. Sensitivity and specificity were calculated, as was the Area Under the receiver operating characteristic Curves (AUC) with 95% confidence intervals (CI).
Results: Among the 56 patients, 38 (67.9%) were identified as dysphagic via the GUSS-ICU screen. Whereas with FEES, 42 of 51 patients (82.4%) were diagnosed with dysphagia. Of these, 16 (31.4%) were classified as aspirating. Compared to FEES, the GUSS-ICU showed high sensitivity and specificity values (81% and 89% respectively) with an AUC of 0.85 (95% CI: 0.71 – 0.95). For patients with tracheostomy, the sensitivity and specificity were 100%. The inter-rater reliability showed moderate agreement (Cohen's kappa $_{K}$ = 0.501, *P* = 0.006).
Conclusions: This study indicates that the Swedish GUSS-ICU is a valid and reliable screen to identify dysphagic ICU patients. Given the negative impact of dysphagia on short and long-term patient outcomes, the Swedish GUSS-ICU is recommended as an essential first step to be used by nursing staff for early identification of dysphagia for further diagnostics and subsequent optimal patient management.

OP02 PEDIATRIC ICU CARE

OP0201

The foundation of partnership in the PICU -parents experience

Janet Mattsson[1]

[1] Https://www.usn.no/, Borre, Norway

Background: The Convention on the Rights of the Child became law in Sweden in 2020, and the child intensive care unit needs to take measures to include the child in its care regarding the child's cognitive ability, which has proven to be a challenge in person- and family-centred care. Child-centred care is a relatively new emerging concept that is not yet clearly defined. Partnerships must be based on respect and understanding starting from the *child's perspective*, where the goal is to work together with the child and parents towards a common care plan.
Purpose: The purpose is to describe parents' experience of partnership with the child and the care team in a paediatric intensive care unit, for further development of the concept of child-centered care.
Method: Qualitative descriptive design with an inductive approach. Data collection took place in a paediatric intensive care clinic through narrative interviews with 20 parents. Manifest data was analysed using inductive content analysis according to Elo and Kyngäs.
Results: Data analysis generated three categories that highlighted important elements for fostering parents' partnership at BIVA; Convey information, collaboration in the healthcare team and partnership challenges. A pattern was identified which was that security is a central component in fostering partnerships. This security and trust enabled caregiver, parent and child to become a team and a partnership to emerge.
Conclusion: When parents experienced a feeling of safety in the care, a partnership between care staff, children and parents can be achieved. A feeling of safety arises from individual information and continuity among healthcare staff in an inviting environment. To achieve a partnership at BIVA, the concept of child-centred care should be further developed and implemented.
Key words*:* Child-centred care, Paediatric intensive care, Parental experience, Partnership, Qualitative

OP0202

NURSING WORKLOAD IN PEDIATRIC PATIENTS MANAGED IN AN ITALIAN GENERAL ADULT INTENSIVE CARE UNIT

Alberto Lucchini[1], Irene Bertasi[2], Ilaria Bazzoni[2], Carolina De rossi[2]
[1] Fondazione IRCCS San Gerardo dei Tintori, Monza, Italy
[2] Post Graduate Course in Critical care Nursing - University of Milano-Bicocc, Milano, Italy

Introduction: Few intensive care units in Italy are structured to manage both adult and paediatric patients.
Objective: To analyse the nursing workload related to paediatric patients in an adult intensive care unit using the Nursing Activities Score (NAS) and determine which nursing interventions had the greatest impact on the critical care burden.
Methods: This was a retrospective, observational, single-centre study. Patients admitted from June 2006 to June 2023, aged < 18 years, with an ICU stay > 72 h, were enrolled in the final sample. The NAS has been used daily for each admitted patient since June 2006.

Results: During the study period, NAS was recorded in 6734 patients. A total of 443 patients were aged <18 years. 345 paediatric patients with a length of ICU stay of < 72 hours were excluded. Data from a final sample of 98 paediatric patients were analysed. The median age was 12 years (IQR:5-15), median LOS was 9 (6-13) and 81 (84%) patients were alive at ICU discharge. The overall median NAS score was 89 (77-100), corresponding to an ideal nursing-patient relationship of 0.89. Statistical analysis showed a significant increase in the NAS during the study period (p=0.018). Multivariate analysis showed a statistical correlation between NAS and the use of vasoactive drugs (β: 3.045 [95%: 0.05- 6.04] – p=0.04) and Continuos Renal Replacement Therapy (β: 5.597 [95%: 0.42- 10.77] – p=0.03). No statistical correlation was observed between NAS and the use of Extracorporeal Membrane Oxygenation (p=0.671) or the prone position (p=0.184).
Conclusions: The admission of paediatric patients to adult ICU correlates with an elevated nursing workload. Notably, the care demands for these paediatric cases are not solely attributed to sophisticated medical procedures, and no considerable age-related disparities were identified. Furthermore, the NAS exhibited an ascending pattern over the course of time.

OP0203

Nursing Practices and Collaboration in ECMO Care: Preliminary Results from Pediatric ICU Nurses in Israel

Semyon Melnikov[1], Alex Furmanov[2], Rim Abed Elhi[3], Nashaat Hijazi[4], Nagah Zaid[5]
[1] Tel Aviv University, Tel Aviv, Israel
[2] Hadassah Medical Center, Jerusalem, Israel
[3] Schneider Medical Center, Petah Tikva, Israel
[4] Rambam Medical Center, Haifa, Israel
[5] Sheba Medical Center, Ramat Gan, Israel

Introduction: In June 2021, the Nursing Administration in Israel issued the first director's circular outlining the role and scope of RNs in treating ECMO-supported patients (SP).
Aim: To investigate how frequently pediatric ICU (PICU) nurses in Israel perform the actions outlined in the nursing practices on ECMO circular and how perceived PICU staff support, and perceived cooperation between RNs and perfusionists were linked to nurses' implementation of ECMO practices in the PICU.
Setting and participants: This ongoing cross-sectional study includes a preliminary sample of 31 registered PICU nurses (mean age 32.0±4.05; 84% female) from four tertiary medical centers.
Methods: The questionnaire consists of three scales: nursing activities in the care of ECMO-SP (20 items, α=0.8), perceived PICU staff support (8 items, α=0.7), and perceived cooperation between RNs and perfusionists (6 items, α=0.94). Descriptive statistics and Pearson's correlations were used.
Results: The nursing activities in the care of ECMO-SP scale contained four subscales on the range 1 (never) to 5 (almost always) with the following mean ± SD and median (Md) scores: Factor 1. Nursing care of ECMO-SP not related to the ECMO device (7 items, a=0.7), M±SD=4.67±0.44, Md=5.0; Factor 2. Activities on ECMO device in emergency (5 items, a=0.90), M±SD=2.34±1.1, Md=2.20; Factor 3. ECMO device calibrating and monitoring (4 items, a=0.74), M±SD=3.43±0.97, Md=3.38; and Factor 4. Medication and blood administration through ECMO device (4 items, a=0.73), M±SD=2.83±1.1, Md=2.63. Perceived PICU staff support and cooperation between RNs and perfusionists were positively associated with Factor 2, Activities on ECMO device in emergency (r=0.55, p<0.01 and r=0.37, p<0.05, respectively).
Conclusion: PICU nurses most frequently performed non-ECMO-device-related nursing activities, while emergency activities involving the ECMO device were performed less often. Nurses who reported feeling supported by PICU staff and experienced cooperation with perfusionists were more likely to perform procedures on ECMO-supported patients during emergencies.

OP0204

Estimation of hospitalization costs in PICUs using the Pediatric Nursing Activities Score (P-NAS)

Alexandra-Stavroula Nieri[1], Stavroula Ilia[2, 3], Daphne Kaitelidou[1], Georgia Sinani[3], Konstantina Mitropoulou[4], George Briassoulis[2], Evangelos Bozas[1], Margarita Giannakopoulou[1]
[1] National and Kapodistrian University of Athens, Athens, Greece
[2] University of Crete, Heraklion, Greece
[3] Pediatric Intensive Care Unit, University General Hospital of Heraklion, Heraklion, Greece
[4] PICU "P. and A. Kyriakou" Children's Hospital, Athens, Greece

Introduction: Estimating nursing workload is an essential strategy for ICU management, helping to ensure quality of care and to manage the cost of care; however, it is unclear if the nursing workload scales can predict the cost of care for patients admitted to the Pediatric Intensive Care Unit (PICU).
Aim: To investigate the relationship between nursing workload and hospitalization costs in PICUs, and to calculate the average cost of hospitalization per patient and per P-NAS score point.
Setting & Participants: The sample consisted of 180 patients, aged 28 days to 18 years, who were consecutively admitted to three Greek PICUs over a 6-month period in each unit from January 1st to December 31st, 2021.
Methods: This was a prospective cohort study. Nursing workload for each PICU patient was measured using the P-NAS. All ethical principles were followed. Direct health costs were estimated using the bottom-up micro-costing method. Analyses were performed using SPSS with a significance level of $p<0.05$.
Results: The average total cost of hospitalization per PICU patient was €9,449.19 (95% CI: €6,672.13 - €12,226.25), with an average daily cost €1,339.92 (95% CI: €1,272.91 – €1,406.93). Over the study, the mean total P-NAS score was 93,837.70 points, indicating that each P-NAS point corresponded to €18.24. There was a statistically significant positive linear correlation between the total hospital cost per patient and the admission P-NAS score ($r = 0.315$, $p < 0.001$). A one-point increase in the P-NAS score at admission was associated with a statistically significant increase of €328.10 in the total hospitalization cost per patient.
Conclusions: The P-NAS is a useful tool for predicting hospitalization costs for PICU patients, enabling cost comparisons among PICU settings worldwide.

OP03 LEADERSHIP

OP0301

The paradox of workplace violence in the intensive care unit

Fredric Sjöberg[1, 2], Anna Schandl[1, 2], Martin Salzmann-Erikson[3], Eva Åkerman[4], Eva Joelsson-Alm[1, 2]
[1] Södersjukhuset, Stockholm, Sweden
[2] Karolinska Institutet, Stockholm, Sweden
[3] Gävle University, Gävle, Sweden
[4] Lund University, Lund, Sweden

Introduction: Conflicts with patients and relatives occur frequently in intensive care units (ICUs), driven by factors intensified by critical illness and its treatments. A majority of ICU healthcare professionals have experienced verbal or physical violence. Existing studies have focused on quantifying the prevalence of workplace violence, characterising perpetrators and victims or identifying conflict-management strategies. As yet, relatively few studies have been designed to understand the problem.

Aim: To explore and describe how healthcare professionals in ICUs experience and manage workplace violence.
Setting and participants: The study included 34 ICU healthcare professionals (14 nurses, 6 physicians, and 14 allied healthcare staff) from four hospitals in Sweden.
Methods: A qualitative descriptive analysis of semi-structured focus-group interviews.
Results: The overarching theme: "The paradox of violence in healthcare" illustrated a normalisation of violence in ICU care and indicated a complex association between healthcare professionals regarding violence as an integral aspect of caregiving, while simultaneously identifying themselves as victims of this violence. The healthcare professionals described being poorly prepared and lacking appropriate tools to manage violent situations. The management of violence was therefore mostly based on self-taught skills.
Conclusions: This study contributes to understanding the normalisation of violence in ICU care and gives a possible explanation for its origins. The paradox involves a multifaceted approach that acknowledges and confronts the structural and cultural dimensions of violence in healthcare. Such an approach will lay the foundations for a more sustainable healthcare system.

OP0302

The experiences of clinical mentors for new nursing graduates in critical care, qualifying for admission to a specialist master´s program

Lars Mathisen[1], Mons Sjøberg[1], Camilla Finsand[2], Linn Christina Aalefjær[1], Anne Lene Sørensen[2]
[1] Oslo University Hospital, Division of Emergencies and Critical Care, Oslo, Norway
[2] Lovisenberg Diaconal University College, Oslo, Norway

Introduction: The preparation of intensive care nurses differs between countries according to admission criteria, academic level, and duration of a specialist program. In Norway, change is ongoing from national criteria requiring two years of clinical experience before specialization, to admission at the teaching institution's discretion. Clinical requirements are strong in tradition but have a limited research base. This was part of a feasibility study to focus and shorten the career track of intensive care, where a hospital hired 12 newly qualified nurses for one year of critical care experience to meet admission criteria for specialist studies at a collaborating university college, and to support critical care capacity.
Aim: To describe and interpret the experiences of clinical mentors for newly qualified nurses.
Setting & participants: Nine clinical mentors from diverse critical care units at a department of critical care employing 600 nurses.
Methods: Qualitative design with focus group interview at eight months duration of new graduates´ clinical experience. Qualitative content analysis supported by a didactic relationships model.
Results: The main theme was taking part in Something completely new, demanding adaptation. In a demanding role, with limited guidance and dealing with dilemmas of concurrency, mentors adapted content and teaching strategies to a new group of mentees in transition from bachelor student to licensed practitioner. Transition included the acquisition of clinical skills needed for new graduates to progress from an observant and assistive role to a more collegial role at four to eight months of experience.
Conclusion: To support the role of mentors during changes in clinical education, strategic management may consider additional investment at the individual or unit level to move beyond coping with change and aim to facilitate professional development and job satisfaction for mentors.
This research was supported by Oslo University Hospital and a grant from Lovisenberg Diaconal University College.

OP0303

Simulation-based learning during clinical training for post-graduated nursing students in anesthesia and intensive care

Carl-Johan Cederwall[1], Mona Ringdal[1], Pether Jildenstål[2], Victoria Sjöstedt[1], Torben Nordahl Amorøe [1], Carina Sjöberg[2]
[1] University of Gothenburg, Gothenburg, Sweden
[2] Lund University, Lund, Sweden

Introduction: Specialist nurse education for students in anesthesia or intensive care introduces a new professional role in a challenging environment. Clinical training plays a central role in students' development of clinical skills, while their backgrounds and experiences vary. Simulation-based learing has proven to be safe, readily available, and establish a bridge between students theoretical and practical training. Reflection is described as a significant component in students learning during simulation.
Aim: The aim of this study was to explore students' learning through reflection capacity and experiences during simulation in connection with clinical training.
Setting and Participants: A didactic model was developed and integrated simulation with clinical learning activities before, during, and after periods of clinical training. Simulation was based upon the university curriculum for specialist nurses and performed in total two separate weeks lead by clinical nurse-instructors and university teachers.
Method: A questionnaire measuring reflective capacity were used to evaluate students learning progress through reflection capacity before and after the simulation. In-depth interviews were also conducted with students to capture their experiences and analyzed thematically.
Results: In total 78 students responded to the survey, and 14 students participated in the interviews. The survey indicated progress in reflective ability: with others, in action, on action, and in self-reflection. Interviews resulted in two themes describing students: (1) Experiences of opportunities; and (2) Obstacles to learning.
Conclusion: Students found simulation to be highly valuable and experienced conditions that supported a more equitable education, enabling them to develop skills and abilities with greater independence in both common and rare situations. Simulation enhanced the conditions for students' reflective abilities, both in collaboration with others and through self-reflection. However, the outcomes of simulation-based learning were influenced by students' difficulties in accepting the simulation environment and their perception of unrealistic elements

OP0304

Rationing of Nursing Care in Intensive Care Units: The Role of Teamwork, Safety Climate, and Healthy Work Environment

Anna Antoszewska[1], Aleksandra Gutysz - Wojnicka[1]
[1] Warmia and Mazury University, Olsztyn, Poland

Introduction: Rationing nursing care, which refers to various aspects of the required patient care that are omitted or their performance is delayed, has implications for patient outcomes and experience.
Aim: This study aimed to identify the extent of rationing of nursing care in intensive care units (ICUs) in different types of hospitals and assess the quality of nursing care, and the level of job satisfaction and its correlation with an assessment of the climate of work safety, teamwork, and a healthy work environment.
Setting & Participants: The sample comprised 226 nurses working in ICUs in North-East Poland.

Methods: A cross-sectional correlational study was carried out with 226 nurses working in the ICU. The research utilized three different tools: the Perceived Implicit Rationing of Nursing Care (PRINCA) questionnaire, which measured the rationing of nursing care, patient care quality, and job satisfaction; the American Association of Critical-Care Nurses Healthy Work Environment Assessment Tool (HWEAT); and the Safe Attitudes and Behaviours Questionnaire (BePoZa), focusing on teamwork and safety climate.
Results: Most participants were female (89.82%), with an average age of 42.47 years. The overall average score for nursing care rationing was 0.58. The mean score for the Healthy Work Environment Assessment Tool (HWEAT) was 2.7, while the BePoZa questionnaire had an average score of 3.72. The HWEAT and BePoZa scores negatively correlated with nursing care rationing, with correlation coefficients of -0.36 and -0.45, respectively. All correlations were statistically significant, with p-values below 0.05.
Conclusion: Monitoring workplace safety, teamwork climate, and maintaining a healthy work environment in ICUs is crucial in reducing the risk of rationing nursing care. Improving the key elements of a healthy work environment, teamwork climate and work safety is important in improving the quality of nursing care and job satisfaction.

OP04 DIGITAL INNOVATIONS IN ICU CARE

OP0401

Mobile Health Technology in Critical Care: Improving Patient Assessment and Outcomes

Anna Antoszewska[1]

[1] Warmia and Mazury University, Olsztyn, Poland

Introduction: The increasing demands regarding quality of care, costs, and expertise impose significant professional challenges on nurses. In intensive care units, nurses are responsible for assessing patients' conditions using various medical scales, which necessitates direct bedside observation. To facilitate this, nurses require mobile tools with applications encompassing all necessary medical scales. The absence of such tools can lead to inaccurate and delayed patient assessments, thereby adversely affecting treatment outcomes.
Aim: The primary objective of developing the MedScales application was to enhance the quality of care and simplify nurses' workflow.
Setting & Participants: Recognizing the absence of a similar application in Poland, the MedScales application was developed in December 2022.
Results: Although initially designed for nurses, MedScales has become a valuable resource for doctors, paramedics, and students as well. It is a user-friendly application that includes the most commonly used scales in nursing, with a particular focus on anesthesiology and intensive care. The application is free and available on Google Play and the App Store. Developed by practitioners, it aims to facilitate nurses' daily tasks by automatically calculating results and providing accurate interpretations. Each scale is accompanied by its source to ensure reliability. The application's result calculations are validated through automated tests to minimize errors. MedScales has been recognized for its innovation with an award from the Polish Society of Anesthesiology and Intensive Care Nurses.
Conclusion: Healthcare professionals require access to essential information and robust IT support to streamline their daily tasks and ensure the delivery of high-quality and safe patient care.

OP0402

Connect My Care App: A feasibility Study of a Person-Centred Online Mobile Application for Family Communication in Critical Care

Natalie Pattison[1], Hazel Amarado[2], Louise Rose[3], Rashan Haniffa[4], Carina Cruz[2], Abi Beane[4]
[1] University of Hertfordshire/East and North Herts NHS Trust, Herts, United Kingdom
[2] East and North Hertfordshire NHS Trust, Herts, United Kingdom
[3] Kings College London, London, United Kingdom
[4] University of Edinburgh, Edinburgh, United Kingdom

Introduction: This study explored the feasibility of "Connect My Care," a web-based mobile phone application (an m-health tool), as a family communication adjunct in critical care. We aimed to explore how families could be better involved in shared care planning (even when away from the Intensive Care Unit [ICU]) by using a mobile application (App), establishing interactive two-way communication with families and ICU teams.
Aim: To explore family members' and nurses' perceptions of the feasibility, acceptability and usability and experiences of a m-health tool (App).
Setting and participants: This was a single site study at a District General Hospital ICU involving family members of adult patients admitted to ICU with anticipated length of stay >48hrs, and nurses who used the App.
Methods/Design: We conducted a feasibility study with quantitative data from participants who tested the App using the Acceptability of Intervention Measure (AIM), Intervention Appropriateness Measure (IAM), and Feasibility of Intervention Measure (FIM) alongside analysis on App content and in-depth qualitative interviews with families/professionals.
Quantitative data was analysed and reported using descriptive statistics. Qualitative data were audio-recorded, transcribed, and analysed using Thematic Analysis.
Results: We recruited 16 family members and 1 nurse. Communication content centred on patient condition and general enquiries. Family questions focused on medications, treatment, and planned treatment schedules. 100% of those completing questionnaires reported liking Connect my Care; 88% found it appealing (AIM); 100% found the intervention appropriate (IAM), however only 71% found it easy to use (FIM).
Interview themes included: *communication facilitation; response characteristics; technical issues;* and *value of content*. Participants suggested more instantaneous responses would make it more proactive and maximise family benefits.
Conclusion: Families found the CMC app to be acceptable, appropriate, and feasible. Future challenges centre on maximising staff engagement the Connect My Care m-health App, thereby incorporating it into routine care.

OP0403

A speech recognition application as a communication aid for acute and critical care patients with tracheostomies

Carla McClintock[1], Daniel McAuley[1], Bronwen Connolly[1], Bronagh Blackwood[1]
[1] Queen's University, Belfast, United Kingdom

Introduction: Patients with tracheostomies often face distress due to voicelessness, and current communication strategies are limited. Speech Recognition Application for the Voice Impaired (SRAVI) is a new lip-reading app that tracks lip movements and identifies phrases being mouthed.
Aim: To assess the feasibility and acceptability of SRAVI for acute and critical care patients with tracheostomies who cannot communicate verbally.

Setting & Participants: One acute and three critical care units in Northern Ireland, including adults with new tracheostomies who could move their lips and communicate in English.
Methods: This prospective cohort study assessed SRAVI's feasibility by evaluating its performance accuracy and usability. Two versions were tested: Version 1 used a predefined phrase list, and Version 2 allowed free speech. Acceptability was evaluated through interviews with patients, relatives, and staff, guided by the Theoretical Framework of Acceptability (TFA). Three-month patient follow-up measured quality of life and psychological outcomes. Ethics approval was granted from the Office for Research Ethics Committee Northern Ireland.
Results: 29/31 patients (median age 61, IQR 48-67) contributed data for assessing accuracy. 468 videos were recorded: 233 (49.8%) with 24 critical care patients and 235 (50.2%) with five acute care patients. SRAVI accuracy was 21.8% (Version 1) and 34.6% (Version 2). 1,338 uses of other communication aids were recorded, with 48.8% unaided methods. 13/22 participants (59.1%) completed follow-up, with none reporting 'no problems' across all five health-related quality of life dimensions. 29 interviews with 35 healthcare professionals, nine patients, and five relatives identified key TFA constructs, noting positive attitudes tempered by challenges like patient acuity and Wi-Fi issues. Suggested improvements included optimising SRAVI for smaller devices and refining Version 2.
Conclusion: A larger trial appears unfeasible due to low accuracy and clinical challenges. Although iterative refinement may improve usability, the severity of critical illness may limit SRAVI's practical impact.

OP0404

Recovery through support and engagement; development process of a digital application

Margo van Mol[1], Mirjam Van der Veer[1], Elke Berger[1], Dewy Schoonis-Spapens[2], Hans Ter Brake[2], Marijke Van der Steen[3], Lilian Vloet[4]

[1] Erasmus MC, Rotterdam, Netherlands
[2] QULI BV, Ede, Netherlands
[3] NVIC, Utrecht, Netherlands
[4] Stichting FCIC, Alkmaar, Netherlands

Introduction: The healing process from critical illness and the impact of admission to an intensive care unit (ICU) can be long and difficult; 30-50% of survivors and 30% of relatives face mental health declines with symptoms of anxiety, posttraumatic stress, and depression. Recovery support is insufficiently accessible in a place and time to preference of survivors and relatives due to rising healthcare costs and limited human capacity in ICU follow-up services. Therefore, easy accessible digital programs in the mental health domain need to be implemented.
Aim: To develop and evaluate a digital application in the mental health domain for ICU survivors and relatives.
Quality improvement: The CeHRes roadmap served as an evidence-based development approach for e-health applications incorporating both a person-centered design and a business modelling focus. In joined forces with all stakeholders (ICU survivors, their relatives, ICU follow-up nurses, intensivists, a general practitioner, and relevant multidisciplinary representatives), a roadmap of predefined steps was followed to guide the development of a digital application in ICU follow-up service.
Findings: We have developed 'IC-HerstelWijzer' [ICU-RecoveryPointer] and 'IC-NaastenCoach' [ICU-RelativesCoach] for Dutch ICU survivors and their relatives respectively. First, needs and priorities for digital support were evaluated with an online survey (n=227). Thereafter, the perspectives of the users (n=21 ICU survivors, n=4 relatives, and n=35 professionals) on key steps in the patient journey and prototypical versions of the digital application were explored empirically in an iterative method during online meetings.

Finaly, pre-testing was conducted both online (n=12 survivors) and in-person (n=5 relatives). All participants were satisfied with their first impressions of the digital application, and experienced support and engagement that they had missed previously.
Conclusion(s): IC-HerstelWijzer and IC-NaastenCoach can bridge the gap in integrated ICU follow-up services through offering valid information, screening of symptoms, and providing psychoeducation to ICU survivors and their relatives.

OP05 REHABILITATION

OP0501
ICU mobility and functional disabilities in ICU survivors: A preliminary analysis

Renato Jr Mesina[1, 2], Tone Rustøen[1, 2], Jon Henrik Laake[1], Kristin Hofsø[1, 3]

[1] Oslo University Hospital, Oslo, Norway
[2] Univeristy of Oslo, Oslo, Norway
[3] Lovisenberg Diaconal University College, Oslo, Norway

Introduction: It is recommended to start early rehabilitation in the ICU: however, its effect on functional disabilities after hospitalisation remains unclear.
Aim: This study aimed to describe the association between levels of ICU mobility within the first seven days in the ICU and functional disabilities in ICU survivors three months after admission. The association between ICU mobility and ICU delirium, mechanical ventilation (MV) duration and ICU length of stay (LOS) were also explored.
Settings and participants: Adult ICU patients were recruited from six ICUs in two Norwegian hospitals.
Methods: This prospective cohort study assessed functional disabilities using the Katz Personal Activities of Daily Living (P-ADL) index and the Lawton Instrumental Activities of Daily Living (I-ADL) scale. Multivariate models were fitted using backward logistic and linear regressions adjusting for sex, comorbidity index, simplified acute physiologic score II (SAPS II) and pre-ICU functional status.
Results: Out of 452 ICU survivors, 280 (62%) responded to the three-month follow-up questionnaire. The median age was 60 years and 63% were males. The median SAPS II score was 40, and 195 (70%) patients received MV. After adjusting for covariates, higher ICU mobility levels during the first 7 days in the ICU were associated with lower odds of P-ADL disability at three months (OR: 0.82, [95% CI: 0.67–0.99]), lower odds of ICU delirium (OR: 0.81, [95% CI (0.67–0.97]), fewer days on MV (B: -1.31, [95% CI: -1.77– –0.84]) and shorter ICU LOS (B: -0.61, [95% CI: -0.95 – –0.26]). No statistically significant association was found between ICU mobility and I-ADL at three months.
Conclusion: Higher levels of ICU mobility was associated with no P-ADL disabilities at three months, lower odds of having ICU delirium, shorter MV duration and shorter ICU LOS. Our study emphasises the importance of early rehabilitation to potentially improve patient outcomes.

OP0502

Rehabilitation interventions as an integrated part of care in Scandinavian intensive care units. An online survey

Marie Collet[1, 2], Helle Svenningsen[3], Hanne Alfheim[4], Anne Holm[5], Anne. S Aagaard[5], Eva Åkerman[6], Anne Nielsen8[7], Ranveig Lind[8]

[1] Copenhagen University Hospital, , Copenhagen, Denmark
[2] University of Copenhagen, Dept. of Health & Medical Sciences, , Copenhagen, Denmark
[3] VIA University College, Aarhus, Denmark
[4] Intensive Care and Operating Theatre Services, Bærum Hospital, Vestre Viken , Norway
[5] Aarhus University Hospital, Aarhus, Denmark
[6] Lund University, Lund, Sweden
[7] Gødstrup Hospital, Herning, Denmark
[8] University Hospital of North Norway, Tromso, Tromso, Norway

Introduction: Research on preventive strategies to mitigate adverse outcomes after critical illness is growing; however, ICU healthcare professionals' rehabilitation approaches remain poorly defined.
Aim: This study aimed to identify and describe early rehabilitation practices in Scandinavian ICUs facilitated by nurses and other healthcare professionals.
Setting & participants: We included healthcare professionals actively involved in ICU patient care in Norway, Sweden, and Denmark.
Methods: This was a cross-sectional, multi-centre online survey using a self-administered questionnaire. The survey collected data on participant demographics, ICU-specific characteristics, timing of rehabilitation activities, types of rehabilitative measures (cognitive, sensory, physical, personal hygiene, and social stimulation), and access to post-ICU rehabilitation services.
Results: In total, 518 healthcare professionals from the three countries completed the survey (Sweden n=217, Denmark n=182, and Norway n=119). Among the 518 participants, 471 (90.9%) were employed as nursing staff, 19 (3.7%) as physiotherapists, 11 (2.1%) as doctors, 6 (1.2%) as occupational therapists and 11 (2.1%) in other positions. The participants' median ICU experience was 12 years (IQR 5;20). Respiratory treatment was provided by 98.1% (508/518) of the participants in their units. Participants reported dedicating about 40% of their working time to rehabilitation, with physical activities (e.g., sitting on the edge of the bed or in a chair) and personal hygiene assistance (e.g., washing faces, brushing teeth) as the most common interventions. Social stimulation primarily involved family visits, while cognitive and nutritional support were less commonly provided. Approximately 62.4% of respondents indicated that rehabilitative follow-up services were available post-ICU.
Conclusions: Rehabilitation practices in Scandinavian ICUs involve a range of interventions, mainly emphasizing physical activities but also integrating social and cognitive components. These activities are relevant for over 90% of ICU patients and occupy about 40% of healthcare professionals' time. Future research should explore the most effective interventions and optimal timing for implementation.

OP0503

Prediction of Intensive Care Unit (ICU)-Acquired Weakness during first week on ICU stay: multicenter external validation study

Marta Raurell-Torreda[1], Susana Arias-Rivera[2], Alfonso Muriel-García[3]

[1] University of Barcelona, Barcelona, Spain
[2] Hospital Universitario de Getafe, Madrid, Spain
[3] Universidad de Alcalá, Madrid, Spain

Introduction: To avoid a diagnostic delay of ICU-AW, we previously developed a prediction model, based on multicenter data from 642 patients (development cohort), to predict ICU-AW at days 3 at 5 of ICU admission.
Aim: To investigate the external validity of the original prediction model in a new multicenter cohort and update the model with frailty as a new predictor.
Setting & participants: ICU patients with stay>48 hours
Methods: Predictors were prospectively recorded, and the outcome ICU-AW was defined by a Medical Research Council (MRC) score<48. In the validation cohort, consisting of 411 patients, we analyzed performance of the original prediction model by assessment of calibration and discrimination. Additionally, we updated the model in this validation cohort adding frailty assessment measured with FRAIL and Clinical Frailty Scale (CFS).
Results: Of 351 patients with MRC assessment feasible in the validation cohort, 195 (55.5%) developed ICU-AW. Model calibration and discrimination of the original model was good with these patients (Calibration in the large (CITL) was 0.17 (CI 95% [-0.07;0.40]), Slope 0.93 (CI 95% [0.66;1.21]), Under the Receiver Operating Characteristic Curve (AUC-ROC 0.723 (CI 95% [0.67; 0.78]). On the other hand, when the model is validated by including patients without MRC assessment because they are unconscious, there is a tendency to underestimate ICU-AW. Model updating methods did not improved calibration and discrimination (Net reclassification improvement (NRI) was -0.2% with CFS and -0.3% with FRAIL).
Conclusions: The previously developed prediction model for ICU-AW showed good performance in a new independent multicenter validation cohort. It is confirmed that the predictor variables of ICUAW for the first 5 days of ICU stay are older age, being female, not being consciousness for MRC assessment and receiving renal replacement therapy. Protective factors are active mobility and developing hyperactive delirium. Frailty does not add value to the predictive model.

OP06 WORK FORCE AND WORK ENGAGEMENT

OP0601

Integration of care assistants in the intensive care unit nursing team; a quantitative study exploring the skill mix

Atreyu van Esch[1], Margo van Mol[1]

[1] Erasmus MC, Rotterdam, Netherlands

Introduction: Shortage of nursing staff in intensive care units (ICUs) is well-documented. New care models, involving differentiated nursing practice among specialized nurses and care assistants, could reduce workload and potentially improve quality of care.

Aim: To explore experiences of ICU nurses and care assistants working in an integrated team.
Setting & participants: ICU nurses and care assistants of two adult ICUs in the Netherlands.
Methods: The quantitative design included self-developed cross-sectional surveys at two time points. Outcomes assessed skill mix, perceived quality of care, job satisfaction, clinical leadership, and autonomy. Data were analysed using descriptive statistics.
Results: The response rate for the pre- and post-measurement among ICU nurses was 79.8% (n=95) and 48.7% (n=58), respectively. The majority (n=68, 71.6%) was positive about the involvement of carers within the team. However, 53.7% (n=51) expressed concerns about maintaining the quality of care, and 49 (51.6%) were concerned that patient safety might be compromised. Although the workload of the ICU nurses did not increase, 82.8% (n=48) reported no additional time gained for patient care. The response rate for care assistants was 84.6% (n=11). Care assistants (n=6, 54.5%) experienced working in the ICU as an enjoyable challenge, whereas a minority (n=2, 18.2%) found it too stressful. Regarding the alignment between the work in the ICU and their knowledge and skills, 82% (n=9) indicated that the work did not match their knowledge and skills.
Conclusion(s): A care model with integrated team of ICU nurses and care assistants encountered positive engagement initially. However, this enthusiasm was tempered by practical challenges, including concerns about the maintenance of care quality and potential mismatches between the competencies of carers and the demands of an ICU environment. These challenges may hinder ICU nurses' professional leadership, further threatening sustainability of the nursing workforce.

OP0602

Comparative Analysis of Burnout Levels Among Critical Care Nurses in Croatia and Poland During the COVID-19 Pandemic

Adriano Friganovic[1], Filipovic Biljana[2], Kristian Civka[1], Jelena Slijepcevic[1], Ana Brcina[3], Krupa Sabina[4]
[1] University Hospital Centre Zagreb, Zagreb, Croatia
[2] University of Applied Health Studies , Zagreb, Croatia
[3] Special Hospital Neurospine, Zagreb, Croatia
[4] Medical College of Rzeszów University, Rzeszów, Poland, Rzeszow, Poland

Introduction: The COVID-19 pandemic has significantly worsened working conditions in the healthcare sector, particularly among critical care nurses. Burnout syndrome has been recognized as a serious issue, with its occurrence linked to emotional exhaustion, depersonalization, and reduced personal accomplishment, which are key factors contributing to job stress.
Aim: To compare the levels of burnout among critical care nurses in Croatia and Poland using the Maslach Burnout Inventory.
Methods: The study was conducted among 346 critical care nurses in intensive care units in Croatia and Poland, including 163 respondents from Croatia and 183 from Poland. The Maslach Burnout Inventory, which assesses emotional exhaustion, depersonalization, and personal accomplishment, was used as the research instrument. Data were analyzed using the SPSS statistical program, employing the non-parametric Mann-Whitney test and the Chi-square test for group comparisons.
Results: The study revealed significant differences between Croatia and Poland in the levels of depersonalization and emotional exhaustion among critical care nurses. In Poland, more nurses had high depersonalization scores compared to Croatia (χ^2=7.370, df=2, p=0.025). Furthermore, a higher number of respondents in Poland experienced high emotional exhaustion (38.8%) than in Croatia (27.2%) (χ^2=8.928, df=2, p=0.012). Depersonalization was also more prevalent in Poland (χ^2=8.217, df=2, p=0.016), while there was no statistically significant difference in personal accomplishment (p>0.05). Education level in Croatia was identified as a significant predictor of high burnout (OR=0.320, CI: 0.125-0.824, p=0.018), with bachelor's degree nurses having a 68% lower chance of experiencing high burnout compared to those with a master's degree.

Conclusion: This study identified significantly higher levels of burnout among nurses in Poland compared to Croatia, particularly in the dimensions of emotional exhaustion and depersonalization. These findings highlight the need for targeted interventions and improved working conditions to reduce burnout and ensure the long-term well-being of nurses in both countries.

OP0603

Nursing Activities Score (NAS) can better predict the outcome of patients in PICUs compared to other nursing workload scales

Margarita Giannakopoulou[1], Alexandra-Stavroula Nieri[1]
[1] Department of Nursing/National and Kapodistrian University of Athens, Athens, Greece

Introduction: Nursing workload scales are considered very useful tools in daily ICU clinical practice; however the performance of nursing workload scoring systems to predict mortality risk in patients admitted to PICU has not been investigated yet.
Aim: To assess and compare the performance of Nursing activities score (NAS), Nine Equivalents of Nursing Manpower use Score (NEMS), and Therapeutic Intervention Scoring System 28 (TISS-28) in predicting the outcome (mortality and length of stay) of hospitalized children in PICUs.
Setting & Participants: The sample consisted of 180 patients aged 28 days to 18 years, hospitalized in two Greek PICUs (January 1st-December 31, 2021).
Methods: This was a prospective cross-sectional observational study. All ethical principles were adopted. Patients' nursing workload was assessed on the first day of hospitalization using NAS, NEMS and TISS-28. Areas under the ROC (AUC) curves were used to evaluate discrimination of the three scales and discrimination of the four predictive models. The Hosmer-Lemeshow (HL) goodness-of-fit test and calibration curves assessed applicability of the models to individual cases. Calibration was assessed with the Hosmer–Lemeshow goodness-of-fit $\chi 2$ estimates by grouping cases into deciles of risk. All analyses were performed using STATA13.0 ($p<0.05$).
Results: The crude mortality was 8.3%. The AUC-ROC (95% CI) of NAS, NEMS, TISS-28, for predicting mortality in critically ill children were 0.871 (0.794–0.948), 0.787 (0.684–0.890) and 0.843 (0.758–0.927), respectively. 18.9% had a hospital stay > 7 days. ROC curve analysis showed that the AUCs (95% CI) of NAS, NEMS, TISS-28 for predicting length of stay in PICU were 0.773 (0.691–0.854), 0.744 (0.659–0.828) and 0.734 (0.648–0.821), respectively. The Hosmer–Lemeshow goodness-of-fit test revealed good calibration ($p>0.05$) for all the models, expect the models with NEMS and length of stay.
Conclusions: NAS has better performance in predicting mortality and length of stay among critically ill children, compared to NEMS and TISS-28.

OP0604

Predicting the Unpredictable: Using the Nursing Activities Score (NAS) for Shift-to-Shift Resource Planning and Team Capacity Adjustment

Ann-Margret Hasselgård[1, 2], Siv Karlsson Stafseth[1, 3], Øyvind Kirkevold[4, 5]

[1] Lovisenberg Diaconal University College, Oslo, Norway
[2] Diakonhjemmet hospital, Oslo, Norway
[3] Centre for Patient Centered Heart and Lung Research, Department of Cardiothoraci, Oslo, Norway
[4] The Norwegian National Centre for Ageing and Health, Vestfold Hospital Trust, , Tønsberg, Norway
[5] Norwegian University of Science and Technology (NTNU), Department of Health Scie, Trondheim, Norway

Introduction: A balanced workload and staffing in postoperative and intensive care are vital for patient safety, nurse wellbeing, and hospital economy. When determining whether the staffing for the next shift is adequate, professional knowledge and experience are utilized. Postoperative and intensive care units globally use the Nursing Activities Score (NAS) for high-level unit planning. However, can the NAS, as an objective tool, assist bedside nurses in the decision-making process in staff planning on a shift-to-shift basis?
Aim: The purpose of this study was to explore the extent to which the workload, as measured by the NAS on one shift, could predict the workload for the next shift.
Setting & participants: The study took place in a postoperative and intensive
care unit at a local, nonprofit corporation hospital in Norway. A total of 2,695 patients and 5,916 NAS-scores were included.
Methods: This retrospective observational exploratory study used a cross-sectional design. Ethical standards and regulations were followed. Data were obtained from the hospital's internal database from January 1st to June 30th, 2016. Multiple linear regression analysis was used to investigate the extent to which the NAS on one shift could predict the NAS on the next.
Results: The model could predict a 55.1% to 66.9% variation in NAS for the next shift. When the number of patients was incorporated, the model explained up to 80% of the variation.
Conclusion(s): The NAS can be utilized to predict nursing workload from one shift to the next and serve as a tool for managers to adjust staffing requirements. In terms of practical implications. Postoperative and intensive care units can easily assess workload using the NAS, ensuring resource availability and promoting patient safety.

OP0605

Time to take the temperature of perceived workload, normal or high temperature? A national observational study

Ann-Margret Hasselgård[1], Siv Stafseth[1], Heidi Larsen[2], Stina Willadsen[3], Ann-Cathrin Melby[4], Julie Berntzen[5]

[1] MEVU, Lovisenberg Diaconale University College, Oslo, Norway
[2] St. Olavs Hospital, Trondheim, Norway
[3] Namsos Hospital, Namsos, Norway
[4] Haukeland University Hospital, Bergen, Norway
[5] Diakonhjemmet Hospital, Oslo, Norway

Aim: This study aimed to examine the workload of nurses in Intensive Care Units (ICUs) and to analyze the staffing levels across various shifts.
Design: An observational study of patients, and related to workload of critical care nurses. Both the ICUs and nursing staff participated on a voluntary basis.
Methods: The Nursing Activities Score (NAS) and the NASA-Task Load Index (NASA-TLX) were used to evaluate the workload. Data was gathered from patients' medical records, and a survey was distributed to all on-duty nurses for 14 consecutive days in each ICU. The study was conducted in Norway from November 2023 to May 2024. Descriptive and correlational statistics were analyzed using Excel and SPSS.
Results: Data from 1,007 patients across 12 ICUs - both local and university hospitals were included. The median NAS per patient and ICU ranged from 49.7% to 147%. The mean patient age varied between 52 and 67.9 years, with a median length of stay ranging from 0.9 to 25.3 hours. The survey received 3,484 responses from nursing staff, with all shifts represented and unit response rates ranging from 62% to 99%. The median NASA-TLX per ICU varied from 35 to 60.1 (scale of 0-100). Although many days exhibited normal "temperatures", two units reported high "temperatures" for more than half of the days and shifts.

Conclusion: This study found significant “high temperatures” in ICUs and nurses’ workload. These findings serve as a wake-up call for nursing leaders and department heads and should be considered a cause for concern regarding the future.

OP07 CLINICAL PRACTICE; PAIN, AGITATION, DELIRIUM

OP0701

Pain assessment in patients with acquired brain injury and disorders of consciousness

Candelas López-López[1], Teresa Pérez-Pérez[2], Ignacio Latorre-Marco[3], Gemma Robleda-Font[4], Mª Carmen Sarabia-Cobo[5], Montserrat Solis-Muñoz[3], Antonio Arranz-Esteban[1], Francisco Paredes-Garza[6], Aaron Castanera-Duro[7], Mónica Bragado-León[8], Emilia Romero-de-San-Pio[9], Isabel Gil-Saaf[10], David Alonso-Crespo[11], Carolina Rojas-Ballines[12], Group ESCID-DC[1]

[1] Hospital Universitario 12 de Octubre, Madrid, Spain
[2] Universidad Complutense de Madrid, Madrid, Spain
[3] Hospital Universitario Puerta de Hierro Majadahonda, Madrid, Spain
[4] Centro Cochrane Iberoamericano, Barcelona, Spain
[5] Universidad de Cantabria, Santander, Spain
[6] Hospital Universitario La Paz, Madrid, Spain
[7] Hospital Universitario Dr. Josep Trueta, Gerona, Spain
[8] Hospital Universitario Puerta de Hierro Majadahonda, Madrid, Spain
[9] Hospital Universitario Central de Asturias, Oviedo, Spain
[10] Hospital Universitario de Navarra, Pamplona, Spain
[11] Hospital Álvaro Cunqueiro, Vigo, Spain
[12] Hospital Universitario Miguel Servet, Zaragoza, Spain

Introduction: The validation of the Behavioural Indicators of Pain Scale-Brain Injury(ESCID-DC) has allowed us to approach the pain experience of neurocritical patients.
Objective: To determine the discriminatory ability of ESCID-DC in critically ill patients with acquired brain injury and disorders of consciousness as a function of the patient's level of sedation.
Setting-and-participants: 17 hospitals of the Spanish-National-Health-System participated. Patients with acquired brain injury, disorders of consciousness, and an artificial airway were included. Patients with previous cognitive injury/impairment; and under conditions that limited/abolished the behavioral response were excluded.
Methods: Prospective observational study. Pain was assessed at three time points: 5-minutes before/during/15-minutes after the application of painful procedures (tracheal suction, right/left nail pressure) and a non-painful procedure(gauze rubbing). Measurements were performed under two sedation conditions: deep/light-moderate sedation. The study complied with ethical research standards and consent was obtained from the participants. Discrimination ability was assessed using ROC-curves with covariates.
Results: Pain was assessed in418 patients, 68%were men with mean age of 56.2(SD=16.3) years. According to the level of deep vs moderate-light sedation Glasgow-Coma-Scale(GCS) had a median score of 6(IQR=4-7) vs 8.5(IQR=7-9). Under deep sedation, the median ESCID-DC during suction was 3(IQR=2-5) and during pressure procedures was 0(IQR0-2). Under moderate-light sedation it was 6(IQR=4-7) during suction and 3(IQR=1-4) vs 3(IQR=1-5) during right/left pressure. The non-painful procedure had a score of 0. The discriminatory ability of ESCID-DC under moderate-light sedation was adequate(AUC>0.7) for all three procedures, regardless of GCS value.

Under deep sedation, ESCID-DC discriminated well with the suction procedure, however for pressure procedures and GCS values<8 it did not discriminate adequately(AUC<0.7).
Conclusions: ESCID-DC discrimination ability is conditioned by the degree of sedation, the level of consciousness and the type of procedure. Under deep sedation, the ability to detect pain/no-pain decreases in patients with low level of consciousness during the pressure procedure.

OP0702

Live music in the ICU - A mixed-methods pilot study exploring the experience and impact of live music

Linette Thorn[1], Trine Lund[1], Ulla Otte[1], Katrine Donovan[1], Pia Dreyer[1]
[1] Aarhus University Hospital, Aarhus N, Denmark

Background: Evidence for music's beneficial effect on physical and mental disorders is mounting. Intensive care unit patients experience multiple uncomfortable symptoms,
which may be alleviated using a music-based intervention. Few studies have examined the experience and the physical impact of patient-tailored live music offered by trained health musicians in an adult intensive care unit.
Aims: To explore the experience of live music for adult patients admitted to an intensive care unit, focusing on its effects on relaxation, stress and pain.
Study design: A pilot study with a convergent mixed-methods design. A total of 27 intensive care patients at a Danish University Hospital were offered patient-tailored live music by trained musicians in a single session design. We performed participant observation and conducted patient interviews using an observational and semi-structured interview guide. These data were supported by quantitative pre-post measurements of heart rate, respiration rate, mean arterial blood pressure, subjective pain experience and heart rate variability. The study was conducted from February 2020 to December 2021.
Findings: Using a Ricoeur-inspired analysis of observations and interviews, we elicited four themes: *'A break where you can swim away and relax', 'The living presence makes the play unique', 'Happy memories of the past and longing for home'* and *'An intense and meaningful experience'*. The quantitative analysis showed a significant decrease in heart rate (4.33 bpm, $p < 0.02$), respiration rate (2.93, $p < 0.001$) and blood pressure (3.30, $p<0.05$) and a significant increase in heart rate variation (-0.22, $p < 0.01$). Seven patients reported pain reduction after the music intervention, corresponding to a 24% reduction.
Conclusion: Live music contributes to meaningful moments by bringing elements of everyday life into the intensive care unit. Our findings indicate that live music is a non-pharmacological nursing intervention that may promote relaxation and reduce stress and pain.

OP0703

Incidence of delirium during ICU stay and physical recovery 12 months after ICU discharge: a retrospective single centre study

Marta Villa[1]

[1] IRCCS San Gerardo dei Tintori, Monza, Italy

Introduction: “Post Intensive Care Syndrome” (PICS) describes physical, cognitive and/or psychological impairments that may arise or worsen after an intensive care unit (ICU) admission and persist beyond hospital discharge. Delirium is one of the risk factors for PICS.

Aim: recognize patients who have had delirium during ICU stay by investigating whether its development can lead to a worsening of quality of life and monitor neuromuscular recovery 12 months after discharge.
Setting & participants: patients admitted for at least 3 days at the general ICU of the IRCCS San Gerardo dei Tintori in Monza in the period between 3/1/2020 and 10/31/2022 and enrolled in the follow-up program.
Methods: a retrospective observational study was conducted. The ICDSC scale was used to detect delirium during ICU stay. In the follow-up visit 12 months after discharge, the scales used to evaluate the psychological, cognitive and quality of life dimensions are: SF-36, MoCa, HADS, PCL-5, ISI, EQ5D-5L. For the physical evaluation the scales are: FAC, MRC, 6 Minutes Walking Test, EQ Mobility and Dynamometry.
Results: 91 patients were enrolled. The median age is 63 (54-70) years and the median stay in ICU is 17 (10-28) days. All patients were sedated, 80% curarized. 60% were placed prone. 20% developed delirium.
At the 12-month follow-up, 57% (n=52) of the sample resumed their usual pre-ICU activity. The median MRC values were 60 (59-60), the right dynamometry 29 (13-39) kg, the left 26 (19-37) kg, the 6MWT 440 (380-480) meters and the FAC scale 5 (4-5).
Regarding quality of life, there are no differences between patients who developed delirium and those who did not.
Conclusion(s): physical recovery is good although some patients have deficits. The development of delirium during ICU stay does not seem to determine a worsening of living conditions 12 months after discharge.

OP0704

The level of knowledge in nursing care of patients with EVD: comparison between Neurosurgical ICU and General ICU nurses

Alexander Furmanov[1], Julie Benbenishti[1]
[1] Hadassah Hebrew University Medical Center, Jerusalem, Israel

Introduction: An EVD is a catheter inserted into lateral ventricle of the brain for monitoring intracranial pressure/draining CSF. Nursing care of patient with an EVD is complex, multidimensional; requires broad and evidence-based knowledge. These patients usually hospitalized in General or Neurosurgical ICU. Sub optimal level of knowledge among intensive care nurses may lead to poor quality of care, complications and less favorable outcomes.
Aim: Compare the level of knowledge on EVD usage between nurses in General and Neurosurgical ICU's.
Participants: Target population is ICU nurses, who care for patients with EVD. The sample is a convenience sample, nurses from both: General/Neurosurgical ICU.
Methods: A questionnaire surveyed the level of knowledge in nursing care for a patient with EVD. Descriptive statistics performed on general information. T test was performed to compare independent samples. We used Pearson correlations, ANOVA, T test to check other correlations.
Results: 154 nurses participated. 8 medical centers, divided equally between both types of ICU. Most of nurses were female (71.4%), age ranged between 23-65 years (av. 38.8 yo). Level of knowledge in care of patient with an EVD was sufficient among the Neurosurgical ICU nurses (av. 16.9 (3.22). In comparison to the General ICU nurses, which was found insufficient (av. 14.07 (3.71)). The difference was found statistically significant (p=0.0000, t(154)) in average and in each of the three categories.

Conclusions: The finding of the study show that the knowledge in nursing care for a patient with an EVD is higher in the Neurosurgical ICU nurses in comparison to the General ICU nurses. It is recommended to enlist the general ICU nurses to participate in an educational course to enhance level of knowledge. Other knowledge enhancing strategies, can also be implemented to reduce the gap in knowledge and improve the quality of care in patients with an EVD.

OP08 GUIDELINES

OP0801

An evidence based guideline for intra-hospital transport of intensive care patients

Anita Kristin Gabrielsen[1], Linda Marie Lundberg[1]
[1] Oslo University Hospital , Oslo, Norway

Introduction: Patients receiving intensive care are often transported out of the Intensive care Unit (ICU) due to the need for diagnostic radiology, procedures or transfer to other ICU's. Intra-hospital transport (IHT) of patients needing intensive care represents increased risk of adverse events. The risk of adverse events may be reduced by developing clinical guidelines for safe patient transfer. The guideline and a checklist was initially developed in 2005 at an ICU at Oslo University Hospital (OUH) Ullevaal. Important items in the checklist are preparation, monitoring during and after transport. The checklist is considered as useful and may promote patient safety. Research and feedback from staff suggest that the checklist should be designed in a better way.
Aim: To update an existing clinical guideline and a checklist for intra-hospital transport of critical ill patients.
Quality Improvement: OUH Ullevaal has four ICU's, all units performs IHT's daily. The hospital is a major trauma center in Southeast in Norway. A group of four critical care nurses and an anesthesiologist was established to work with the updating of the guideline. The updating followed the steps in the AGREE II (appraisal of guidelines research and evaluation) instrument.
Findings: The guideline has been updated according to international guidelines and research. The updated guideline recommends that the transport team should consist of intensive care nurses, an anesthesiologist and a porter. The team apply the identification, situation, background and assessment (ISBAR) tool before transporting the patient. Further, the guideline now recommends continuous CO2 monitoring during transport. Items related to systematic patient assessment and check of medical equipment, has been added to the locally adapted checklist.
Conclusion(s): Combining a literature review with clinical experience from intra-hospital transports may enhance patient safety. Feedback from staff who perform IHT's and evaluation of the checklist, is important in improving clinical practice.

OP0802

Guidelines and Current Practice in ICU Patients' Mobility - Is there a gap between practice and behavior?

Shelly Ashkenazy[1], Freda DeKeyser Ganz[2], Michael Kuniavsky[3], Levana Jakobson[4], Iris Levdov Avital[5], Orly Kolpak [6], Hadassa Levy[5], Rebecca Mor Levy [7], Alinoy Lavy[8], Shiran Itzhakov[7], Chen Biton[8], Chaya Broyer[9], Dorit Golan[5], Julie Benbenishty[2]

[1] Hadassah Medical Center, Jerusalem, Israel
[2] Hadsaah Hebrew University school of Nursing, Jerusalem, Israel
[3] Israel Ministry of Health, Jerusalem, Israel
[4] Galilee Medical Center, Nahariya , Israel
[5] Rambam Health Care Campus, Haifa, Israel
[6] Galilee Medical Center, Nahariya , Israel
[7] Sheba Medical Center, Ramat Gan, Israel
[8] Shamir Medical Center, Zerifin, Israel
[9] Shaare Zedek Medical Center , Jerusalem, Israel

Introduction: Early mobilization has become a central part of ICU guidelines practice. The added value of mobility to common practice in critical care settings has been studied and shown an improvement in muscle weakness muscle metabolism, quality of sleep, and delirium. However, studies have not discussed the relationship between practice behavior guidelines and factors that hinder the actual practice.
Aim: The purpose of the current study was to describe the ICU mobility clinical practice behaviors and the factors associated with these behaviors
Method: This study was a multi-center descriptive retrospective one-day point prevalence study conducted in 6 medical centers in 2022. Data on ICU patient mobilization clinical behaviors and the barriers to mobilization were retrospectively collected for each patient. A year later, the study was repeated in one center after an intervention to raise nurses' awareness.
Results: The study included 210 patients, in 20 ICUs. About half (46%) were intubated and 31% were hemodynamically unstable. Position change was most frequently reported as the maximum mobility level. Charlson Comorbidity Index (CCI) and BMI were not related to the level of mobility. Only intubation was a significant predictor of mobility level (R^2 =0 .52, p<</u>0.001) in a multiple regression model.
A repeated study a year later in one center resulted in similar results, mechanical ventilation (R^2 =0 .215, p<</u>0.001) was a significant barrier to predicting early mobilization.
Conclusion: There is a gap between clinical practice guidelines and actual practice behavior. Subjective norms or common practices could be a barrier that explains the gap. To bridge the gap and for clinical implementation promoting a change in clinical practice behavior with proactive leadership, increasing awareness, and changing mobilization policies could potentially improve patient outcomes.

OP0803

A core outcome set for adult general ICU patients

Maj-Brit Nørregaard Kjær[1, 2], Camilla R L Bruun[1], Anders Granholm[1, 2], Morten H Møller[1, 2], Bodil S Rasmussen[2, 3], Camilla B Mortensen[2, 4], Lone M Poulsen[2, 4], Thomas Strøm[2, 5], Eva Laerkner[5], Louise S Herløv[4], Anna Schandl[6, 7], Praleene Sivapalan[1, 2], Stine Estrup[1, 8], Johanna Hästbacka[2, 9], Kristin Hofsø[10, 11], Fredrike Blokzijl[12], Ingrid Egerod[1, 2], Anders Perner[1, 2], Marie O Collet[1, 2]

[1] Department of Intensive Care, Copenhagen University Hospital - Rigshospitalet, Copenhagen, Denmark
[2] Collaboration of Research in Intensive Care (CRIC), Copenhagen, Denmark
[3] Department of Anaesthesia and Intensive Care, Aalborg University Hospital, Aalborg, Denmark
[4] Department of Anesthesiology, Zealand University Hospital, Køge, Denmark
[5] Department of Anesthesiology and Intensive Care, Odense University Hospital, Odense, Denmark
[6] Department of Perioperative and Intensive Care, Södersjukhuset, Stockholm, Sweden
[7] Department of Clinical Sciences and Education, Södersjukhuset, Karolinska Instit, Stockholm, Sweden
[8] Collaboration of Intensive Care Research (CRIC), Copenhagen, Denmark

[9] Tampere University Hospital, Wellbeing Services County of Pirkanmaa and Tampere , Tampere, Finland
[10] Department of Postoperative and Intensive Care Nursing, Division of Emergencies , Oslo, Norway
[11] Lovisenberg Dioconal University College, Oslo, , Oslo, Norway
[12] Department of Critical Care, University Medical Center Groningen, University of , Groningen, Netherlands

Introduction: Randomised clinical trials should ideally use harmonised outcomes that are important to patients. Core outcome sets for specific subsets of ICU patients exist, e.g., respiratory failure, delirium, and COVID-19, but not for ICU patients in general.
Aim: We aimed to develop a core outcome set for adult general ICU patients.
Settings & participants: Five Danish research panels contributed to the design, methods, result interpretation, and consensus meetings. An international validation of the core outcome set involved 22 research panels from 14 countries across Europe, Australia, and India. Participants included ICU survivors, family members, clinicians, and researchers in the research panels, while those participating in the survey and interviews were not part of these panels.
Methods: We developed a core outcome set in Denmark following the Core Outcome Measures in Effectiveness Trials (COMET) Handbook. We used a modified Delphi consensus process with multiple methods design, including literature review, survey, semi-structured interviews, and discussions with initially five Danish research panels, involving adult ICU survivors, family members, clinicians, and researchers. The core outcome set was also internationally validated and revised accordingly.
Results: We identified 329 published outcomes from the literature review with 50 outcomes included in the Delphi survey (n=264). No additional outcomes were added after the first survey round and the 82 interviews. The first survey round was completed by 249 (94%) participants, and 202 (82%) contributed to the final third round. The initial core outcome set comprised six core outcomes. International validation involved 217 research panel members and resulted in the final core outcome set, i.e.; survival, free of life support, free of delirium, out of hospital, health-related quality of life, and cognitive function.
Conclusions: We developed and internationally validated a core outcome set with six core outcomes to improve research, specifically clinical trials involving adult general ICU patients.

OP0804
Clinical practice guideline for follow-up of critically ill adults

Eva Åkerman[1, 2], Anna Schandl[3, 4], Mona Ringdal[5], Oili Dahl[6], Lotti Orwelius[7, 8]

[1] Karolinska University Hospital, Stockholm, Sweden
[2] Department of Health Sciences, Lund university, Sweden
[3] Department of Anaesthesiology and Intensive Care, Stockholm, Sweden
[4] Department of Clinical Science and Education, Stockholm, Sweden
[5] Institute of Health and Care Sciences at Sahlgrenska Academy,, Gothenburg, Sweden
[6] Department of Neurobiology, Care Sciences and Society,, Stockholm, Sweden
[7] Department of Anaesthesia and Intensive Care , Linköping, Sweden
[8] Department of Biomedical and Clinical Sciences , Linköping, Sweden

Introduction: Follow-up after critical illness and intensive care stay is recommended, for early identification of patients at risk for impaired physical, neurocognitive, and mental function. Referral to experts for identified problems are central for efficient recovery. However, sparse information is available on how this follow-up can be achieved and consensus regarding patient selection, time point, and content remains to be determined.
Aim: To describe and discuss the development of recommendations on how to organise and define the content of follow-up clinics after intensive care.

Quality improvement: A literature search was balanced against the values and preferences of clinicians, clinical experts, former patients, professional organisations, and registries. Literature was obtained from: PubMed, MEDLINE, Cochrane Library, Scopus and Psych INFO. The literature search was limited to reviews from 2007 to 2022. Workshops with clinical experts and focus group discussions with patient representatives complemented the dataset.
Findings: The guideline recommends that all patients with an ICU length of stay >2 days should be included in an ICU follow-up programme. The first follow-up visit should take place within the first week of ICU-discharge, followed by an invitation to follow-up clinics 2-3 months later. These should include recapitulation of the ICU stays and treatments, screening and identification of post-intensive care syndrome problems and referral to appropriate instances for adequate help.
Conclusion: This guideline supports the clinic to construct structured, uniform, and multi-professional activities to secure early identification and support of post-intensive care symptoms. The knowledge from patient follow-up could form the basis for improving intensive care.

OP0805

Establishing consensus on patient- and family-centered care in adult intensive care units: A Delphi survey

Søs Bohart[1], Anne Højager Nielsen[2], Jette Led Sørensen[3], Anne Sofie Andreasen[1], Tina Waldau[1], Merete Ann Møller[1], Thordis Thomsen[1]

[1] Herlev Hospital, University of Copenhagen, Herlev, Denmark
[2] Gødstrup Regional Hospital, Herning, Denmark
[3] Rigshospitalet Juliane Marie Centre, Copenhagen, Denmark

Introduction: Patient- and family-centered care (PFCC) is gaining increased awareness and has been proposed to improve care and clinical outcomes. The Institute for Patient- and Family-Centered Care outlines four core concepts: dignity and respect, information sharing, participation, and collaboration. However, evidence for multicomponent PFCC in adult ICUs that incorporate all concepts of PFCC remains limited. An interdisciplinary approach incorporating PFCC concepts into daily ICU practice with concrete, context-specific actions is needed.
Aim: To establish consensus between intensive care unit (ICU) experts on concrete patient- and family-centered care statements for adult patients and relatives in the ICU.
Setting & Participants: A panel of ICU healthcare professionals from 23 ICUs in Denmark.
Methods: We did a three-round Delphi survey. In round 1, participants answered 20 open-ended questions, based on existing evidence. Analysis of their responses generated close-ended statements, which participants primary rated on a five-point-Likert-scale, from very important to not important at all. In rounds 2 and 3., consensus was predefined as ≥75% of participants rating a statement important.
Results: Sixty-nine participated: 38 nurses, 24 physicians, and four occupational and physiotherapists. In total 96%, 90% and 72% answered the first, second, and third rounds, respectively. In round 1, participants answers resulted in >3000 statements that were analyzed into 82 condensed statements. After participants rated the statements in round 2 and 3, 47 statements reached consensus as important.
Conclusions: The 47 statements rated to be important included interdisciplinary approaches to systematic information sharing and consultations with patients and family-members, with the aim being to accommodate patients and family-members´ individual needs throughout the ICU stay.

OP0806

Consensus Statements on Airway Clearance Interventions in Intubated Critically Ill Patients — a Delphi study

Andrea A. Esmeijer[1], Prashant Nasa[2], Willemke Stilma[1], Frederique Paulus[1], George Ntoumenopoulos[3], Denise Battaglini[4], Deven Juneja[5], Lorenzo Ball[4], Stephan Ehrmann[6], Marcus J. Schultz[1]

[1] Amsterdam University Medical Center , Amsterdam, Netherlands
[2] The Royal Wolverhampton Trust, Wolverhampton, United Kingdom
[3] Royal Perth Hospital, Perth, Australia
[4] IRCCS Ospedale Policlinico San Martino, Genoa, Italy
[5] Max Super Speciality Hospital, New Delhi, India
[6] CHRU Hospital Tours, Tours, France

Introduction: Intubated critically ill patients are susceptible to secretion accumulation because of compromised airway clearance. To address this, various interventions—such as endotracheal suctioning, humidification, nebulization, oscillatory-, and cough techniques—are employed. However, practice of these interventions varies widely with different criteria to initiate or cease, and some of them are used routinely in all patients, without a clear clinical indication. While potentially beneficial, some interventions may have adverse effects, may cause pain or discomfort, and contribute to medical waste. High-quality recommendations are lacking and available guidelines are largely based on clinical expertise combined with low level evidence. There is no international consensus concerning the practice of airway clearance interventions.
Aim: To generate consensus and identify dissensus on statements regarding the use of airway clearance interventions in invasively ventilated ICU patients. The study focuses on evaluating indications, contraindications, safety and effectiveness.
Setting & Participants: A diverse interprofessional panel of experts with clinical experience in invasively ventilated ICU patients and authorship in airway care research.
Methods: a Delphi method in two parts covering: (1) Humidification and Nebulization, and (2) Suctioning and Mucus Mobilization Techniques. Statements were developed from a comprehensive literature review. Iterative rounds with multiple-choice questions or 7-point Likert-scale statements were conducted until stable agreement or disagreement was reached.
Results: A diverse panel of 33 (17 female) experts from 5 continents participated. There is a variability of responses by experts. The Delphi summarizes consensus and dissensus on the use of airway clearance interventions.
Conclusions: These findings underscore variability in expert consensus and dissensus with regard to airway clearance interventions. Future studies should focus on evidence in relation to the statements for which dissensus was found.

OP09 FAMILY CENTRED CARE

OP0901

The patient experience of a nurse-written ICU-diary intervention: a cross-sectional survey

Lisa Maria Högvall[1], Susanne Forsyth Herling[2], Ingrid Egerod[2], Antonija Petosic[1], Mette Elisabeth Riise Danielsen [1], Uta Rüdiger[3], Tone Rustøen[1], Helene Berntzen[1]

[1] Oslo University Hospital, Oslo, Norway
[2] Copenhagen University Hospital, Rigshospitalet, Copenhagen, Denmark
[3] Drammen hospital, Drammen, Norway

Introduction: A diary written for ICU-patients might help fill in memory gaps and promote psychological recovery. In Norway ICU diaries are mainly authored by nurses and national recommendations ensure a systematic approach to the intervention. There was a knowledge gap regarding diaries written exclusively by healthcare professionals within a frame of detailed guidelines and studies describing the patient experience of nurse-written ICU diaries were needed.
Aim: To investigate patient experience of receiving and reading a nurse-written diary.
Setting and participants: A questionnaire was developed and distributed among 100 adult ICU-survivors recruited from seven ICUs in Norway.
Methods: This was a cross-sectional multicenter study. Data were collected from December 2020 to June 2023. Descriptive statistics were used to analyze the data.
Results: Among the 88 patients completing the survey, 90% were satisfied with the diary handover process. As many as 88% of the respondents agreed that the diary demonstrated good care, helped them realize how critically ill they were and understand why recovery takes time (76%), and made them grateful for surviving (74%). A third of the respondents (30%) reported that the diary saddened them, 6% reported that the diary reminded them of a time in their lives they would rather forget, while 17% reported that critical events were missing in the diary. However, nearly all patients were in favour of continuing the diary intervention (98%).
Conclusion: ICU survivors who received a nurse-written diary were generally satisfied with both the experience of receiving and reading the diary and recommended the intervention to be sustained. Regarding implications for practice, the handover of the diary should be more individualized both in timing and manner to suit the individual ICU survivors´ preferences. For further improvement, nurses should be encouraged to keep writing throughout the whole ICU trajectory and avoid leaving out critical events.

OP0902

Intensive care nurses' attitudes about the importance of family involvement in adult intensive care: a multicentre cross-sectional study

Isha Verkaik[1], Nini. H Jonkman[1], Anja. H Brunsveld-Reinders[2], Andrea. A Esmeijer[3], Ina Mulder[4], Ineke van de Pol[5], Jolanda Qualm[6], Martin Rinket[7], Ilona Roeters[8], Dolf Weller[9], Fredrike Blokzijl[10], Frederique Paulus[3], Anne. M Eskes[3]

[1] OLVG hospital, Amsterdam, Netherlands
[2] LUMC, Leiden, Netherlands
[3] Amsterdam UMC, Amsterdam, Netherlands
[4] Canisius Wilhelmina hospital, Nijmegen, Netherlands

[5] St Antonius hospital, Nieuwegein, Netherlands
[6] Martini hospital, Groningen, Netherlands
[7] MST hospital, Enschede, Netherlands
[8] Catharina hospital, Eindhoven, Netherlands
[9] Maasstad hospital, Rotterdam, Netherlands
[10] University Medical Center Groningen, Groningen, Netherlands

Introduction: Admission to the intensive care unit (ICU) is stressful for family members and families. Involving family members in nursing care is expected to be beneficial for patients and families. Nurses are identified as key professionals to offer support for family members and who can involve family members in care activities.
Aim: To examine the attitude of ICU nurses towards involving family members in nursing care and to investigate the association of demographic and professional characteristics of ICU nurses and ICU organisational features with these attitudes.
Setting & participants: The survey was distributed to ICU nurses in ten hospitals across the Netherlands.
Methods: The study used a cross-sectional design and distributed via email the survey Families Importance to Nursing Care (FINC-NA) scale. Data were analysed using descriptive statistics and multivariable linear regression analyses to identify independent predictors.
Results: The FINC-NA questionnaire was completed by a total of 583 ICU nurses, with a response rate of 42%. The mean (SD) attitude of ICU nurses was 73.3 (8.78) on a scale of 22–110. ICU nurses were less positive towards actively inviting family members in nursing care and perceiving families as burdensome. ICU nurses working more clinical hours per week and ICU nurses working in an academic hospital compared to a teaching hospital were significantly associated with a less positive attitude towards family involvement. Analyses of subscales showed comparable results.
Conclusion: In general, ICU nurses showed a less positive attitude towards involving families in care. This study demonstrates that education on family involvement should be emphasized during ICU specialty training as well as in clinical practice. Further research is needed to identify how ICU nurses, especially the ones who work more clinical hours and in an academic hospital, can reach acceptation of involving family members in care activities.

OP0903

THE FAMILY MEMBERS' RECOLLECTIONS OF THE JOURNEY OF A PATIENT RETRIEVED ON ECMO: A QUALITATIVE STUDY

Giancarla Nava[1], Flavia Pegoraro[1], Marta Villa[1], Alberto Lucchini[1]

[1] Fondazione IRCCS San Gerardo, Monza, Italy

Background: Retrieving and transporting patients from peripheral hospitals to high-volume extracorporeal membrane oxygenation (ECMO) centres aim to minimise complications and enhance survival rates.
Aim: To describe the experiences of family members when their loved ones are transferred from a general to a specialised hospital by a Mobile ECMO team.
Study design: Semi-structured phone interviews with thematic analysis. Family members of "ECMO-patients" discharged from an Italian general intensive care unit were recruited for the study. The data analysis followed the principles of thematic synthesis.
Findings: We conducted six phone calls from family members eligible for the study. Three main items and nine subthemes were generated from their interview data:
1-The "Wait" (subthemes: *Fear, despair, and anguish; Disbelief; Confusion and disorientation; Daily clinical news*),

2- The “Trust” (*Trust in healthcare professionals, Hope and optimism, Technology*), and
3- The “Gratitude” (*Fortune and awareness; Commitment, humanity, and to take care of).*
Each relative's experience was unique; however, several common behaviours and emotional patterns emerged during the interviews. The journey of patients on ECMO was experienced as a relationship among patients, family members, and healthcare professionals.
Conclusions: The family members’ experience with ECMO patients indicates that ECMO is perceived as a crisis-focused intervention that provides last-minute hope. Despite the dire circumstances, the narratives shared by the interviewees provided the ability to reflect on their experiences in the ICU.
Relevance to Clinical Practice: Incorporating the perspectives of patients’ families in future qualitative research and follow-up programs for ICU survivors may offer additional insights on how the journey of a patient on ECMO is experienced by family members. Involving family members is crucial when providing care for critically ill patients.

OP0904

Participation in the ICU from relatives’ point of view

Ann-Charlotte Falk[1], Sofia Almerud [2], Catharina Frank [3]

[1] Sophiahemmet university, Stockholm, Sweden
[2] Region Kronoberg, Växjö , Sweden
[3] Röda korsets högskola , Stockholm, Sweden

Introduction: The intensive care environment in combination with the patient’s severe illness can lead to existential questions and is challenging when it comes to participation for both patients and their relatives. There are still lacking reports of the phenomenon of the overall meaning of participation during intensive care from the relatives’ point of view.
Aim: To explore the meaning of participation in the ICU from the close relative’s perspective.
Setting & participants: The ICU where the study was conducted is part of a moderately large hospital in southern Sweden that cares for patients of different ages with various diagnoses. A strategic sampling of close relatives from the post ICU follow-up were included. For this study, a relative is defined as a person with close relationship (i.e partner and or child) with someone who was treated at an ICU.
Methods: A qualitative study design was used. Data was collected through individual interviews and analysed using a thematic analysis.
Results: Twelve persons agreed to take part in the study, nine females and three men. The analysis resulted in a theme: Participation from the relative’s perspective is conditional with three subthemes; Being at the center of the event, being accepted as a person and being informed.
Conclusion(s): The participation of relatives in intensive care is often described as a conditional process, dependent on various contextual factors such as the caregivers' initiatives, the physical presence of the family, and access to information. While caregivers play a crucial role in facilitating relatives' participation and can take many forms, each with its own set of challenges and opportunities. Implications for daily ICU practice: strengthen communication structures, promote continuity in care relationships, utilize technology to enhance remote participation and focus on a relational care foundation.

OP0905

The impact of a digital intensive care unit diary on mental well-being and satisfaction of Patients' Relatives

Carola Schol [1], Erwin Ista[1], Diederik Gommers[1], Bente Dooren [1], Margo van Mol[1]

[1] Erasmus MC, University Medical Centre , Rotterdam, Netherlands

Introduction: Relatives of ICU patients often experience significant psychological stress, affecting their mental health. ICU diaries have been shown to help families cope, but the impact of digital ICU diaries has not yet been explored.
Aim: To evaluate the impact of a digital ICU diary on the mental well-being and satisfaction of ICU survivors' relatives.
Setting & Participants: Two groups of ICU survivors' relatives were studied, one with and one without digital ICU diary use. Relatives were assessed one-month post-ICU admission across four Dutch ICUs between April 2023 and September 2024.
Methods: This quantitative multi-center pilot study assessed post-traumatic stress disorder (PTSD) symptoms using the Impact of Event Scale-Revised (IES-R; range 0-88; cutoff >22) and anxiety and depression symptoms using the Hospital Anxiety and Depression Scale (HADS; range 0-21; subscale cutoff >8). Satisfaction with nursing communication and support for relatives was rated on a 0-10 scale. Group comparisons were made using χ^2 tests for dichotomous variables and Mann-Whitney U-tests for satisfaction scores ($p<0.05$).
Results: A total of 34 relatives with a digital ICU diary and 67 without were included. The median age was 52 [IQR 38-62] in the diary group and 58 [IQR 48-70] in the no-diary group. Spouses comprised the majority in both groups (55.9% versus 65.7%). PTSD symptoms were reported by 32.4% in the digital diary group and 34.3% in the no-diary group ($p=0.513$). Similarly, no differences were found in anxiety or depression. However, nursing communication (median 9 [IQR 9-10] versus 8 [IQR 7-9]) and support for relatives (median 9, [IQR 8-10] versus 8,[IQR 6-9]) were rated significantly higher in the digital diary group ($p<0.001$).
Conclusion: While the digital ICU diary did not reduce PTSD, anxiety, or depression symptoms, it improved satisfaction with nursing communication and support for relatives, suggesting benefits for family-centered care.

OP10 CLINICAL PRACTICE; HEMODYNAMIC

OP1001

The association between V-A ECMO flow strategy and weaning success in patients with severe cardiogenic shock

Atreyu van Esch[1], Lara Pladet[2], Margo van Mol[1], Christiaan Meuwese[1]

[1] Erasmus MC, Rotterdam, Netherlands
[2] UMC Utrecht, Utrecht, Netherlands

Introduction: Recovery of a severely failing heart may be impeded by the retrograde blood flow imposed by veno-arterial extracorporeal membrane oxygenation (V-A ECMO). A gradual lowering of V-A ECMO flow over time (*gradual weaning strategy*), versus maintaining a consistently high flow (*sustained high flow strategy*), could potentially augment cardiac recovery.

Aim: To investigate whether a gradual weaning strategy, versus a sustained flow strategy, is associated with higher probability for V-A ECMO weaning.
Setting and participants: Patients supported with V-A ECMO for refractory cardiogenic shock (CS) from six intensive care units in the Netherlands.
Methods: Patients were categorized into the gradual weaning strategy group when the temporal change in indexed V-A ECMO flow (last known flow – baseline) during therapy was ≥0.5L/min/m² or sustained flow strategy if this difference was <0.5L/min/m². The effects of ECMO flow strategy on weaning success and one-year mortality were studied by univariable and multivariable logistic regression.
Results: 233 patients (mean age 57.0 (SD 14.6), 70.4% male) with severe CS after cardiac surgery (42.4%), ECPR (21.5%), and myocardial infarction (13.7%) were included. Of these, 69 patients (29.6%) were classified as gradual weaning strategy, had a higher rate of weaning success (65.2% vs. 40.9%, p <0.001) and a lower one-year mortality rate (30.4% vs. 57.9%, p <0.001). Gradual weaning strategy was associated with improved weaning success (adjusted OR = 2.28, 95%-CI [1.27–4.53]), and lower one-year mortality (adjusted OR = 0.33, 95%-CI [0.17–0.64]).
Conclusion(s): A gradual V-A ECMO weaning strategy was associated with higher weaning success rates and lower mortality in refractory CS patients. Further research is needed to determine the optimal timing for flow reduction, considering daily flow changes and time-dependent confounders. If gradual weaning strategy is found to be superior, this could translate into protocols where nurses taper V-A ECMO flow according to study-based criteria.

OP1002

Cannulation-related wound complications in extra corporeal life support patients: incidence and risk factors

Ineke van de Pol[1], Margreet van Rees[1], Gwen Gool[1], Dewi Stalpers[2], Lisette Schoonhoven[2], Lisette Vernooij[3], Peter Noordzij[1], Erik Scholten[1]

[1] St. Antonius hospital, Nieuwegein, Netherlands
[2] Julius Center, University Medical Center, Utrecht University, Utrecht, Netherlands
[3] UMC Utrecht / Utrecht University, Utrecht, Netherlands

Introduction: Extracorporeal life support (ECLS) is a high-risk therapy for acute cardiac or respiratory failure. After weaning, wound healing at the cannulation site is often disrupted, leading to delayed recovery, increased nursing workload, and higher costs. Available data on this issue is limited.
Aim: This study describes the incidence and characteristics of cannulation-related wound complications (CRWCs) in ECLS patients, defined as disturbed wound healing at the cannulation site >72 hours after decannulation.
Setting & participants: A retrospective, single-center cohort study in Intensive Care Unit patients at St. Antonius Hospital, Netherlands. Between 2018 and 2023, successfully weaned ECLS patients treated with veno-venous (VV) or veno-arterial (VA) ECLS >24 hours were included.
Methods: Descriptive statistics were used to describe the incidence and characteristics of CRWCs. Risk factors for CRWCs were assessed using univariate logistic regression analysis.
Results: A total of 73 patients were included, of whom 33 (45%) had 37 CRWCs. CRWCs were characterized by fluid leaks (90%), wound dehiscence (70%), tissue necrosis (76%) and/or wound infection (57%). The first signs of a CRWC appeared at median day seven (IQR 5-9 days) after decannulation, primarily in the groin (97%). Compared to patients without CRWCs, patients with CRWC were older (65.0 vs 54.0 y, p=0.024) and had lower nadir serum albumin concentration (16.8 +-5.3 vs 20.1 +-5.3 g/L, p=0.009). VA cannulation (OR 4.50, 95% CI 1.60 - 14.22, p=0.006) and blood leaks at the cannulation site (OR 4.27, 95% CI 1.63 - 11.87, p=0.04) increased the odds for a CRWC. Wound healing was still incomplete in 17 patients at hospital discharge.

Conclusion(s): CRWCs occur in nearly half of all successfully weaned ECLS patients, mostly in the groin. Risk factors include older age, lower albumin concentration, VA cannulation and blood leaks during ECLS-run. It is important to identify at-risk patients and manage potential CRWCs.

OP1003

SIMULATED HAEMODYNAMIC PARAMETERS AND DIFFERENT INFUSION SET-UP AFFECT DRUG DELIVERY DURING SYRINGE PUMP CHANGE OVER: A BENCH-TOP STUDY

Alberto Lucchini[1]

[1] Fondazione IRCCS San Gerardo dei Tintori, Monza, Italy

Background: Infusion therapy is widely used in clinical settings, particularly in intensive care units. Syringe infusion pumps are commonly used for precise continuous intravenous drug delivery. Syringe pump changeover can be a challenging procedure.
Aim: to explore different variables that may impact on "bolus" or "backflow" events during syringe pump changeover by keeping a constant flow which simulates a constant cardiac output.
Methods: bench-top study in a laboratory setting. An extracorporeal circuit with a centrifugal pump was used to simulate a cardiac output of 5 l/min. The following variables were investigated: three levels of vertical position of the syringe pump (-50 cm, 0,+50 cm), three levels of Central Venous Pressure (CVP) (-5, 10, 15 mmHg), presence/absence of carrier infusion (5 ml/h), and presence/absence of a needle-free connector between the syringe and the extension line.
Results: A total of 108 syringe pump changes were performed with different combinations of the investigated variables. The mean time for syringe pump changeover was equal to 9.48±2.45 seconds and the overall fluid displacement was 8±40 µL (microlitres) (range, -262 - 156 µL). The CVP level and vertical position of the pump significantly affected the overall fluid displacement during syringe pump changeover. When a second infusion with an equal velocity rate to that of a syringe pump infusion was present within the same lumen, the presence of a needle-free device reduced the overall volume of displacement.
Conclusions: Syringe pump changeover can be critical for patients undergoing vasoactive drug administration.
Implications for clinical practice: In a simulated environment with a cardiac output of 5 L/min, the CVP level and vertical position of the syringe pump generated bolus or backflow events during syringe pump changeover. The application of carrier infusion appeared to intensify these phenomena. Employing a neutral, needle-free system may limit the delivery of boluses or backflows.

OP1004

Complications associated with intra-aortic balloon pump in critically ill patients: A systematic review

Ngoe Motia[1], Vasilika Marko[2], Marte-Marie Karlsen[3]

[1] Oslo University Hospital. Rikshospitalet, Oslo, Norway
[2] Akershus University Hospital, Lørenskog, Norway
[3] Lovisenberg Diakonal University College, Oslo, Norway

Introduction: In recent decades, intra-aortic balloon pump (IABP) technology has made significant progress in reducing complications and increasing patient support. Nonetheless, IABP-related complications are still frequent and are associated with a poor prognosis.

Aim: The aim of this systematic review was to identify complications associated with IABP treatment in critically ill patients with a compromised cardiac function.
Setting & participants: Studies focusing on complications of IABP treatment were included.
Methods: A systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines based on searches in CINAHL, Medline and Embase from January 2012 to April 2023. In total 12,854 publications were identified. Quantitative studies were included if they reported as their primary outcome(s) complications of IABP in adult patients because of cardiovascular conditions. Study selection, methodological quality assessment and data extraction were performed independently by two authors. The results were synthesized narratively.
Results: A total of nine studies were included in the review, of which eight were retrospective. Bleeding was the most frequently occurring complication, followed by limb ischaemia, stroke, infection, IABP malfunction, haematoma and other vascular complications. In addition, a correlation between IABP duration and vascular complications was found in three out of nine studies. Lastly, the incidence rate of stroke was higher in patients with axillary IABP than in those with femoral IABP.
Conclusions: This systematic review revealed that bleeding and limb ischaemia were the two most frequent complications associated with IABP therapy. We identified a correlation between (a) IABP support time and the development of vascular complications and (b) stroke and implantation of IABP catheter in the axillary artery. Further studies are needed to explore these findings directly. Increasing critical care nurses' knowledge regarding complications related to IABP support could lead to early identification, potentially lowering the incidence rate of complications.

OP1005

The effect of vasopressor agents on pressure injury development in intensive care patients

Ayda Kebapci[1], Ruhat Tilki [1]

[1] Koç University School of Nursing, Istanbul, Turkey

Introduction: Vasopressors are life-saving agents that increase mean arterial pressure. The pharmacodynamic features of these agents and previous studies suggest that vasopressors may be an essential risk factor in developing pressure injuries.
Aim: This study aimed to examine the effect of vasopressors in medical-surgical intensive care patients on pressure injury development.
Setting and Participants: This retrospective and correlational study was conducted between March 2021- May 2022. The electronic patient data were obtained from 148 surgical and medical patients exposed to vasopressor agents in the intensive care unit.
Method: Data on patients' demographic and clinical characteristics were evaluated using descriptive statistical methods (number, percentage, mean, standard deviation). Logistic regression modelling was used to assess independent relationships with pressure injury risk; results are reported as odds ratios (OR) and 95% confidence intervals (CI).
Results: All patients were given norepinephrine agents, and dopamine infusion secondary to norepinephrine was found in only 28.3 % of patients (n = 42). Pressure injury incidence was 43.2 % (n = 64). Duration of norepinephrine infusion was recognized as an independent risk factor for ICU-acquired pressure injury development (OR 1.22, 95 % CI 1.11–1.35), while a medical admission diagnosis (instead of surgical) was protective against pressure injury risk (OR 0.24, 95 % CI 0.10–0.59).
Conclusion: This study provides an important clue about norepinephrine, a statistically significant risk factor for pressure injury development. Therefore, the goal should be to transform evidence into concrete information that healthcare providers can incorporate into daily practice.

OP11 PATIENT COMFORT

OP1101

Living in emotional turmoil – experiences of family members of patients with COVID-19 a year and a half after ICU treatment

Jenny Lönnkvist[1]

[1] Karolinska Institute, Stockholm, Sweden

Introduction: Previous studies have shown that the presence of relatives in the intensive care unit is important for recovery both for patients and relatives. During the pandemic, visiting restrictions were implemented, which have negatively impacted patient outcomes and quality of care, which subsequently also affected relatives. Despite this, there has been a lack of research on the well-being of relatives and how they have experienced the psychosocial support from healthcare.
Aim: to explore experiences of care, psychosocial support, and psychosocial well-being among relatives of COVID-19 survivors treated in ICU.
Setting and participants: 15 relatives to Covid-19 survivors treated in ICU at Karolinska University hospital was included.
Method: A qualitative method with an inductive approach was conducted, involving interviews using a semi-structured interview guide. The digital interviews were analyzed using content analysis.
Results: Three categories were formed – a disrupted foundation, the importance of support, and being secured by information. Relatives encountered challenges related to visiting restrictions, which contributed to their sense of disconnection from their loved ones. Consequently, the need for emotional support became increasingly pronounced, with many individuals deriving comfort in interactions with other family members. Telephone communications from the ICU became a lifeline for the relatives, providing them with valuable information. However, they still faced significant emotional turmoil due to uncertainty surrounding the illness and prognosis.
Conclusions: A substantial burden of responsibility was placed on relatives to serve as the first point of contact, a role for which they were unprepared. This dynamic created a significant demand for psychosocial support that the healthcare system sometimes was unable to adequately provide. Additionally, the phone calls functioned as a delicate balancing act; while relatives valued and found comfort in these communications, they simultaneously endured considerable stress and anxiety related to the anticipation of calls and the potential for adverse news.

OP1102

Collaboration with patients and family members improves care in the intensive care unit

Anna Schandl[1, 2], Eva Barkestad[3], Gonzalo Yanez[1], Rickard Granberg[1], Anna Nestius Sköldqvist[1], Elisabet Hellborg[3], Mia Dahlqvist[1], Kristina Skoglund[1], Gisela Vogel[1, 2], Maria Cronhjort[2, 3]

[1] Södersjukhuset, Stockholm, Sweden
[2] Karolinska Institutet, Stockholm, Sweden
[3] Danderyd's Hospital , Stockholm , Sweden

Introduction: Patients and family members play an important role in improving healthcare quality in the intensive care unit (ICU) since they have unique insights into needs, values, and experiences. Many organisational leaders recognise the value of such partnerships but are unsure how to initiate the collaboration.

Aim: To describe how a patient and family member collaboration was organised and managed in an ICU in Sweden.
Setting & Participants: In 2022, five former patients and one family member were recruited from two ICUs in two regional hospitals in Stockholm, Sweden. Two ICU nurses and one physician formed the group together with the patients and the family members.
Methods: From January 2023, regular meetings have been held four times yearly. Meeting notes are taken, and decisions are discussed with the ICU management.
Results: The collaboration has resulted in a publication in a popular science magazine highlighting the needs of ICU survivors and their families after hospital discharge. Research projects have been discussed to include a more patient- and family-focused perspective. The collaboration has also contributed to developing information folders about survivorship after critical illness and national conference arrangements for patients, their families, ICU clinicians, and researchers. All group members highly value the collaboration.
Conclusions: Patient and family collaboration is essential for developing patient-relevant changes in the ICU, and we suggest that the initiative be a permanent solution supported by policymakers and hospital management.

OP1103

Thirst in adult patients in the intensive care unit: a scoping review

Marleen Flim[1], Tone Rustoen[2], Bronagh Blackwood[3], Peter Spronk[1]

[1] Gelre Hospitals, Apeldoorn, Netherlands
[2] University of Oslo, Oslo, Norway
[3] Wellcome-Wolfson institute for experimental medicine, Belfast, United Kingdom

Introduction: Thirst is one of the most intense symptoms reported by intensive care unit (ICU) patients. There has been an increased focus in the literature on the subject, stressing the importance of improving the quality of thirst care, but a systematically executed exploration of literature was still lacking.
Aim: To review the literature on thirst in ICU patients and report potential causes, risk factors, diagnosis and measurement tools, as well as potential co-occurrence with other distressing symptoms, and the management of thirst in the ICU.
Design: A scoping review employing the Joanna Briggs Institute methodology.
Methods: PubMed, MEDLINE, EMBASE and CINAHL were searched from inception to April 2024. Any type of empirical study reporting thirst or associated xerostomia in adult patients (≥18 years) admitted to an ICU or high dependency unit for more than 24 hours were included.
Results: The search yielded 907 unique records, and after evaluating 65 full-text publications, 21 studies were included. Thirst intensity was addressed most often (eleven studies), whereas the experience (or quality) of thirst and the validation of a measurement instrument, were addressed in only one study. Although co-occurrence of symptoms was addressed in four studies, only one pilot study looked into the interaction of thirst with other symptoms. Intervention studies have been focussing primarily on mouth-care interventions.
Conclusion: Thirst is a distressing symptom in the ICU, with reported high prevalence and intensity. Knowledge about its causes, interventions that incorporate minimizing its risk, occurrence and intensity are limited.
Health care providers should acknowledge thirst as a prominent symptom for ICU patients. They should possess knowledge on the factors that potentially evoke or aggravate thirst. Regular and timely relief of thirst by oral care with cold swabs and the application of menthol can be regarded as a first choice of intervention.

OP1104

"Minor things of major importance" – nurses' experience of using the "Comfort bundle" when caring for critically ill patients

Helene Berntzen[1], Ann-Marie Storsveen[1]

[1] Oslo University Hospital, OSLO, Norway

Introduction: Patients in intensive care units (ICU) experience both pain and other discomforts. There is need for structured assessments and evidence-based initiatives to improve patients' experiences during intensive care. We developed a "Comfort bundle" presented as an illustrated wall-hung bedside whiteboard aiming to display individualized comfort measures and matters important to the patient. On the back of the board, knowledge-based interventions are listed to inspire and remind nurses to systematically plan and promote comfort to the ICU patient.
Aim: To investigate nurses' experience of using the newly developed "Comfort bundle" for critically ill patients.
Setting and participants: Eighteen nurses employed in three Norwegian adult ICUs where the "Comfort bundle" had been implemented.
Methods: A qualitative study using focus group interviews to collect data. Thematic analysis was used.
Results: The overarching theme "Minor things of major importance" was abstracted from the following main themes resulting from the analysis; "Satisfaction in nursing through person-centered care", "Acknowledging the importance of next-of-kin through involvement" and "Balancing content to target patients' actual needs". The nurses descriptions of using the "Comfort bundle" correlated well with the intentions of contributing to a more systematic and individualized nursing care, inspired the nurses' work, and enhanced family involvement and communication about patient needs. Although the participants considered the nursing care to become more structured and person-centered, they expressed concerns about the lack of continuous evaluation of the bundle content and hence updated and relevant information.
Conclusion: The nurses experience of the "Comfort Bundle" as contributing to an increased focus on comfort and more personalized care, as well as enhanced family involvement, justifies recommending its use in other ICUs. Yet, attention should be paid to the need for more continuous evaluation and update of the individual bundle. Research on patients' and family members' experiences regarding the "Comfort bundle" is needed.

OP1105

From Personalized Care to Appropriate ICU Care – Improving Outcomes for Patients undergoing Cardiac Surgery

Fredrike Blokzijl[1], Michiel Kuijpers[1], Willem Dieperink[1], Tiny Jong[1], Wobbe Bouma[1], Milou Dieën[2], Massimo Mariani[1]

[1] University Medical Center Groningen, Groningen, Netherlands
[2] Hanze University of Applied Sciences, Groningen, Netherlands

Introduction: Worldwide, patients are admitted to the ICU following elective cardiac surgery. Due to improved prevention strategies, such patients are older and increasingly frail, often resulting in high-complex care that ultimately does not yield the expected benefits in terms of survival and quality of life. In order to prevent inappropriate procedures and consequently unwanted ICU care, the need for a comprehensive assessment and a shared decision-making process is of great importance.

Aim: The goal of our quality project was to provide more appropriate, personalized care to frail elderly patients who are candidates for cardiac surgery.
Improvement: We established a novel outpatient clinic led by nurses with expertise in critical care. The concept was developed in collaboration with geriatricians, cardiothoracic surgeons, nurses, and quality improvement staff. During a 60-minute outpatient clinic visit, various topics were discussed, including an analysis of treatment options and an exploration of the patient's expectations, personal preferences, and goals. In addition, cognitive and physical tests were performed to assess the patient's frailty. The nurses then presented the findings of the outpatient clinic in a multidisciplinary team meeting, after which a joint decision was made on the most appropriate treatment for the patient in question.
Results: More than 100 patients visited the outpatient clinic and experienced it as an enrichment of care, as it focused on their personal situation. Additionally, an important advantage of the clinic was the rapid assessment of the frailty of the patient, which helps in selecting the most suitable, personalized treatment plan.
Conclusions: In today's healthcare, there is an increasing emphasis on appropriate, person-centred care. Nurse-led outpatient clinics, such as the one we have developed, serve as an example of this approach, ultimately leading to quality improvement and a reduction in inappropriate care in the ICU and in general.

OP1106

Patients' comfort in ICU: Italian translation and cultural adaptation of IPREA questionnaire

Floriana Pinto[1, 2], Francesco Limonti[2, 3], Michele Stellabotte[4], Giuseppe Tinessa[5], Emanuele Buccione[6]

[1] Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy
[2] Aniarti - Associazione Nazionale Infermieri di Area Critica, Genova, Italy
[3] Azienda Ospedaliero Universitaria di Ferrara, Ferrara, Italy
[4] Asst Grande Ospedale Metropolitano Niguarda, Milano, Italy
[5] Gruppo Ospedaliero Moncucco, Lugano, Switzerland
[6] Health Local Authority 3 Pescara, Pescara, Italy

Introduction: Critically ill patients often experience discomfort during their stay in the intensive care unit (ICU). This discomfort may stem from environmental factors, the organization of care, or specific therapies and treatments. Gaining insights into patients' experiences and the sources of their discomfort can help clinicians in developing strategies to improve the environment, quality of care, and communication with patients. The IPREA questionnaire, which assesses patients' self-reported discomforts in the ICU, is currently available only in French and English.
Aim: This study aims to translate and adapt the 18-item IPREA questionnaire to the Italian context.
Quality Improvement: Linguistic validation of the instrument followed the steps outlined in the Mapi Research Trust guidelines: conducting a content and concept analysis of the IPREA questionnaire 18 domains, performing forward and backward translations, reviewing the final Italian translation with two clinical experts and performing cognitive interviews to a sample of patients.
Findings: An Italian translation of the 18-item IPREA questionnaire has been approved by Mapi Research Trust and is now available for clinical and research use in Italy.
A study protocol has been created and proposed to Italian ICUs.
Conclusion: The Italian version of the IPREA questionnaire enables the assessment of discomfort sources as recalled by critically ill patients. The 18 domains of discomfort in the instrument should be integrated into daily ICU practices to guide healthcare professionals in creating a more human-centered care environment in Italian ICUs.

OP12 CLINICAL PRACTICE; RESPIRATORY

OP1201

Effects of different set-up used for endotracheal suctioning on airway paramethers in a bench model of protective ventilation

ALBERTO LUCCHINI[1], CHIARA MARIA SCALA[2], SALVATORE CARLUCCIO [3], SARA SONNO[3], SIMONE RIGALDO [3], EMANUELE REZOAGLI [1]

[1] Fondazione IRCCS San Gerardo dei Tintori, Monza , Italy
[2] ASST OVEST MILANESE , Legnano , Italy
[3] ASST SETTE LAGHI OSPEDALE DI CIRCOLO, VARESE , Italy

Introduction: The American Association of Respiratory Care 2022 endotracheal suctioning guidelines recommend that suction catheters should occlude < 70% of the ETT lumen in adults with no indications when procedures are performed in patients with ARDS with or without extracorporeal membrane oxygenation. Recent ESICM guidelines for ARDS patients recommend a tidal volume of ≤ 6 ml/Kg ideal body weight during mechanical ventilation.
Aim: To investigate how this recommendation affects the PEEP level, plateau level, and tidal volume when different mechanical ventilator setups are used during endotracheal suctioning performed with a closed system.
Methods: A benchtop study was conducted using the ASL 5000® Lung Simulator and EVITA V800 ventilator set for volume control. We evaluated three different endotracheal suctioning procedures for every combination of the following parameters: respiratory rate: 10,16,24, Tidal Volume. 420 and 280 ml; PEEP level, 5 and 10 cmH20, simulated lung compliance, 30 and 50 ml/cmH_20, endotracheal tube diameter, 7 and 8; endotracheal closed suctioning catheter diameter, 12 and 14 Fr.
Results: The mean difference with respect to the baseline value recorded during the 576 simulated endotracheal suctioning procedures was equal to -4.43 (±6.46) cmH20 for the PEEP level, -8.55 (±7.51) for the plateau pressure, and – 154 (±105) ml for the tidal volume.
A statistical difference with respect to the baseline value was observed when the ratio between the closed suction catheter and diameter of the entotracheal tube was >½. The highest value of reduction of the investigated paramethers was observed when the respiratory rate was equal to 10 with a tidal volume of 280 ml.
Conclusions: The recommendation with respect to the ratio of ½ between the closed suction catheter and the diameter of the entotracheal tube, present in the previous AARC guidelines (2010), seems to be safer for preventing lung derecruitment in a simulated environment.

OP1202

An investigation of the barriers to care of adults' patients with a temporary tracheostomy in hospital: a qualitative secondary analysis

Abderrahim Akroute[1], Svein Tore Fredriksen[2]

[1] 1 Department of Anesthesia and Intensive Care Medicine, Nordland Hospital, Bodø, Norway
[2] S.T.D. Fredriksen, Harstaf, Norway

Introduction: An investigation of barriers to care for adult patients with a temporary tracheostomy in a hospital setting is essential to ensure that these patients receive the highest quality of care and to identify areas where improvements can be made.

Aim: To investigate intensive care nurses and registered nurses' perceived barriers and to providing optimal nursing for adult patients with a temporary tracheostomy in intensive care and general wards.
Design: This paper was based on a secondary qualitative analysis of two primary qualitative studies, including narrative interviews and maximum variation sampling.
Methods: The analysis as based on interview data collected from six intensive care nurses and six registered nurses from two university teaching Hospitals in Norway. The interviews were audio-recorded and transcribed. Data was analyzed by the qualitative data analysis suggested by Graneheim & Lundman.
Results: Four main themes were identified: encountering ambivalence, inadequate Staffing levels, lack of patient continuity of caring, and lack of systematic follow-up.
Conclusion: Understanding of barriers to care was crucial for hospital and healthcare organizations to develop targeted interventions and educational programs to address these barriers, as well as improve the care provided to adult patients with tracheostomies in hospital settings.
Clinical Implication: Understanding and addressing barriers to care for adult patients with tracheostomies in a hospital setting could have a profound impact on the quality of care, patient safety, and the overall healthcare experience for these patients, by identifying and mitigating these barriers, healthcare organizations could enhance their ability to provide safe, effective, and patient-centered care to vulnerable population.

OP1203

Do filters impact humidity level within helmet-CPAP powered by Venturi system? Insights from a bench top study

Alberto Lucchini[1], Michele Delle vergini[2], Chiara Antonacci[3], Irina Kourkoutas Borghi[3], Giulia Turra[3], Elisa Colombo[3]

[1] Fondazione IRCCS San Gerardo dei Tintori, Monza, Italy
[2] Università degli Studi di Milano-Bicocca, Milano, Italy
[3] Post Graduate Course in Critical care Nursing - University of Milano-Bicocc, Milano, Italy

Introduction: Helmet-CPAP (Continuous Positive Airway Pressure) is a commonly used non-invasive respiratory support for hypoxemic respiratory failure. Filters are placed within the circuit to reduce noise generated by high gas flow and to improve patient tolerance. We aim to evaluate the effects of different filters added to a helmet CPAP circuit using a Venturi system on changes of flow, FiO_2, and Absolute Humidity (AH) inside the helmet-CPAP.
Materials and methods: We set a bench study using a helmet-CPAP powered by a VENTURI system with seven types of filters (5 HEPA and 2 HME). We evaluated flow, FiO_2 e AH inside the helmet at three different conditions: without filters; with one filter positioned downstream the flowmeter; and with two filters of which one downstream the flowmeter and another upstream of the helmet port. Three different FiO_2 levels (35%, 55%, 75%) were used for each measurement. A flow of 60L /min and a PEEP of 10 cmH_2O was maintained throughout the study.
Results: The presence of filters led to FiO_2 increase (p= 0.0015) and to airflow (p=0.003) and AH decrease (p=0.0005). These findings were larger in the presence of both filters. At each step, the higher the FiO2 (35%, 55%, and 75%) the lower the AH (p=0.0468, p=0.0001, p=0.001, respectively).
Discussion: The presence of filters decrease airflow and increases FiO_2 levels, accordingly. At FiO_2 settings of 35% and 55% the AH is close to the target of 10 mgH_2O/L even with dual filtration. FiO_2 setting of 75% led to a AH decrease below the AH safety threshold, suggesting the need of an humidification. In conclusion, an FiO2 setting above 55% during helmet CPAP powered by a Venturi system does not allow to target safe humidity level, while lower FiO2 levels allow safe humidity levels.

OP1204

ICU nurses' acceptance of INTELLiVENT-ASV, an automated mechanical ventilation mode, compared to conventional ventilation in critically ill patients

Tobias van Leijsen[1], Frederique Paulus[1], Laura Buiteman-Kruizinga[1, 2]

[1] Amsterdam UMC, Amsterdam, Netherlands
[2] Reinier de Graaf Hospital, Delft, Netherlands

Introduction: Automated ventilation is becoming increasingly common in recent years. INTELLiVENT-ASV (iASV) one such mode, automatically adjusts ventilator settings using algorithms and real-time physiological input from the patient, based on the lowest work- and force of breathing. These automated adjustments alter the role of the ICU nurse, particularly in managing ventilator settings.
Aim: The aim of this study was to compare the user-acceptance and System Usability Score (SUS) of iASV versus conventional ventilation among ICU nurses. We hypothesized that iASV results in a higher user-acceptance score and SUS.
Setting & Participants: This study was conducted over a two-month period at the ICU of the Amsterdam UMC, the Netherlands. Twenty-five patients were included, and the ICU nurses responsible for their care were asked to participate by completing a questionnaire.
Methods: A questionnaire consisting of twenty-six questions, based on the Technology Acceptance Model 2 and the SUS, was completed by ICU nurses following their shift. The questionnaire allowed for the calculation of both a user-acceptance score and a SUS. Additionally, in-depth interviews were conducted to gather qualitative insights on the perceived benefits and drawbacks of iASV and conventional ventilation.
Results: A total of 57 ICU nurses participated in the study, completing 118 questionnaires. The user-acceptance score for iASV was 7.69 (SD 1.59) compared to 8.08 (SD 0.96) for conventional ventilation (P=0.034). Similarly, the SUS for iASV was significantly lower at 68 (SD 12.84) compared to 76.14 (SD 9.28) for conventional ventilation (P=0.001). Interviews with eight ICU nurses revealed that the need for external sensors and a thorough understanding of the algorithm were perceived as drawbacks of iASV. Perceived benefits were automated fine-tuning of ventilatory settings and seamless switching between supportive and controlled ventilation modes.
Conclusion: ICU nurses scored a lower user acceptance and usability for iASV compared to conventional ventilation.

OP13 ENVIRONMENTAL SUSTAINABILITY

OP1301

"In ICU I Don't Have Time To Sort Waste Or Implement Sustainable Behaviors": A Qualitative Content Analysis

Davide Bartoli[1], Francesca Trotta[2], Francesco Petrosino [2], Luciano Midolo Luciano[1], Gianluca Pucciarelli[2]

[1] Sapienza University of Rome, Rome, Italy
[2] Tor Vergata University, Rome, Italy

Introduction: Climate change poses an unprecedented threat to human health and healthcare delivery worldwide. Projections predict that by 2030 the direct costs of health deriving from climate change effects may reach 2 to 4 billion U.S. dollars per year. Intensive Care Units (ICUs) are the primary producers of greenhouse gas emissions within hospitals. Nurses represent a large portion of the healthcare workforce and can be pivotal in promoting sustainability practices. It is necessary to study the ecological thinking and phenomena of nurses, as environmental sustainability is becoming a crucial element for the WHO, and it is also necessary to develop an eco-centric nursing culture.
Aim: Is to investigate the concept of environmental sustainability through the lived experiences of ICU nurses.
Setting & participants: The sample was enrolled in the ICUs of two hospitals in central Italy. All participants were informed and gave consent for participation of the study
Methods: A qualitative content analysis was conducted using 27 ICU nurses' in-depth interviews, each of which included an open-ended question. A group of researchers who worked independently then examined and categorized the transcripts that had been gathered. The extrapolated notions were analyzed using the Neem M. (2022)methodology. A grant from the Center of Excellence for Nursing Scholarship, Rome, July 2024, is funding this research.
Results: Time to know, define critical issues and improve in the direction of green health care practice is the conceptualization of sustainable behaviors experienced by ICU nurses.
Conclusions: It is the responsibility of ICU managers to encourage teams to practice environmentally conscious behaviors so that these practices become accepted practices in the critical care unit and are not limited to the actions of a few mindful nurses. Enforcing the green nursing mindset in the ICU required careful consideration of the major concerns and definition of sustainable behaviors.

OP1302

A mountain of waste created daily: Postgraduate intensive care nursing students' experiences of environmental sustainability

Fredrika Sundberg[1], Heather Baid[2], Åsa Israelsson-Skogsberg[3]

[1] Research and Development Centre, Skaraborg Hospital , Skovde, Sweden
[2] School of Education, Sport and Health Sciences, University of Brighton, Brighton, United Kingdom
[3] Faculty of Caring Sciences, Work Life & Social Welfare, University of Borås, Borås, Sweden

Introduction: The healthcare sector has a negative ecological impact, and intensive care is one of the most resource-consuming areas. Nurses have a duty to contribute to climate change reduction, design climate-resilient healthcare systems, and support individuals and communities in adapting to the effects of the planetary health crisis. It is essential to incorporate environmental sustainability into nursing education so that nurses can advocate for conscientious and ethically sustainable healthcare that benefits both patients and the planet.
Aim: To explore postgraduate intensive care nursing student experiences of environmental sustainability in clinical practice at intensive care units. .
Setting & participants: The participants were 24 registered nurses studying postgraduate, specialist intensive care nursing courses at four universities in the south and west regions of Sweden.
Methods: This study obtained approval at the participating universities and followed the guidelines of the Declaration of Helsinki. Data were collected using a qualitative questionnaire, and the data were analysed using inductive thematic analysis.
Results: Intensive care is a challenging context in terms of sustainability, where saving lives is the number one priority. There were good and bad sustainability habits among the staff, and awareness was key to improving. Clinical supplies come in unsustainable packages, and the participants wished for better alternatives, and they wanted more knowledge and education on sustainable practices. The findings also emphasized the importance of a holistic perspective throughout each patient's pathway.

Conclusion(s): Sustainability in intensive care units is somewhat unrecognised today, although intensive care nurses want that to change. The context where saving lives is prioritized makes implementing ecologically responsible practices a challenge. However, environmental sustainability in intensive care is feasible, with education needed for nurses to take on the responsibility of making improvements. Hospital management prioritizing sustainability is important to support clinicians in implementing sustainable practices in intensive care units

OP1303

Open Versus Closed Suctioning in Invasively Ventilated Critically Ill Patients for Sustainability of ICU Care: A Life-Cycle Assessment Comparison

Willemke Stilma[1], Andrea A. Esmeijer[1], Frederique Paulus[1], Tim Frenzel[2], Hugo Touw[2], Tim Stobernack[2]

[1] Amsterdam University Medical Center , Amsterdam, Netherlands
[2] Radboud University Medical Center, Nijmegen, Netherlands

Introduction: Care for critically ill patients relies heavily on disposables and generates a large amount of waste. For example, invasively ventilated ICU-patients receive various airway care interventions to clear secretions from the upper and/or lower airways. Endotracheal suctioning is most commonly used, up to 8-17 times per day. Endotracheal suctioning can be performed in two ways: closed suctioning (designed for multiple uses within 1-3 days), and open suctioning (a single-use catheter). This study analyzed the environmental impact of two such methods to guide healthcare workers in environmentally friendly and sustainable choices.
Aim: To determine the environmental impact of open and closed suctioning systems. We hypothesized that a closed system is more environmentally sustainable than an open system.
Setting & participants: A single-center observational pilot study was conducted in an adult mixed medical-surgical ICU. No patient data were collected; the focus was exclusively on the medical products and their environmental impact determined by life-cycle assessment.
Methods: A life-cycle assessment compared the closed suction system 'TrachSeal' by Intersurgical, $13.73 each and requiring replacement every 72 hours, with the open suction system by Bicakcilar, $0.27 each. The assessment covered the entire life cycle, from raw material extraction to disposal. Environmental impact was analyzed across 18 categories (e.g. global warming, toxicity), with end-point analyses summarizing the impact in an aggregated category such as damage on human health, expressed in disability-adjusted life-years.
Results: The environmental impact of the closed suction system was significantly higher compared to the open suction system. However, since one closed suctioning system can be used for several days, the use of 6 or more open systems within 72 hours in one patient has more impact.
Conclusion(s): When open suctioning is performed more than 6 times within 72 hours in one patient, the use of a closed suctioning catheter is more sustainable.

OP14 HOT TOPICS SESSION

OP1401

Lessons from the SuDDICU trial: implications for nursing practice

Louise Rose[1]

[1] Kings College London, London, United Kingdom

No abstract could be submitted due to unpublished trial data.

OP1402

Patients' experiences of cognitive impairment during and following critical illness in the intensive care unit

Anette Bjerregaard Alrø[1], Helle Svenningsen [2], Helene Korvenius Nedergaard[3], Hanne Irene Jensen[4], Pia Dreyer[1]

[1] Aarhus University Hospital, Aarhus, Denmark
[2] Research Centre for Health and Welfare Technology, Aarhus, Denmark
[3] 1Department of Anaesthesiology and Intensive Care, Kolding, Denmark
[4] Department of Anaesthesiology and Intensive Care, Kolding, Denmark

Introduction: Worldwide, millions of patients survive critical illness in the intensive care unit (ICU) owing to advanced technologies and treatments. However, many patients are affected by post-intensive care syndrome, especially cognitive impairments.
Aim: To explore how patients' experience cognitive impairments during and after critical illness in the ICU.
Setting & participants: A multi-centre study conducted in Denmark with 20 ICU patients.
Method: Qualitative studies utilising participant observation and single and dyadic semi-structured interviews in the ICU and three and six months after the ICU discharge. A phenomenological-hermeneutic approach was adopted using a text interpretation method inspired by Paul Ricoeur.
Results: Patients experienced multiple cognitive impairments during and following the ICU. In the ICU, they experienced having a foggy brain, memory problems, and speaking problems, which caused frustrations. Patients also felt that their body and mind were separate entities. They experienced a loss of coordination and concentration along with a sense of degradation. Following the ICU, patients' cognitive impairments affected their everyday life regarding family, work and social life. Having cognitive impairments turned their lives upside down, which felt like living in a parallel world. Also, they lost control in life and felt vulnerable.
None of the participants experienced receiving any rehabilitation specifically targeting their cognitive impairments, and therefore had to engage in self-invented activities and strategies.
Conclusion: Patients experienced multiple cognitive impairments due to critical illness during and after the ICU. These cognitive impairments comprised deficits in memory, language, attention and concentration, executive function, mental processing and visuospatial ability. The impairments affected patients' well-being, QoL and adaption to everyday life.

OP15 END-OF-LIFE CARE

OP1501

Critical care nurses' experiences of participation in decisions to withdraw and withhold treatment in ICU

Carl-Johan Cederwall[1], Sepideh Olausson[1], Lotta Johansson[2]

[1] University of Gothenburg, Gothenburg, Sweden
[2] Sahlgrenska University Hospital, Gothenburg, Sweden

Introduction: If life-sustaining treatment in the ICU is no longer considered beneficial for the patient, and the likelihood of returning to a life with a reasonable quality is deemed negligible, a decision may be made to limit treatment. Decisions whether to withhold or withdraw treatment are made by the physician, nevertheless, critical care nurses play a significant role in the process, as they support patients and families in everyday clinical practice.
Aim: To describe critical care nurses' experiences of participation in decisions to withdraw or withhold treatment from patients in ICU.
Setting and Participants: Critical care nurses with at least two years of experience working in ICUs were recruited from two intensive care units.
Methods: A qualitative approach was used. Data was collected by interviews with ICU nurses using critical incident technique to capture their experiences and analysed thematical content analysis.
Results: In total twelve nurses participated, and four themes emerged: (1) the complexity of the care situation; (2) the importance of communication within the team; (3) facing obstacles and challenges; and (4) balancing the patient's dignity with their suffering. Participants described every situation as unique, shaped by the individuals involved. They emphasised the importance of maintaining communication between team members and the family. Problems in care environment or stressful situations were important to address, as was prioritising in the best interests of patients and families. Decisions to limit treatment could clarify care-related challenges and make it easier to manage patient suffering.
Conclusions: Decisions to withdraw or withhold treatment in the ICU present a complex situation, shaped by the individuals involved. Critical care nurses faced organisational obstacles and emotional challenges, particularly when interacting with patients and their families. Through experience, ICU nurses developed a broader perspective, which enhances their ability to navigate these difficult situations effectively.

OP1502

End-of-life care during Covid-19 pandemic: The expression of piloting and watch over in intensive care

Charlotte Pettersson Enblad[1], Johanna Forsén[1], Eva Joelsson-Alm[1, 2], Isabell Fridh[3], Gunilla Björling[4, 5], Janet Mattsson[5, 6]

[1] Department of Perioperative Care and Intensive Care, Södersjukhuset, Stockholm, Sweden
[2] Department of Clinical Science and Education, Karolinska Institutet, Stockholm, Sweden
[3] Faculty of Caring Science, University of Borås, Borås, Sweden
[4] School of Health and Welfare, Jönköping University, Jönköping, Sweden
[5] Department of Neurobiology, Care Sciences and Society, Karolinska Institutet, Stockholm, Sweden
[6] Faculty of Nursing and Health Sciences, University of South-Eastern Norway, Vestfold, Norway

Introduction: Piloting and watch over are two essential concepts for nursing care at the end of life in the ICU, in which family member involvement are crucial parts. During the COVID-19 pandemic, ICUs were under heavy pressure, hospitals introduced restrictions and families could not visit their ill and dying family members. Intensive care nurses were left to protect and meet patients' need for loving care in a vulnerable situation at the end of life.
Aim: To explore how piloting and watch over were revealed in the end-of-life care for patients with Covid-19 in intensive care units during the pandemic.
Setting & Participants: Eleven intensive care nurses at four ICUs at three Swedish hospitals participated in the study.
Methods: A qualitative interview study with an abductive approach was conducted. Data were collected via semi-structured interviews. The four critical phases of piloting: presence, protection, preparation, termination, and the concept of watch over were used as predetermined domains in the analysis. World Medical Association Declaration of Helsinki has guided ethical considerations throughout the study.
Results: The findings are presented in four categories: The road to the decision,
End-of-life care, Farewell of close family members and Closure. The heavy workload led to reduced quality of care, risking dehumanization of the patient. Visiting restrictions hindered supporting family members through the various piloting phases and forced the ICU nurses to take on the role of the relative in watching over the patient.
Conclusions: Workload and organization of care directly affect the quality of care given, the acceptance of privacy and the possibility of dignified end-of-life care. The results can be used to develop a framework to provide person-centred care, together with family members during the process of end-of-life care. It is pivotal for both family and patients to say goodbye without restrictions, regardless of the circumstances.

OP1503

Symptoms experienced in intensive care units after attempted suicide

Aina Helme[1], Tone Rustøen[2], Kristin Hofsø[1], Tine K Grimholt [3], Mari Bjørnaas[1]

[1] Oslo University Hospital, Oslo, Norway
[2] University of Oslo, Oslo, Norway
[3] VID, Oslo, Norway

Introduction: All Intensive Care Unit (ICU)patients experience symptoms such as pain, thirst, hunger, anxiety, confusion, shortness of breath, tiredness, restlessness, sadness, and fear. We aimed to study whether this applies to suicide attempt patients as well.
Aim: To investigate the prevalence and intensity of ten common ICU symptoms in patients after medically serious suicide attempts, including both self-poisonings and violent methods. Comparisons between patients admitted for self-poisonings and violent methods were done.
Methods: A symptom questionnaire was used to describe the prevalence and intensity of symptoms post-suicide attempt during ICU admission. Each symptom was coded zero if the patient did not experience it, and intensity was rated 1-10. Symptoms were categorized as high (6-10) or moderate (1-5). The Beck Suicide Intent Scale (SSI) measured suicide intent, with higher scores indicating greater intent. Descriptive statistics were used for analysis. Ethical approval is obtained.
Setting and participants: In this prospective cohort study, 86 ICU patients (56% females, n=45) were included over two years. Inclusion criteria: age ≥ 18, suicide attempt, ICU stay ≥ 12 hours. Exclusion criteria: inability to understand Norwegian or provide consent.

Results: One third of patients (33%, n=28) used violent methods (VM), while 63% (n=53) used self-poisoning (SP). Overall, 46% (n=40) reported high pain levels, and 51% reported high anxiety levels. Other symptoms included high levels of confusion, fatigue, and sadness. Among VM patients, 65% reported severe pain versus 21% in SP. High anxiety was reported by 67% of VM patients and 46% of SP patients.
Conclusion: Findings show that unrelieved symptoms are common in ICU patients after suicide attempts, especially after using violent methods. Symptom assessment for patients admitted for suicide attempt could enable more targeted interventions to reduce suffering.

OP1504

Nurses' knowledge, attitudes, and self-efficacy towards palliative care in Intensive Care Units

Bilal Awad[1]

[1] Beit Jala Governmental Hospital-Ministry of Health, Bethlehem-Palestine, Palestine

Introduction: Palliative care in Intensive Care Units (ICUs) is essential for enhancing patient outcomes; however, significant knowledge gaps and variable attitudes among ICU nurses may impact care quality. This study examined the relevance of these factors and aimed to identify predictors of self-efficacy in palliative care among ICU nurses in Palestinian hospitals.
Aim: To assess knowledge, attitudes, and self-efficacy regarding palliative care among ICU nurses in Palestine and identify predictors of self-efficacy.
Setting & participants: The study was conducted in governmental hospitals across Palestine, involving 260 Intensive Care Units nurses.
Methods: A cross-sectional, descriptive study design was utilized. Data were collected from January to July 2024 using self-administered questionnaires, including the Palliative Care Quiz for Nurses (PCQN) for knowledge, the Frommelt Attitudes Towards Care of the Dying (FATCOD) scale for attitudes, and the Palliative Care Self-Efficacy Scale (PCSES) for self-efficacy. Descriptive statistics summarized demographic data and scores, while multiple linear regression identified significant predictors of self-efficacy, with a significance threshold of $p < 0.05$.
Results: The mean knowledge score was 6.6 ± 2.6 out of 20 on the PCQN, indicating low knowledge levels. Attitudes were generally negative, with an average score of 62.7 ± 2.9 on the FATCOD scale. Self-efficacy was moderate, averaging 23.0 ± 8.1 out of 48 on the PCSES. Significant predictors of self-efficacy included recent ICU experience and marital status, with higher self-efficacy among married nurses ($p < 0.01$).
Conclusion(s): The results highlight the need for targeted educational programs to improve palliative care knowledge and attitudes among ICU nurses in Palestine. Enhancing self-efficacy through such interventions could foster better palliative care delivery in resource-limited settings, ultimately improving patients.

POSTER PRESENTATIONS

P001

Medical technical equipment in the ICU: Organizing and establishing plans for systematic training and retraining of ICU staff nurses

Elin-Anita Bratteng[1], Anita Benjaminsen[1]

[1] University hospital of Northern Norway, Tromsø, Norway

Aim: Establish a systematic plan that organizes training and retraining of ICU staff nurses regarding all the medical technical equipment (MTE) in the ICU. The training plan aims to ensure that the training can be documented and traceable.
Introduction: Our Intensive care unit is a general ICU with regional responsibility. The variation in patient groups are significant, although the patient volume and admissions per year may vary. This makes the training especially challenging in terms of ensuring maintenance and valid competency in all the different medical technical equipment used in patient treatment in the unit.
Outline: We started the process by first mapping out all the medical technical equipment in our unit. Having the complete overview, the MTE was risk assessed based on how often retraining were needed to ensure sufficient knowledge and competency for safely use. The MTE was then organized within different competency development plans matching the associated organ system. The different types of competency requirements were in relation to the different tools for training that were currently available: Quick guides, mobile micro learning and practical training, group lessons or demonstrations. The plans where then published in the hospital's competency portal, and assigned to the staff nurses. The staff nurses where themselves responsible for most of the implementation and self-signing the documentation when completed.
Recommendations: Our work included different competency requirements organized into different competency development plans aiming specific MTE. This made the training, not just well organized, systematic and valid, but it also ensured traceable documentation of the staffs training and retraining. This is a helpful tool for staff leaders and can be used helping the staff member reach its training goals and keeping updated with the units training and competency requirements as well as the hospitals patient safety policy.

P002

Critical care nurses' competence in mentoring students in intensive care units—A cross-sectional study

Matias Rasi[1], Tove Hanssen[1], Bente Norbye[1], Kristina Mikkonen[2], Monica Kvande[3]

[1] UiT The Arctic University of Norway, Tromsø, Norway
[2] University of Oulu, Oulu, Finland
[3] Lovisenberg Diaconal University College, Oslo, Norway

Introduction: Mentors play an important role in the practical education of critical care nursing students in intensive care units, yet little is known about the mentoring competencies of critical care nurses.
Aim: The aim of this study was to assess Norwegian critical care nurses' competence in mentoring students in intensive care units.

Setting & participants: The study population consisted of critical care nurses who mentor students in Norwegian intensive care units. 178 critical care nurses participated in the study. The participants were recruited by contacting the units directly, through social media, and at a national critical care nursing conference.
Methods: This study had a descriptive, cross-sectional design. The study utilised the Mentors' Competence Instrument, a self-evaluation tool for evaluating mentoring competence, and it was administered online.
Results: The Norwegian critical care nurses generally evaluated their mentoring competence as middle to high level. The "reflection during mentoring" dimension was rated as the highest and "student-centered evaluation" as the lowest competence dimension. The critical care nurses who had formal mentoring education reported significantly higher mentoring competences, but the other demographic characteristics were not related to mentoring competence. Regardless of previous mentoring education, most participants reported a need to further develop their mentoring competencies.
Conclusion(s): Employers should collaborate with educational institutions to establish a system for continuous competence development for critical care nurse mentors.

P003

The Guidelines of Practice for Intensive Care Nurses to Prevent Post Intensive Care Syndrome in Adult Patients

Reta Loodus[1], Katre Zirel[2], Helen Valk[2]

[1] Kuressaare Hospital Foundation, Kuressaare, Estonia
[2] North Estonia Medical Centre Foundation, Tallinn, Estonia

Introduction: Following intensive care, patients may develop post intensive care syndrome, which is defined as a new or worsening impairment of cognitive health, mental health, or physical function after a critical illness. This syndrome affects over half of patients within six months of being discharged from an intensive care unit. Studies indicate that the post intensive care syndrome is in increase and it leads to a decrease in the quality of life after intensive care.
Aim: The aim of the quality project was to prepare the guidelines of practice for intensive care nurses to prevent post intensive care syndrome in adult patients.
Setting & participants: Ninety-two intensive care nurses from various Estonian hospitals participated in a survey focused on post intensive care syndrome and its prevention methods. A multidisciplinary team of specialists, including anesthesiologists as consultants, was formed to develop the guidelines.
Methods: A systematic review of the literature on post intensive care syndrome and its prevention strategies was conducted,. Additionally, a survey was distributed among intensive care nurses to assess the need for guidelines of practice aimed at preventing the syndrome.
Results: Guidelines of practice for preventing the post intensive care syndrome in adult patients were developed and are now available for use to all intensive care units in Estonia.
Conclusions: Post intensive care syndrome can be prevented through the implementation of the ABCDEF bundle. The implementation of the bundle reduces patients' time on mechanical ventilation, time in intensive care and minimizes iatrogenic complications. The current knowledge of intensive care nurses regarding post intensive care syndrome and its prevention is limited. Although individual components of the ABCDEF bundle are used in intensive care units, the approach is not complex. Therefore, clear guidelines of practice are needed to effectively prevent post intensive care syndrome.

P004

Impact of critical illness on Quality of Life of the ICU Survivor-Family Member dyad: a conceptual framework and longitudinal protocol

Francesca Trotta[1], Davide Bartoli [1], Francesco Gravante[1], Beatrice Meucci[1], Gianluca Pucciarelli[1]

[1] Tor Vergata University of Rome , Rome , Italy

Introduction: Critical illness has a strong impact on the Quality of Life of Intensive Care Unit survivor-family member dyad. The critical phase will be followed by the development of a chronic condition that involves the dyad. Indeed, Post-Intensive Care Syndrome and Post-Intensive Care Syndrome-Family have negative consequences on the dyads' Quality of Life, but their interdependence is still poorly investigated. Given the transversal development of critical illness, it is necessary to identify the characteristics that influence Quality of Life at different stages of survivor's critical illness and the impact on family members.
Aim: the aim of this study was to build a specific conceptual framework which considers the interactions among pre-existing situations prior to critical illness, the new situation caused by the critical illness and the moderating effects of environmental and family members-related variables.
Setting & participants: A convenience sample of ICU survivor and family member dyads was enrolled at 3, 6 and 9 months from ICU discharge.
Methods: A longitudinal study was conducted, at 3, 6, and 9 months, to describe the effects of Post-Intensive Care Syndrome and Post-Intensive Care Syndrome-Family during the different stages of the critical illness.
Results: Data were analyzed using descriptive statistics to summarize socio-demographic information and assessment scales. Chi-square test, Student's t test, and Mann-Whitney test were used to examine the relationship between Post-Intensive Care Syndrome and Post-Intensive Care Syndrome-Family presence and various predictive and outcome variables.
Conclusions: The study informed clinical practice and research by identifying variables that are potentially modifiable and therefore amenable to intervention. The proposed framework it is helpful for future research focused on ICU survivor–family members dyads to build tailored interventions and standardized tools to early identify and improve the dyad's Quality of Life.

P005

Cognitive impairment in critically ill patients and former critically ill patients: A concept analysis

Anna Holm[1, 2], Ann Louise Hanifa[1], Helle Svenningsen[3], Pia Dreyer[1]

[1] Aarhus University Hospital, Aarhus, Denmark
[2] Aarhus University, Aarhus, Denmark
[3] VIA University College, Aarhus, Denmark

Introduction: With advances in treatment, intensive care unit (ICU) survivorship has increased, drawing attention to the consequences of ICU admissions. Cognitive impairment is a frequent but under-recognized complication among critically ill patients. Understanding cognitive impairment is crucial for improving ICU rehabilitation.
Aim: To clarify the meaning of the concept of cognitive impairment in critically ill patients throughout the trajectory of their rehabilitation during and after an intensive care unit admission.
Setting & Participants: Studies focusing on patients with cognitive impairments throughout the ICU trajectory were included.

Methods: Rodgers' evolutionary concept analysis method was used. A systematic search was conducted in CINAHL, PubMed, and PsycINFO. Literature from 2008 to 2022 was systematically screened. The analysis focused on surrogate terms/related concepts, attributes, and contextual basis.
Results: Thirty studies were included, representing variability in study design and country of origin. The analysis uncovered descriptions of the general terminology and the temporal trajectory of the concept, spanning from the acute phase to a long-term perspective. Attributes of the concept were described as delirium and domains of cognition. Antecedents were juxtaposed with risk factors, which were multifactorial. Consequences of cognitive impairment related to patients' quality of life, such as a decline in their ability to function independently, return to work, and manage everyday life. Also, cognitive impairment was identified as a significant public health problem.
Conclusion: Cognitive impairment is a complex concept with many surrogate and related terms. Furthermore, the concept is inextricably intertwined with the concepts of delirium and post-intensive care syndrome. Cognitive impairment may manifest as symptoms that can be challenging to identify and assess due to limitations in current screening tools and the absence of a consensus on timing. In relation to assessment and preventive strategies, the findings underline the need to distinguish between acute and long-term cognitive impairment.

P006

Non-pharmacological interventions to support the cognitive rehabilitation of patients admitted to the intensive care unit: An umbrella review

Anna Holm[1, 2], Linette Thorn[1], Anette Bjerregaard Alrø[1], Helene Korvenius Nedergaard[3, 4], Hanne Irene Jensen[3, 4], Pia Dreyer[1, 2]

[1] Aarhus University Hospital, Aarhus, Denmark
[2] Aarhus University, Aarhus, Denmark
[3] University Hospital of Southern Denmark, Kolding, Denmark
[4] University of Southern Denmark, Odense, Denmark

Introduction: Critically ill patients experience cognitive impairment throughout their intensive care unit trajectory, in the acute phase and the long term alike. Prominent cognitive sequelae in this group of patients are impaired executive function, including working memory, flexible thinking and self-control. Additionally, mental processing speed, memory, attention and concentration may be reduced. Cognitive impairment is a substantial burden to intensive care unit survivors and may negatively impact quality of life and rehabilitation outcomes. The optimal cognitive rehabilitation strategies for critically ill patients remain unclear.
Aim: To provide an overall examination of literature concerning nonpharmacological interventions that can enhance cognitive functioning in critically ill patients or facilitate their rehabilitation pathway during and after their intensive care unit stay.
Methods: This study was conducted as an umbrella review. A systematic search was conducted in CINAHL, Embase, PubMed and PsychINFO, including all types of peer-reviewed research syntheses published between 2008 and 2023. Eligible studies had to describe interventions aimed at improving adult patients' cognitive functioning or supporting their cognitive rehabilitation process throughout the intensive care unit trajectory. All eligible research syntheses were screened systematically; those included were critically appraised.
Results: Based on 13 research syntheses, this review summarised rehabilitative interventions that may be delivered during different phases of critical illness and recovery, in relation to content, delivery and timing. Interventions were: 1) cognitive activities and training, 2) mobilisation and physical exercises, 3) emotional, psychological and social support, and 4) information.

Conclusion: Due to limited evidence, no definitive conclusion can be drawn about which type of intervention is most supportive or effective. Additionally, no recommendations can be made about the optimal timing for intervention delivery. Clinicians and researchers involved in developing and implementing cognitive rehabilitation measures should consider designing individualised, multi-component interventions with a focus on content, delivery and timing.

P007

Care of children in high-tech environments from the child's, the parent's and the caregiver's perspectives

Sofia Almerud [1], Lisbet Andersson[2]

[1] Region Kronoberg, Växjö, Sweden
[2] Linnaeus University, Växjö, Sweden

Introduction: Anxiety in children and their parents is commonly experienced in high-tech environments such as intensive care units and operating theatres where caregivers play an important role. Child-centred care focus on young patients as active participants in their medical care and decision-making. A literature review reveals knowledge gaps regarding lived experiences of being a child, an accompanying parent or of being a caregiver when a parent is present with their child in a high-tech environment.
Aim: To describe care of children in high-tech environments from the child's, the parent's and the caregiver's perspectives.
Setting and participants: Data were collected at four Swedish hospitals of various size. Twenty-eight children (aged 4-13) who underwent minor elective surgery or a high-tech, medical procedure, twenty-four parents and twenty-two caregivers were included.
Methods: After approval by The Swedish Ethical Review Authority, open-ended interviews were conducted. Analysis was grounded in phenomenology and hermeneutics.
Results: Parents describe the need for control, a sense of trust and distrust, overcoming your fear and the subtle participation. Children describe feelings of being powerless, striving for control, experiencing an ambiguous comprehensibility and of seeking security. Caregivers' experiences of parental presence focused on a conditional presence, a necessary relationship, a shared but two-part responsibility and a need to demonstrate professionalism.
Conclusion: All involved persons faced challenges in this unpredictable and multifaceted situation. The children struggled with anxiety due to inability to protect themselves from perceived external threats. There is a need for support, participation, and an equal exchange of relevant information if parents and children are to feel confident and included. From the caregivers' perspective, parental presence is not free of obligations and expectations. In high-tech environments caregivers play a key role in cooperating with the children and their parents to create a sense of trust and improve quality of care.

P008

Patients' experiences of cognitive impairment following critical illness treated in an intensive care unit. A scoping review

Anette Bjerregaard Alrø[1], Helle Svenningsen [2], Helene Korvenius Nedergaard[3], Hanne Irene Jensen[4], Pia Dreyer[1]

[1] Aarhus University Hospital, Aarhus, Denmark
[2] Research Centre for Health and Welfare Technology, Aarhus, Denmark

[3] Department of Anaesthesiology and Intensive Care, Kolding, Denmark
[4] Department of Anaesthesiology and Intensive Care, Kolding, Denmark

Introduction: Critical illness and treatment in an intensive care unit (ICU) has increased survival with modern technology. However, many patients are affected by their critical illness for months or years following discharge, as they suffer from cognitive impairments. Long-term cognitive impairments can severely affect patients' quality of life (QoL). Exploring patients' experiences on how and which cognitive impairments affects their everyday lives is important to improve planning of relevant research into interventions that may alleviate the burden of post-intensive cognitive impairments.
Aim: To review the literature on patients' experiences of cognitive impairment following critical illness treated in an ICU.
Methods: This scoping review was conducted using the methodology recommended by the Joanna Briggs Institute. A systematic search was conducted in PubMed, Cinahl, PsycInfo and Embase. References and citations in relevant studies were explored. The Covidence tool was used by two independent researchers to identify relevant studies for inclusion. The Mixed Methods Appraisal Tool was used for critical appraisal.
Results: We identified 11 relevant qualitative and/or quantitative studies. Four themes were found: 'Suffering from poor memory', 'Managing everyday life', 'Unsupported by the healthcare system' and 'Strategies for support in recovery'. Patients used various strategies during their recovery and rehabilitation to regain independence and avoid being a burden. They needed information to support their recovery and rehabilitation; otherwise, they felt unsupported and betrayed by the healthcare system.
Conclusion: Patients experienced various cognitive impairments following critical illness in the ICU, affecting and challenging their QoL and adaption to everyday life. Knowledge gained by exploring patients' experiences of cognitive impairments following critical illness in the intensive care unit can contribute to improve clinical practice by targeting and optimising patients' recovery and rehabilitation processes.

P009

Factors that affect patient safety in intrahospital transport of critically ill patients

Karolina Myrzell [1], Yasmine Helenius[2]

[1] Yasmine Helenius, Stockholm, Sweden
[2] Karolinska University hospital, Huddinge, Sweden

Introduction: Intrahospital transport (IHT) of critically ill patients is a hazardous procedure that may jeopardize patient safety and inflict injury to the patient. By highlighting which factors promote and which factors have a negative impact on patient safety, the IHT process can become a less hazardous procedure.
Aim: The aim was to identify factors which affect patient safety during intrahospital transport of critically ill patients.
Method: The method used was a systematic integrative literature review. Article searches were conducted using two databases, PubMed and Cinahl. Quality assessment applied the framework of Caldwell et al. Data analysis was done using inspiration from Whittemore och Knafl´s integrative analysis method.
Result: Two categories, with subcategories, emerged from the results: "Organizational prerequisites and working methods" and "Team based and individual competencies". Institutional organization, routines and working methods as well as the hospital's environment were factors that could both negatively impact and promote patient safety. Individual knowledge was essential, and the team should be well coordinated with good communication between members, to enhance patient safety.

Education was shown to have a positive impact. Neglecting preparations and important checks turned out to be a threat to patient safety. Careful preparation and use of checklists was described as beneficial for patient safety.
Conclusions: Patient safety during IHT of critically ill patients is affected by different factors ranging from individual level to the structure of the organization. By addressing these factors patient safety can be enhanced and patient injury may be avoided.

P010

Relatives' and ICU Personnel's Perspectives of Care in Organ Donation: Protocol of a Multiple Methods Study

Meyer Käthe[1], Gudrun Rohde[2], Gro Frivold[2]

[1] Oslo University Hospital, Oslo, Norway
[2] University of Agder, Kristiansand, Norway

Introduction: The organ donation process is complex, and patients' relatives play a vital role. Intensive care professionals need knowledge about how relatives perceive and experience the process to create a caring environment and support them throughout.
Aim: To explore both relatives' and intensive care personnel's perspectives of care in deceased organ donation in Scandinavia.
Setting and participants: Participants from the ICU setting in Norway, Denmark and Sweden.
Methods: In 2023 The Family Satisfaction in the Intensive Care Unit questionnaire was translated into a Danish version, The Professional Competence in Organ Donation Questionnaire into a Swedish and Danish version.
A cross-sectional survey measuring Scandinavian relatives' perception of support in and satisfaction with the organ donation process, and a cross-sectional survey measuring Scandinavian intensive care personnel's competence in organ donation are the foundation of the project.
Both surveys will undergo descriptive and comparative analyses. The findings will be used to inform the interview guides for our qualitative studies. To delve deeper into relatives' experiences with organ donation, we will conduct in-depth interviews. These interviews will be analyzed using thematic analysis as outlined by Braun and Clarke. Additionally, we will employ focus group interviews to explore the perspectives of ICU personnel. These interviews will also be analyzed using thematic analysis.
Moreover, the results from both our qualitative and quantitative research will inform the development of tailored programs for care, support, and communication within the organ donation process."
Results: The project was funded by the Norwegian Organ Donor Foundation in 2022 and Scandiatransplant in 2023. Norwegian nurses' organization supports the project by funding a PhD-student. The PhD-student was employed by the University in Agder May 2024.
Conclusion: This project will provide new knowledge which will assist us in designing and establishing programs for care, support and donor relatives' involvement in OD processes.

P011
Poster has been withdrawn

P012

Developing an online course to support nurses' patient observation skills in intensive care units

Mika Alastalo[1], Lotta Tiikkainen[1]

[1] Laurea University Of Applied Sciences, Vantaa, Finland

Introduction: Observing a patient's clinical condition is very important for the safe and high-quality care of a critically ill patient. However, studies show that there is room for improvement in the observation skills of critical care nurses.
Aim: The aim of the development work was to create a Massive Open Online Course (MOOC) focused on clinical patient observation, usable for nurses' orientation in intensive care units (ICU). It is aimed to be available to all Finnish ICUs, potentially standardizing the basic competencies of new critical care nurses in observation skills and further improving the quality of critical care in Finland.
Setting & participants: The development work focused on ICUs and new nurses entering ICUs in Finland.
Methods: The MOOC structure was based on a framework of observation skills developed in previous research. The MOOC development involved experts from a university of applied sciences (critical care nursing teachers, media producer, digital pedagogy expert) and nursing experts (n=9) from four ICUs. They participated in defining and producing the MOOC content and evaluated it at different stages.
Results: The MOOC is divided into three content modules, including text materials, visual elements, videos, and podcasts. Case examples using interactive digital methods support learning. Whereas, automatically assessed knowledge tests support competency assessment. The MOOC includes reflection tasks bridging theoretical assignments with practical learning during orientation. The MOOC was piloted in two intensive care units 2024. Based on the pilot test, minor changes were made to the content, after which the MOOC was ready to be made available for ICUs.
Conclusions: The MOOC can be used in ICUs to strengthen the observation skills of nurses. Learning is not limited to the theoretical content, but the learner is guided to apply the knowledge both in MOOC exercises and in genuine care situations.

P013

The impact of team leader's communication on team performance in ad hoc teams

Oddveig Aaberg[1], Ellen Benestad Benestad[1], Dag Thomas Sagene Johannesen [2], Gro Frivold[2], Fredrik Jensen[3], Kristine Haddeland[2]

[1] University of Agder, Kristiansand, Norway
[2] UIA, Kristiansand, Norway
[3] Department of Surgery, Kristiansand, Norway

Introduction: Hospital ad-hoc teams are teams function in fast-paced and unpredictable situations, requiring members to coordinate and improvise their actions to address acute medical issues. Communication within these teams is prone to errors, which can affect patient outcomes. Effective team leadership plays a crucial role in ensuring successful teamwork. Previous reviews mainly focused on the impact of team leaders on team performance in general healthcare teams, but little is known about the specific impact of team leader communication on ad hoc teams.
Aim: The aim of this review was to gather knowledge about how team leader`s communication may impact team performance in hospital ad hoc teams Methods: A systematic review was conducted using the PRISMA checklist, and with a narrative synthesis of the results.

Results: Nine articles published between 2015 and 2023 were included in this review, originating from North America and Europe. All articles utilized a quantitative observational design, with six studies conducted in a simulation context and three in real-life settings. The studies primarily focused on Intensive Care Units (ICUs) and Emergency Rooms (ERs), with three including a pediatric context. Various validated measurement instruments were used to assess team leader communication, including the assessment of verbal communication strategies such as closed-loop communication. Team performance was measured through the evaluation of non-technical skills, either alone or in conjunction with technical performance or workflow. The findings from all nine studies consistently demonstrated a significant impact of team leader communication on team performance.
Conclusion: The results in this review indicate that the team leader in ad hoc teams in ER and ICU has a significant impact on the team`s performance in daily practice. The findings underscore the importance of incorporating systematic team training into both educational curricula and hospital practice, emphasizing patient safety and its impact on overall patient outcomes.

P014

"Compassion Cultivating Training, is to serve those who serve us"

Linda Legaard Rosenmay[1], Lone Bjergmark Svenningsen[1], Inge Nørby-Lassen[1], Helle Landkildehus Lisle[1], Liselotte Sylvester[1], Camilla Littau Nielsen [1], Henriette Witte Nielsen [1]

[1] Uddannelses centeret, Esbjerg, Denmark

Background: Compassion training to all staff on a Danish hospital to improve job satisfaction and retention. Working in a hospital, places high emotional demands on health care provider, confronting them with other peoples´ pain, suffering, illness, death, violent events and trauma. It makes great demands on empathy and on their ability to handle painful emotions. This also places unique and significant demands on our managers, given that the healthcare providers are extremely motivated, creative, diligent, and focused on their future. A strong emphasis on the working environment and well-being is essential to create an attractive workplace. Investing in initiatives that bolster the resilience and capacity of healthcare providers to deliver care is equally important. Compassion training is an evidence-based program to improve well-being, create resilient working environments, and ensure healthy relationships at work.
Aim: To explore health care providers experiences of participating in a Compassion Cultivating Training intervention.
Methods: The intervention involved health care provider's participation in a Compassion course, held for two hours each week over eight weeks, during which participants completed small assignments to practice compassion. We used The Compassionate Care Questionnaire, to assess the participants' levels of compassionate care, while the Resilience at Work Scale measured workplace resilience. A small survey, featuring open (free text) and close-ended (5-point Likert scale) questions, assessed employees' engagement with and initial impacts of compassion training.
Result: Developing workplace resilience was supporting health care provider's advancing in strengthening the environment and the workforce on a hospital, by self-compassion and lovingkindness to self and others.
Conclusion: The eight-week Compassion Cultivation Training may not address all challenges, but it can resolve key issues for health care providers. Focusing on and improving the work environment is challenging yet essential to maintain and retain staff within the health care system.

P015

Enhancing Nursing Students' Competence in Sexual Health Assessment in Intensive Care: Evaluation of an Educational Workshop

Nikol Bekman[1]

[1] Henrietta Szold Hadassah Hebrew University School of Nursing in the Faculty of M, Jerusalem, Israel

Introduction: Sexuality and sexual health, which are essential to patients' quality of life, are often neglected in intensive care settings. Staff-related barriers, myths, and misconceptions, including the belief that sexuality has no relevance in critical care, contribute to this gap. However, sexual health encompasses more than sexual function, addressing multiple layers of intimacy, which are often compromised in critically ill patients.
Objective: This study evaluated the impact of an educational workshop on nursing students' ability to assess sexual health in complex patient care settings.
Setting and participants: The study was conducted within an advanced clinical master's degree program focusing on intensive care. All 25 students enrolled in the program participated in the workshop.
Methods: The workshop comprised three sections: (1) sexuality in a multicultural society, (2) principles of sexual health assessment, and (3) communication skills, delivered through interactive methods. The workshop was evaluated based on the student's sexual health assessment reports, which were incorporated into their comprehensive health history assignments and included five sexual health-related questions.
Results: Following the workshop, 23 out of 25 students reported conducting sexual health assessments, with 20 identifying sexual health diagnoses and integrating them into patient care plans.
Conclusion: The workshop effectively raised students' awareness and competence in sexual health assessment within intensive care. The findings emphasize the need for structured training on this topic, which could enhance patient-centered care and improve outcomes related to intimacy and well-being in critically ill patients.

P016

Reliability and level of agreement between manual pupil observation versus automated infrared pupillometry in neurocritical care patients

Gemma Via-Clavero[1], Verónica Fuentes-Milà[2], Marta Sanjuán-Naváis[2], Aida Barranco-Rodríguez[2], Cristian Arboledas-Triviño[2], Daniel Rodríguez-González[2], Verónica Giménez-Villa[2], Rita María Nogales-Ibáñez[2], Luisa Corral-Ansa[2]

[1] Hospital Universitari de Bellvitge-GRIN-IDIBELL, L'Hospitalet de Llobregat (Barcelona), Spain
[2] Hospital Universitari de Bellvitge, L'Hospitalet de Llobregat (Barcelona), Spain

Introduction: Examining pupil size, reactivity and symmetry is an essential test in neurocritical care patients. Due to limitations in manual nursing pupil observation, automated pupillometry is emerging as a new technology available at the bedside.
Aim: To assess reliability and level of agreement between manual pupil observation versus automated pupillometry in neurocritical care patients.
Setting & Participants: A single-centre prospective observational study was conducted in a neurological intensive care unit in a tertiary university-affiliated hospital in Spain. Neurocritical patients >18 years old admitted in the ICU with a length of stay >24h were included.

Methods: Pupil size, reaction to light and symmetry were assessed manually by the attendant nurse using a pen torch and with the automated infrared pupillometer by a blinded research nurse. Descriptive statistics, intra-class correlation coefficient (ICC) and percentage of agreement were analysed. Sensitivity and specificity tests were performed.
Results: A total of 197 pairs of pupils (n=394) from 31 participants were examined. Median age was 61 [50-71.5] years and 54.8% were male. The mean difference in pupil size between both methods was 0.73 mm (limits of agreement from -1.39 to +2.86 mm) and concordance was ICC=0.72 [95% CI: 0.43-0.84]. Percentage of agreement for pupilar symmetry assessment between both methods was 83.2% with Kappa coefficient=0.38 [95% CI: 0.21-0.55]. Nurses failed to diagnose 42.3% of the cases of anisocoria detected by the pupillometer. The percentage of agreement for pupil light reactivity was 85.3%, with Kappa coefficient=0.48 [95% CI =0.37-0.59]. The global area under the ROC curve to assess pupil light reactivity by nursing staff was equal to 0.69 [95% CI: 0.64-0.74].
Conclusions: Our results show a low-moderate concordance and level of agreement for pupil size, symmetry and reactivity to light between manual pupil examination and automated pupilometer in neurocritical care patients, although their clinical effects should be analysed.

P017

Intensive care unit nurses and adolescent donation and transplantation training. Scoping review

Meritxell Comas-Carrillo[1], Ignacio Zaragoza-García[2]

[1] Hospital Dr. Josep Trueta de Girona, Girona, Spain
[2] Nursing department, Madrid, Spain

Introduction: The attitude and practice of intensive care unit nurses are crucial for organ donation and transplantation (ODT), for the time and communication they share with family members. Therefore, they can be excellent educators of adolescents, contributing to encourage the authorization of donation among those who represent the future of the community.
Aim: To describe teaching methodologies in ODT for adolescents and analyze their influence on attitudes, beliefs, knowledge and predisposition towards donation.
Methods: Scoping review using MEDLINE, Cochrane Library, Embase, CINAHL, and ERIC, between January 2022 and June 2023. No time or language limits were applied. Two independent investigators reviewed titles, abstracts, and full text according to inclusion and exclusion criteria.
Results: We analyzed 829 abstracts from databases and 50 from citation searches, grey literature and the National Transplant Organization website. 16 articles were selected. The pre-intervention educational knowledge questionnaires showed no significant differences between groups in terms of knowledge and opinions on ODT, but post-intervention, different authors agreed on an improvement in knowledge, linked to less rejection of ODT and promoting a favourable attitude towards donation. None of the experts who provided the training were ICU nurses; one of them was a transplant coordinator but did not indicate in which type of unit. In the training using technological support (video, presentation, web, etc.), the results seem more favourable compared to traditional educational programs (50% vs 14%).
Conclusions: Fifteen teaching programmes have been found to have favourable results on attitudes, beliefs, knowledge and willingness to donate. However, no validated instrument was used to measure these changes. The use of technology is related to better outcomes. No ICU nurses have been identified as trainers.

P018

Efficacy and safety of a repositioning schedule intervention on the incidence of pressure injury in the intensive care unit

Daisy Méhay[1], Pierre-Yves Blanchard[1], Muriel Fartoukh[1], Sandra Paco[2], Romane Lacoste-Badie[2], Alexandra Rousseau[2], Arnaud Nze Ossima[3]

[1] Assistance Publique Hôpitaux de Paris - Sorbonne University, Hôpital Tenon, Paris, France
[2] Assistance Publique Hôpitaux de Paris, URCEST-CRC-CRB, Paris, France
[3] Assistance Publique Hôpitaux de Paris, URC-ECO, Paris, France

Introduction: Patients repositioning is recommended to prevent pressure injury in the intensive care unit (ICU). However, the optimal frequency of repositioning remains debated.
Aim: We aimed to assess the efficacy, as assessed by the rate of pressure injuries, and the safety of a repositioning schedule (intervention) and the cost of the intervention as compared with usual care.
Setting & participants: The study involved 18 medical French ICUs. All consecutive adults admitted to the participating ICUs for less than 72 hours and receiving invasive or non-invasive mechanical ventilation of less than 48 hours were included.
Methods: This study was a cluster-parallel randomized control trial, in which pressure injury prevention measures were implemented as usual (control group) or individualized according to the patients' risk of pressure injury, as assessed by the Braden scale (intervention group). Patients were clinically followed until discharge from ICU or death within the limit of 28 days. Lengh of stay in ICU and in hospital were recorded from each hospital's computerized medical information system.
The study was approved by the Ethics Committee and registered (NCT04550182; French Ministry of Health).
Results: From April 2021 to June 2024, 1232 participants were included, 436 in the intervention group and 796 in the control group. The study is currently in the process of locking the database. Results, available in March 2025, include the rate of pressure ulcers, the rate of adverse events related to the procedure, the time spent treating pressure ulcers, nurses' clinical barriers to patient repositioning, risk factors for pressure ulcers and the cost of the procedure.
Conclusion(s): The results of this study are expected to provide additional insights into pressure injury prevention in the ICU, clarifying the practice of patients repositioning in terms of frequency, efficacy, safety, clinical barriers, and cost-effectiveness.

P019

Spoken and unspoken touch - the perspectives from patients, relatives and healthcare professionals in an intensive care unit

Johanna Rosenqvist[1], Carina Elmqvist[2], Maria Henricson[3], Ann-Christin Karlsson[4]

[1] Linnaeus University, department of caring siences, Vaxjo, Sweden
[2] Head of Research in Department of Research and Development, Region Kronoberg, Vaxjo, Sweden
[3] Faculty of Caring Science, Work Life and Social Welfare, University of Borås, Borås, Sweden
[4] Uppsala University/Campus Gotland, Visby, Sweden

Introduction: Being a patient in the ICU is often a frightening experience, the environment is unfamiliar and you are left in the hands of the healthcare professionals. Healthcare professionals care through touch, it is inevitable. How caring touch is experienced from the patient and relatives in the daily care in the ICU is unknown and therefore important to conduct additional research.

Aim: Describe the experiences of caring touch in an intensive care unit, from patients, relatives and healthcare professionals' perspectives.
Setting & participants: The study was conducted at a county hospital in Sweden in a general ICU-ward, with patients, relatives and healthcare professionals.
Methods: Data were collected through qualitative observations and followed by individual interviews. The analysis was done deductive. The study has been implemented according to the Helsinki declaration and the ethics committee in Sweden has given consent to the study.
Results: Caring touch awakes positive and negative feelings and it can be seen in the patients body and vital parameters. It is then spoken and clear how the patients react to the caring touch. To build a caring relationship between patient and healthcare professional it is important that caring touch is communicated before, during and after touch. The communication can be both spoken and unspoken. Caring touch can give more comfort than words and can also confirm feelings that patients and relatives have, which increases the well-being. Some caring touch that the healthcare professional gives in the daily care is unpleasant for the patient, even if the aim is that healthcare professional wants to do something good for the patient.
Conclusion(s): It is important that the healthcare professionals gives caring touch in a clear way and reflect over how the caring touch is given and how it receives, if it does it can reduce the suffering from care.

P020

Supporting children and adolescents as relatives in Intensive Care Units: Experiences of Nurses with a Child Welfare Role

Gro Frivold[1], Lind Ranveig[2], Asgjerd Litleré Moi[3]

[1] University of Agder, Grimstad, Norway
[2] UiT The Arctic University of Norway,, Tromsø, Norway
[3] VID Specialized University, Bergen, Norway

Introduction: Every year, approximately 20,000 critically ill patients are treated in Norwegian intensive care units, with many children and young people finding themselves in uncertain and vulnerable situations as relatives. In 2010, amendments to Norway's Specialist Health Service Act introduced a new child welfare role among health care personnel to support children and young family members in specialist health care services. This role also extends to supporting clinical personnel who have children as relatives in their hospital units. Our understanding of how intensive care nurses with a child welfare role fulfill their responsibilities is limited, and the challenges they face remain unclear.
Aim: To explore the experiences of nurses who have a child welfare role in an intensive care unit, focusing on their tasks and functions related to the legal requirements established in 2010 in Norway.
Setting and participants: Nurses with child welfare responsibilities were recruited from 8 intensive care units across Norway.
Methods: In-depth interviews were conducted with 14 nurses who have a child welfare role in an Intensive Care Unit. Data were analyzed using an inductive and descriptive approach.
Results: Two main themes emerged: "Statutory Requirements Meet Everyday Limitations" and "Need for Support within the Organization." Nurses reported challenges in fulfilling the legal requirements due to limited resources.
Conclusion: Intensive care nurses in Norway with a child welfare role encounter significant challenges in offering comprehensive support to children and young relatives of critically ill patients. Despite their efforts to foster an inclusive environment and cater to individual needs, opportunities for improvement remain. This study underscores the need for additional resources and organizational support to enhance the effectiveness of these nurses' roles.

P021

Social media usage and attitudes among nurses: Exploring personal, family, and patient health domains

Elena Maoz[1], Asmaa Orabi Osman[1], Ameer Saleh[1], Marine Miriam Attias[1], Yael Torjman[1], Amit Cohen[1], Nikole Bekman[2]

[1] Shamir Academic Nursing School, Hebrew University, Jerusalem, Israel
[2] Henrietta Szold Hadassah School of Nursing, Hebrew University, Jerusalem, Israel

Introduction: Social media has become integral to healthcare, with nurses increasingly using these platforms as part of their professional practice, known as e-professionalism. This engagement shapes their professional identity and supports various health-related activities. Given its widespread adoption, it is essential to understand how nurses utilize social media for their own health, family members' health, and patient care.
Aim: This study aimed to explore nurses' attitudes and usage of social media, focusing on three health domains: personal, family, and patient health.
Settings and Participants: The study was conducted at an academic medical center and included 119 registered nurses from various departments, including intensive care (ICU), internal medicine, pediatrics, and surgical units.
Methods: A descriptive, comparative, cross-sectional design was employed. Data were collected using the "Social Media Professional Attitude and Usage Inventory", a validated tool that measures social media usage and attitudes across the three health categories.
Results: Females outnumbered males, and 30% of the nurses had five years or less of experience. ICU and internal medicine nurses represented 40.2% (each) of the sample, followed by pediatrics (12.5%) and surgical (7.1%). While 60% held bachelor's degrees, only 22% had a master's. Nurses reported higher social media usage for personal health (44.5%) and family health (42%) than for patient health (44.3%), with Wikipedia being the most used source (60%). ICU nurses had higher Own Health Attitude (2.82±1.28) than internal medicine nurses (2.51±1.31) but lower than surgical nurses (3.50±1.30). Family Health Attitude scores were significantly lower for ICU nurses (2.71 ± 1.23) than surgical nurses (3.75±1.28).
Conclusions: Nurses extensively use social media across personal and professional domains. Continuous digital literacy training is essential to help nurses critically assess online resources and integrate evidence-based practices. Incorporating social media into professional development and establishing clear policies will promote ethical, effective use in clinical settings.

P022

Medication optimization in patients with systolic heart failure undergoing remote care management program: a randomized clinical trial

Shlomit Jacobson[1], OFRA Raanan[1]

[1] Sheba Medical Cente, Ramat Gan, Israel

Introduction: Numerous studies demonstrated lower mortality, hospitalization rates, and slower heart failure (HF) progression associated with optimized HF guideline-recommended medication. Unfortunately, treatment is frequently suboptimal due to inappropriate dosing. Telemedicine including remote follow-ups and monitoring tools can help improve the treatment through monitoring of patients' vitals, asynchronous communication, tracking of patients' symptoms, and physical and mental condition.

Aim: The aim of the study was to assess the impact of telenursing on the compliance of patients with HF.
Setting & participants: A prospective study enrolled 50 patients with stable yet symptomatic HF, randomizing 33 participants to a 3-month intervention, while the remaining 17 received usual care.
Methods: In the intervention group medication was titrated based on symptoms and vitals automatically transmitted via bidirectional secure messaging from the patient monitoring devices. Reminders were provided according to a predetermined care plan. In the intervention group, physician and nurse supervised titration was facilitated by daily remote monitoring of vital signs and symptoms using a dedicated platform. The study outcome was the percentage of patients attaining guideline-recommended medication and dose attained (% of recommended) for the main HF medications.
Results: Patients were 61±10 years old, mostly male (82%), with an EF of 30±7% and an average NYHA class of 2.4. After 3 months, patients in the intervention group received more sodium-glucose transporter 2 (SGLT2) inhibitors (81% vs. 67%; *p*=0.01) and angiotensin receptor/neprilysin inhibitor (ARNI; 75% vs. 60%; *p*=0.02) and at higher ARNI doses (49% and 38% of optimal dose; p=0.05) compared to the UC group. No severe adverse events occurred.
Conclusion: Remote monitoring of vital signs and symptoms led to higher rates of HF therapy use and higher doses of some guideline-recommended HF therapy. Digital tools can facilitate efficient communication as well as care coordination enabling few teams to efficiently manage considerable groups of patients.

P023

The EyeCon system – a novel EEG/EMG-based system for the rehabilitation of communication in the unconscious ICU patient

Osnat Aspis[1], Dana Baron Shahaf[1], Goded Shahaf[1]

[1] Rambam Health Care Campus, Haifa, Israel

Approximately 1% of ER admissions involve comatose patients needing intensive care. Many patients may regain consciousness and partial function with optimal rehabilitation. However, many ICUs transfer these patients to nursing care centers, leaving their families hopeless.
Research in recent decades has shown that many patients diagnosed as unconscious display high-level brain activity in fMRI and EEG assessments. However, these insights have yet to be translated into a systematic rehabilitation protocol that can help comatose patients progress toward effective communication. While rehabilitation protocols for coma patients exist, they are not applied in the ICU. Furthermore, therapists often lack feedback on the effectiveness of interventions and whether they should continue with the current approach or switch to a different one. Tools such as fMRI and multichannel EEG may provide valuable feedback, but are too cumbersome for routine real-time use during rehabilitation.
The EyeCon system, developed at Rambam Health Care Campus together with Reuth rehabilitation hospital, is an easy-to-use EEG/EMG-based tool, intended for bedside use by the patient's family, designed to promote and rehabilitate communication in comatose patients. The system employs advanced EEG and EMG algorithms to monitor brain activity and encourage eye blinking for alternative communication.
Early working with the EyeCon system in ICU might accelerate the recovery of other brain functions, shift patients' trajectory from nursing care to rehabilitation centers, and enable families to actively participate in the patient's recovery.

We will present a case study using The EyeCon system we used when treating a 19-year-old woman with anoxic brain injury as a results of an accident. Initially comatose in the ICU, she began blinking in response to commands and moving her hand purposefully after one month of consistent practice with EyeCon. This led to a significant shift in her care, transitioning her from long-term nursing care to a rehabilitation center.

P024

Anti-Bacterial Spa Treatment for Complex Wounds in ICU units

Cernica Chausha Weitman[1]

[1] Hadassah Medical Center, Jerusalem, Israel

Introduction: Prevention and management of biofilm in acute and chronic wounds in ICU units is crucial because biofilm inhibits wound healing. About 90% of all wounds are infected with biofilm. It is not necessarily possible to prevent the presence of biofilm using one technology for cleaning wounds. Early intervention and technologies combination in removing biofilm leads to progress in wound healing process.
Aim: Efficient and rapid treatment is crucial to prevent complications such as severe infection or amputation in intensive care units. Based on extensive knowledge of technologies and their mechanisms of action, I found it appropriate to use and combine various technologies in treating wounds with biofilm. The primary goal was to prevent and manage biofilm in both acute and chronic wounds.
Method: Ten patients with infected acute and traumatic wounds, including gunshot wounds, shrapnel injuries, surgical incisions, and fasciotomies, underwent a three-week treatment. The process consisted of three sequential steps:
Step 1-cleansing and moistening wounds with solution based on active substance HOCL Ph 2.5 for at least half an hour.
Step 2-cleansing and moistening wounds with Prontosan solution, left in the wound for 15 minutes and then cleaned with Debrisoft pad.
Step 3-Silverstream solution with unique properties (cleans, disinfects, removes waste and slough, destroys biofilm) has a wide range antibacterial effectiveness, speeds up the healing process. Wet pads were left in the wounds for the rest of the day.
Results / Discussion: All wounds showed significant improvement, new granulation tissue was formed, continued with negative pressure treatment or secondary surgical closure or skin grafting. gunshot wounds and shrapnel areas showed significant healing, limb amputation was avoided.
Conclusion: This treatment process significantly enhanced wound healing, prevented amputations and accelerated recovery. The method was subsequently applied to treat complex wounds in intensive care units patients.

P025

Methods to Measure Workload of ICU Healthcare Professionals – protocol for a scoping review

Geertje van Limpt[1, 2], Manon Molenaar[2], Frederique Paulus[2], Laura Buiteman-Kruizinga[2, 3]

[1] Haaglanden Medical Center, The Hague, Netherlands
[2] Amsterdam University Medical Center, Amsterdam, Netherlands
[3] Reinier de Graaf Hospital, Delft, Netherlands

Introduction: As healthcare systems increasingly adopt advanced technologies, evaluating their impact on healthcare professionals' workload is essential, especially in high-pressure environments like Intensive Care Units. While these technologies aim to enhance clinical outcomes, they can also introduce complexities that affect cognitive demands. Understanding and measuring this workload is crucial to ensure that new technology supports rather than hinders effective care.
Aim: The aim of this scoping review was to identify instruments and methods for measuring the workload of ICU healthcare professionals, particularly concerning advanced technologies like mechanical ventilation.
Setting & participants: ICU healthcare professionals directly involved in patient care.
Methods: This scoping review followed the Joanna Briggs Institute's framework and PRISMA guidelines. We searched MEDLINE, EMBASE, PsycINFO, CINAHL, Cochrane Library, ISI Web of Science, the WHO International Clinical Trials Registry Platform and Google Scholar, with assistance from a librarian. Two reviewers independently screened records and extracted data using a standardized data charting form. Methodological quality was assessed using the Mixed Methods Appraisal Tool (MMAT). Studies published between 2000 to 2024 that reported original primary data were included, excluding editorials, letters and studies on patient-based scoring systems.
Results: 5235 articles were identified, the selection process is presented in a PRISMA flowchart. Preliminary results indicate that several subjective, psychophysiological, and performance–based methods are used to estimate workload, each varying in feasibility, validity and reliability. These findings were synthesized narratively and presented using tables and figures
Conclusion: This review provides an overview of methods for assessing workload in ICUs, highlighting knowledge gaps and informing future research. The findings serve as a resource for healthcare professionals seeking to measure workload effectively in the context of the ICU, especially in relation to advanced technologies.

P026

Progress and challenges in the treatment of cardiac amyloidosis in ICCU

Khaled Kamal [1], Irina Orinovsky [1], Maher Qdah [1]

[1] Hadassah Ein Karem , Jerusalem , Israel

Introduction: Cardiac amyloidosis is a type of restrictive cardiomyopathy determined by accumulation of amyloid which is represented by misfolded protein fragment in cardiac extracellular space.
There are many types of amyloid protein can affect the heart (most common AL and TTR), and the diagnosis and treatment of cardiac amyloidosis is based on the complex algorithms, based on cardiac and extra cardiac red flags.
In our hospital we treat these patients by using special localized HBI0101 therapy which is a CART T Cells component used to treat AL amyloid patients
Purpose: To demonstrate the effect of amyloid light chain toxins on the organs (heart, kidney) and the dose that HBI0101 therapy can reduce the amyloid light chain to zero.
Methods total of 140 patients were diagnosed with AL OR TTR amyloids. Analyzing the pre-clinical laboratory data.
Results: we found that the treatment was safe and did not cause mortality. The most disturbing problem was severe side effects as a result of over activity of immune system and CHF exacerbation and shock. Therefore, these patients were admitted in the ICCU department and received therapy using intensive monitoring by cardiologist, hematologist and ICCU nurse.
The side effects are manageable and under control, we developed accurate protocols to guide us in managing these patients. We found 100% responsive rate to therapy.
Conclusion: it's very promising therapy, this can show that this new innovative therapy is feasible for amyloidosis patients

P027

Advanced practice nurse in intensive care: challenges and perceptions in French-speaking Belgium

Sabrina Chevalier[1], Joséfine Declaye[1], David Bloemen[1], Alexandre Ghuysen[1], Stipulante Samuel[1]
[1] University of Liege, LIEGE, Belgium

Introduction: Advanced nurse practitioners (APNs) have been internationally recognized for their role in improving patient outcomes and enhancing the quality of care. Some countries like United Kingdom or United States have included these nurses in critical care, particularly in intensive care units (ICUs) In Belgium, the legislation governing this role is expected to be enacted soon, but the practical integration of APNs into the healthcare system remains under consideration.
Aim: This study aimed to explore the challenges, opportunities and perceptions of healthcare staff on the integration of APNs in ICUs in French-speaking Belgium.
Setting & participants: This study included intensive care nurses and physicians from various units in French-speaking Belgium.
Methods: A multicentric, mixed-method study was conducted using a sequential explanatory design. Quantitative data were collected via an online survey to assess perceptions of APNs in practice, while qualitative insights were obtained through semi-structured interviews to gain.
Results: The quantitative phase included 128 nurses and 12 physicians (n = 140). The most strongly supported APN competencies in ICU context were mechanical ventilation management (72,1%), care coordination in cases of brain death (72,1%), the role of educator (78,4%) and care plan coordination (60,9%). Identified barriers to APN implementation included ambiguous legislative frameworks (84%), insufficient recognition (77%) and reluctance among medical personnel (66,5%). Facilitators for successful implementation were clear legislative guidelines (77,7%) and pilot programs (64%). Fourteen in-depth interviews highlighted the need for role clarification, emphasing APNs potential contributions to both practical care and non-technical skills.
Conclusion: The study provided an innovative perspective on the introduction of APNs into ICUs in French-speaking Belgium, identifying both potential roles and key, particularly regarding legislative hurdles. Solutions proposed included the development of specialized training programs to support successful integration, tailored to meet the specific needs of intensive care in Belgium.

P028

Mapping digital health interventions which support recovery in intensive care patients and their family members: A scoping review

Margo van Mol[1], Elke Berger[1], Louise Rose[2]

[1] Erasmus MC, Rotterdam, Netherlands
[2] Florence Nightingale Faculty of Nursing, London, United Kingdom

Introduction: Digital health technologies offer benefits in terms of reducing inefficiencies, limiting costs, and offering a more personalised approach to healthcare access. Digital innovation in interventions to promote recovery for intensive care unit (ICU) patients and their family members holds promise for enhancing accessibility and improving physical, psychological and cognitive outcomes.
Aim: To compile an extensive overview of digital health interventions designed to support recovery of ICU patients and their family members both during and after ICU admission.
Setting: Adult ICUs.

Methods: We searched six databases (inception to September 2023) without language filter: Medline ALL, Embase, Web of Science Core Collection, Cochrane Central Register of Controlled Trials, CINAHL and PsycINFO. Two reviewers independently screened 3485 citations against predefined eligibility criteria and finally identified 18 original studies and eight study protocols with a range of study designs published between 2016 and 2023.
Results: Most (n=15) completed studies recruited patients only. Digital interventions were delivered through apps, virtual reality, videoconferencing and smartwatches. Most studies focused on only one domain of recovery—psychological, physical, or cognitive, and were feasibility studies with mainly preliminary exploration of efficacy outcomes. Barriers and facilitators, systematically mapped, were found in three themes; patient-centred considerations; technological accessibility and usability; and organisation and funding. Digital interventions supplemented with professional support and personalised feedback were more feasible than self-directed interventions.
Conclusions: Most interventions targeted patients directly, only a limited number were tailored to support family members. Interventions incorporating interaction with healthcare professionals and personalised feedback on rehabilitation progress appeared to enhance feasibility and adherence rates. Overall, the evolving landscape of the development and application of digital interventions in the ICU recovery pathway underlines their potential in enhancing quality of life for ICU survivors and family members.
Funding: This work was funded by the Netherlands Organisation for Health Research and Development (ZonMw).

P029

Digital post-intensive care support for patients and their relatives: A comparative cross-country survey study

Esra Olst[1], Margo van Mol[1]

[1] Erasmus MC, Rotterdam, Netherlands

Introduction: The increasing prevalence of Post-Intensive Care Syndrome (PICS) and its family variant (PICS-F) highlights the need for effective post-intensive care unit (ICU) strategies that address long-term physical, cognitive, and emotional challenges faced by ICU survivors and their relatives. Digital health interventions offer promising solutions to these challenges by providing accessible and tailored support.
Aim: To explore components in a questionnaire validation and ICU survivors' needs in digital ICU follow-up services across four different European healthcare systems.
Setting & participants: Adult ICU survivors and their relatives.
Methods: A comparative cross-country survey study. A newly developed questionnaire was used to assess preferences and priorities for digital interventions across Croatia, Germany, the Netherlands, and the United Kingdom. Due to unequal group sizes, a Kruskal-Wallis tests examined differences across countries and demographic variables. Principal Component Analysis (PCA) clarified the relationships between variables, highlighting which aspects of digital interventions were most significant across diverse healthcare contexts.
Results: In total, 106 ICU survivors and relatives participated (Croatia n=4, Germany n=22, the Netherlands n=67, the United Kingdom n=13). The majority aged 44-55 (37%), was female (67%) and highly educated (56%). The PCA reduced the dimensionality of the dataset, identifying three major components: perception, accessibility, and openness to digital health technologies. Participants consistently viewed digital health interventions positively, with no significant differences across countries or demographic groups. The ability to access and engage with digital health tools was relatively uniform (χ^2 (3, N = 106) = 6.105, p = .107), and participants' willingness to adopt digital health technologies was similar across the four countries.

Conclusion(s): While standardized features can enhance engagement of ICU survivors and relatives, a personalized approach in follow-up services remains essential. Future research should examine how digital health interventions function in different healthcare systems to develop more effective post-ICU care strategies in European countries.

P030

Perspectives of critical care survivors on digital follow-up service: international focus group interviews

Anna Zacharelou[1], Margo van Mol[1]

[1] Erasmus MC, Rotterdam, Netherlands

Introduction: The challenges experienced after discharge from an intensive care unit (ICU) require adequate support. Digital services might offer opportunities for delivering remote personalized follow-up service after discharge. However, little is known about critical care survivors' needs and priorities in digital ICU follow-up support, particularly in an international context.
Aim: To describe the needs and priorities in e-health follow-up service among critical care survivors in four European countries: Germany (DE), Croatia (HR), the Netherlands (NL), and the United Kingdom (UK).
Setting & participants: Critical care survivors recruited from two hospitals (HR, NL) and two patient self-help groups (DE, UK).
Methods: A qualitative design with focus group interviews. An a-priory developed interview guide has been composed, pre-tested, and used in local language. Thematic analysis was used to analyze the data.
Results: Four focus groups included 22 participants of which half being women (n=11). We identified three main themes: quality of life post ICU; adequate information in the post ICU period, and the role of technology and suggested e-health functionalities. Each main theme is divided in several subthemes. Participants in all four countries reported informational needs including recognition of health related symptoms, contact information of relevant healthcare professionals, and offering answers to frequently asked questions. The preferences for an e-health tool in ICU follow-up service included simple functionalities, such as large buttons and a voice-controlled password, and should offer space for communication and interaction. Sharing similar experiences via a chat option could turn into a major source of online community support.
Conclusions: European critical care survivors identified a preference for a digital tool including a simple interface and multi-mode accessibility to facilitate their needs, informative material, and virtual space for communication with peers and healthcare professionals.
Funding: Award from European Society of Intensive Care Medicine.

P031

Pioneering Cardiac Education. Nurturing Innovation Where Nurses and Chatbots Converge

Ira Orinovsky [1], Soaad Abu akel[1], Kamal Khaled[1], Sigal Shafran Tikva[1]

[1] Hadassah , Jerusalem , Israel

Effective patient education for cardiovascular procedures is crucial for optimal recovery and compliance. Traditional methods face accessibility and consistency challenges. To address these, we developed CarBot, a chatbot designed to complement nurse-led education for patients undergoing cath lab procedures.
To evaluate the effectiveness of a nurse-guided chatbot in improving cardiovascular patients' understanding, engagement, and satisfaction with education after cath lab procedures, compared to traditional methods alone.
We integrated CareBot into the patient care workflow at Hadassah Medical Center, following face-to-face nurse education. The study involved two groups of 75 patients each: one receiving traditional education from healthcare providers, and the other receiving traditional education plus chatbot support. Patient understanding, engagement, and satisfaction were measured using validated surveys and structured interviews.
Preliminary findings show that patients using the chatbot alongside traditional education demonstrated significant improvements in knowledge retention and engagement compared to the control group. Satisfaction levels were higher, with patients appreciating the immediacy and convenience of chatbot-provided information.
The nurse-guided chatbot shows promise as an effective tool for educating cardiovascular patients after cath lab procedures. It offers a scalable solution to enhance patient understanding and engagement, complementing rather than replacing nursing expertise.Implementing this chatbot technology can streamline cardiovascular patient education, potentially improving patient outcomes while supporting nursing practice in specialized settings like the cath lab. Further research is recommended to explore its long-term impact on health outcomes and integration into diverse healthcare settings

P032

Gender differences in the effect of shift work on ICU and inpatient nurses' marital satisfaction

Natalya Licht[1]

[1] Hadassah hospital, Jerusalem, Israel

Background: Shift work broadly impacts quality of life, especially marital satisfaction.
Purpose: Compare marital satisfaction between nurses' Shift work in intensive care units and inpatient departments, focusing on gender differences to provide valuable insights into the impact of different work environments.
Method: A descriptive-comparative cross-sectional study was conducted among 126 nurses. Data were collected using self-reported questionnaires, including the ENRICH Marital Satisfaction (EMS) scale, focusing on gender differences.
Results: The average EMS score was higher for Intensive care unit nurses (M = 51.58, SD = 11.03) compared to inpatient department nurses (M = 49.00, SD = 9.90), though not statistically significant (p = 0.94). Gender-specific differences were significant among inpatient department nurses in roles and responsibilities (p = 0.004), partner communication (p = 0.014), time spent with partner (p = 0.003), and religious beliefs (p = 0.020) components. Nurses whose spouses worked in healthcare or shifts reported lower marital satisfaction ($p < 0.05$). Linear regression indicated that the partner's profession in healthcare (β = -2.410, $p < 0.05$) and the partner's satisfaction with shift work (β = 2.931, $p < 0.05$) were significant predictors of marital satisfaction.
Conclusion: Addressing gender, unit culture, and other personal factors alongside promoting the connection between employee well-being and the work environment may enhance MS among nurses, fostering a more balanced work-family system and improving professional performance.

P033

Dimensions of Post-Intensive Care Syndrome (PICS)

Beatrice Meucci[1], Francesco Gravante[1], Francesca Trotta[1], Paola Barbato[2], Rosaria Alvaro[1], Ercole Vellone[1], Gianluca Pucciarelli[1]

[1] University of Rome Tor Vergata, Rome, Italy
[2] AORN Cardarelli, Naples, Italy

Introduction: In recent years, the topic of survivorship after discharge from the Intensive Care Unit (ICU) has been investigated to understand how to prevent and treat signs and symptoms that may lead patients to rehospitalisation or diagnosis of PICS. PICS reports multidimensional signs and symptoms that occur after discharge from the ICU. In particular, the dimensions involved are physical, psychological, cognitive and social.
Aim: The aim of this review was to understand how the dimensions of PICS relate and influence each other.
Setting & participants: We had included only primary study with adult patients discharge from ICU.
Methods: This is a scoping review. The research question was performed by P=Critically Intensive Care Patients; C=PICS, C=Survivorship. The literature review stated in March 2024, there were no time or linguistic limitations in bibliographic research. The databases used were Pubmed, CINAHL, Scopus, Web of Science and PsycInfo. The inclusion criteria were: (1) adult ICU survivor; (2) adult patients discharged from intensive care to hospital wards, recovery centres, rehabilitation, outpatient care, home care, community care or other health facilities.; (3) only primary study; (4) Studies determining the relationship between the dimensions of PICS; (5) studies defining the dimensions of PICS as physical, psychological, cognitive and social.
Results: Preliminary results have shown that studying the relationships between dimensions is complex and especially relating all four dimensions, how it can be between physical and psychological dimensions and between physical and cognitive dimension. Also, the social dimension is mentioned in very few works.
Conclusion(s): In conclusion, we can say that further studies will be needed to better understand how the dimensions relate and not only how they influence quality of life. This review has revealed that it is necessary to further investigate how the dimensions of PICS affect each other in order to study preventive strategies.

P034

Nurses' Experience during the October 7th Attack: Contributing Factors to Resilience

Dana Arad[1], Shelly Ashkenazi[2], Mikel Kuniavsky[3], Freda Dekeyser Ganz[4]

[1] Clalit Innovation, Ramat Gan, Israel
[2] Hadassah, Jerusalem, Israel
[3] Ministry of Health, Jerusalem, Israel
[4] Hebrew University, Jerusalem, Israel

Introduction: Disaster events are defined as incidents that occur abruptly, and lead to disruption of functioning and human loss. The sudden attack on Israel on October 7th, 2024, forced the healthcare system to adjust within a few hours to treating thousands of injured patients and providing care under attack. The Intensive Care Unit (ICU) was one of the departments affected, where nurses had to overcome their mental and emotional challenges and provide nursing care.

Aim: To describe nurses' experiences in the first days after the attack and the contributing factors to their practice under stressful conditions.
Setting & Participants: Fifteen nurses from hospitals around the country, and two in areas under attack responded to our questionnaire. Thirteen of them are ICU nurses.
Methods: Nurses were asked to voluntarily respond to a semi-structured questionnaire that was posted on the ICU Nurses Association website from December 2023-February 2024. Verbatim transcripts were analysed using a six-phase inductive thematic analysis.
Results: The nurses described having difficulty providing care, which was influenced by uncertain national and local security; and the quantity and severity of patients requiring special resources. Personal feelings of fear and worry for their family's safety contributed to experiencing difficulty while functioning. However, nurses described a sense of resilience that evolved from feelings of professionalism and a collaborative mission to provide the best care. On a personal level, life resources such as family and collegial support promoted increased resilience.
Conclusion(s): Nurses experienced mental and emotional difficulty because of the attack. Our findings revealed increased resilience from intrinsic and extrinsic factors that contributed to effective professional and personal functioning in the ICU. Our findings can assist in further understanding the factors affecting ICU nurses' practicing under stressful situations. It is recommended that a model for assisting nurses to cope with disaster events be developed.

P035

Improve patient's conditions for recovery after intensive care

Angelica Enqvist[1], Anna Schandl[1, 2]

[1] Department of perioperative care and intensive care, Södersjukhuset, Stockholm, Sweden
[2] Department of Clinical Science and Education, Karolinska Institutet, Stockholm, Sweden

Introduction: Patients who recover from severe illness have an increased risk of complications when being transferred from the intensive care unit (ICU) to the ward. Unforeseen complications can sometimes lead to ICU re-admissions. Early identification of common complications and close collaboration between the ICU and ward can improve the chances of a successful recovery for the patient.
Aim: The aim of this quality improvement work was to develop and test methods to identify patients at risk of long-term problems after ICU-care.
Quality improvement: A validated screening instrument used at discharge from ICU predicting individuals at high risk of long-term problems was tested at a Swedish ICU during two weeks in 2021 to capture the patients need for support at an early stage. The risk patients were followed up by an ICU nurse who examined the patient's physical and mental well-being a few days after discharge from the ICU using a structured checklist. The checklist contained follow-up of recommendations from ICU, questions about sleep habits, nutrition, pain, physical therapy, and social support. Depending on the patient's individual need, supportive interventions were initiated.
Findings: During the test period, 40 patients were screened and 20 were identified as risk patients at discharge. Ten patients were not possible to follow-up due to transfer to other hospital or early discharge from the ward. Ten patients (six men/four women) with an ICU length-of-stay between 21 hours to 20 days were followed up. Of these, eight received extended support such as contact with a counsellor, physiotherapist, dietician and/or additional visits from ICU staff.
Conclusion(s): The results indicates that the screening instrument is feasible to use to identify ICU-patients with a need for early follow-up at the ward. Further, it could be used to improve and support patient in their recovery despite a short length-of-stay at ICU.

P036

Five-year survival and quality of life after ECMO treatment; a prospective cohort study in the Netherlands

Marisa Onrust[1], Floris Jolink[1], Peter H.J. Voort[1, 2], Annemieke Oude Lansink[1]

[1] University Medical Centre Groningen, Groningen, Netherlands
[2] TIAS School for Business and Society, Tilburg, Netherlands

Introduction: There is limited knowledge about long-term outcomes and quality of life after ECMO treatment.
Aim: To report on five-year survival, health-related quality of life (HRQoL) and work-status of patients who received venoarterial (VA) ECMO, venovenous (VV) ECMO or extracorporeal cardiopulmonary resuscitation (ECPR).
Setting & participants: Ten university hospitals and major non-university hospitals in The Netherlands. All ICU's consist of 25 beds or more and are considered level 1 ICU's.
Methods: This is a follow-up study of a previously conducted and published prospective multicenter observational cohort study on survival and cost-effectiveness of ECMO[1]. Patients received ECMO support or ECPR between August 2017 and July 2019. All patients from the original study cohort, who were still alive after five years, received a questionnaire. HRQoL and work-status was assessed.
Results: Of the initial 428 included participants, 194 (45,3%) were alive after one year and 155 (36,2%) are alive after five years. Five-year survival was 45% in patients who received ECMO for respiratory support, 42% for cardiac support and 26% for ECPR (fi. 1). Mean age was 52 years (SD 14,1).
All five-year survivors received a questionnaire, which was returned by 105 (67%) participants. Five-year HRQoL was rated higher than one-year HRQoL (fig. 2), with a median EQ-index value of 0.82 (IQR 0.73 – 1.0). HRQoL on a visual analogue scale (0 - 100) was rated 75 ((median) IQR 65 – 85). After five years, majority of patients are either employed (41%) or retired (31.4%), with 22 individuals (25.6%) declared unfit for work. Slight to moderate problems with mobility and performing usual activities were reported by 40% and 45% of five-year survivors, respectively.
Conclusion(s): Long term follow up shows persistent survival between 12 months and 5 years with acceptable health related quality of life. High investments in hospital admission translates into long-term benefits.

P037

Fight or flight - lived experience of ICU nurses' course towards taking the decision to resign following the COVID-19 pandemic

Anna Slettmyr[1, 2], Anna Schandl[2], Maria Arman[2], Karin Hugelius[1]

[1] Örebro University, Örebro, Sweden
[2] Karolinska Institutet, Stockholm, Sweden

Introduction: During the COVID-19 pandemic, intensive care unit (ICU) nurses were a crucial part of the response. It has been reported that many ICU nurses left their employment both during and after the pandemic. However, studies focusing on the experiences of ICU nurses who resigned are lacking.
Aim: To explore the ICU nurses' course toward taking the decision to resign following the COVID-19 pandemic.
Setting & participants: The study included eleven Swedish ICU nurses who worked during the pandemic and then left their employment in the ICU due to the pandemic.

Method: The participants were individually interviewed, and the data were analysed using a phenomenological hermeneutical method.
Findings: The study participants ended up in a tangle of paradoxes, presented as the following themes: 'To give it all and yet feeling insufficient', 'To experience togetherness and yet feeling alone' and 'To fight for others and yet feeling the need to priorities oneself and flee'. A process developed over time in which the final decision to end their employment in the ICU was an ambivalent but necessary decision to make, which was done with relief, and no regrets, but with sorrow. During the course of making the decision, there might have been 'a window of opportunity' for nursing management or the health care service as an organisation to alter the outcome.
Conclusion: In future, it is important to understand and support the phenomenon of nurses' willingness to care in a pandemic. This research concludes that caring for patients and their families during the pandemic was challenging in many ways. The culture and cultural-bearing norms did not seem to support the nurses all the way, leaving them with no other choice than to resign.

P038

Patient- and family-centered care in adult ICU (FAM–ICU): A feasibility study

Søs Bohart[1], Tina Waldau[1], Anne Sofie Andreasen[1], Merete Ann Møller[1], Thordis Thomsen[1]
[1] Herlev Hospital, University of Copenhagen, Herlev, Denmark

Introduction: In the intensive care unit (ICU), delirium in patients and long-term mental health challenges in both patients and their family members are highly prevalent. To address these issues, patient- and family-centered care has been recommended to alleviate the burdens associated with critical illness and ICU admission. We have developed the patient- and FAMily-centered care in the adult ICU intervention (FAM–ICU intervention). This multi-component intervention comprises several concrete and manageable components and operationalizes patient- and family-centered care principles in clinical practice.
Aim: To evaluate the feasibility and acceptability of the FAM–ICU intervention in adult ICU, including the feasibility of collecting relevant patient- and family-member outcome data.
Setting & participants: We plan to recruit 30 adult ICU patients and their family members at Herlev University Hospital in Denmark.
Methods: We will conduct a pre-/post two-group study design. The pre-group ($n = 15$) will receive usual care and the post-group ($n = 15$) will receive the FAM–ICU intervention. The FAM–ICU intervention involves interdisciplinary training of the ICU team and a systematic approach to information sharing and consultations with the patients and their families. Feasibility outcomes will include recruitment and retention rates, intervention fidelity, and participant outcome data collection feasibility. Acceptability will be assessed through questionnaires and interviews with clinicians, patients, and family members.
Results and conclusion: Data collection is scheduled to begin in January 2025. Preliminary results from the study will be presented at the conference.
The study will assess the feasibility and acceptability of implementing the FAM–ICU intervention, as well as the feasibility of conducting a subsequent stepped-wedge randomized controlled trial. The stepped-wedge randomized controlled trial will investigate the effectiveness on delirium outcomes in patients and the mental health of both patients and family members.

P039

The public's perceptions of patient safety in healthcare: a cross-sectional randomized study

Dana Arad[1]

[1] Clalit Innovation, Ramat Gan, Israel

Background: Patient safety during medical treatment is a central issue for health policy makers and medical teams. In this context, both the Israeli and global health systems, are seeing an increase in the appreciation of the importance of safety indicators for quantitative measurement of treatment safety. Although obviously an important consideration, we did not find any studies of public perception of this important topic. This study was therefore designed to examine the views and opinions of the general public concerning patient safety in the Israeli healthcare system.
Methods: A digital questionnaire was distributed to 620 Israeli citizens, 18 years of age or older, who were randomly sampled from a pool of 75,000 citizens of Jewish origin stratified by gender, age, and area of residence.
Results: Only 18.8% of the sample considered the system to be transparent in reporting and dealing with medical errors, while only 23.6% reported receiving an explanation of the risks and side effects of medications before prescription. In contrast, 56.4% reported receiving information about the risks related to surgeries and invasive operations although only 62.2% claimed to understand the given explanation. Only 61.5% reported going through a proper process of patient identification prior to a test or medical procedure.
Conclusion: Patient safety is a significant concern for the general public whose perceptions should be considered when planning improvements to the system. Healthcare providers must improve their attitudes and remain vigilant in identifying and minimizing risks associated with medical care and in verifying the patient's comprehension accordingly.

P040

Long-Term Cognitive Function in ICU Patients with Delirium: Haloperidol vs. Placebo Treatment

Camilla Bekker Mortensen[1, 2], Lone Musaeus Poulsen[1], Nina Christine Andersen-Ranberg[1], Anders Granholm[2, 3], Maj-Brit Nørregaard Kjær[2, 3], Marie Oxenbøll Collet[2, 3], Stine Rom Vestergård[4], Bodil Rasmussen[2, 4], Louise Stenbryggen Herlev[1], Anders Perner[2, 3], Karin Samuelson[5], Ole Mathiesen[1]

[1] Zealand University Hospital, Koege, Denmark
[2] Collaboration of Intensive Care Research, Copenhagen University Hospital, Rigs, Copenhagen, Denmark
[3] Department of Intensive Care, Copenhagen University Hospital, Rigshospitalet, Copenhagen, Denmark
[4] Department of Anaesthesia and Intensive Care, Aalborg University Hospital, Aalborg, Denmark
[5] Lund University, Lund , Sweden

Introduction: Delirium in ICU patients is associated with increased risk of long-term cognitive impairment. Haloperidol is frequently used for treating delirium, but its impact on long-term cognitive outcomes remains limited. The Agents Intervening against Delirium in the ICU (AID-ICU) trial explored the benefits and harms of haloperidol versus placebo (saline 0.9%) for delirium treatment in acutely ill patients in the ICU also in the context of long-term outcomes.
Aim: To assess the effect of haloperidol on long-term cognitive function in ICU survivors treated for delirium.

Setting & Participants: Three selected ICU sites in Denmark participated in the AID-ICU trial, where patients were randomly assigned to haloperidol or placebo for treatment.
Methods: In this pre-planned, one-year follow-up of the AID-ICU trial, cognitive function was assessed using the Repeatable Battery for Assessing Neuropsychological Status (RBANS) for overall cognition and the Trail Making Tests (TMT) A & B for executive function. Outcomes were analysed using linear regressions adjusting site and delirium motor subtype at randomisation and pre-admission cognitive function (using the Informant Questionnaire on Cognitive Decline in Elderly). Non-responders and deceased patients were assigned the lowest possible scores, and missing data were multiple imputed.
Results: Of 632 patients, 347 were alive at one year, and 135 completed the cognitive assessment (68 in the haloperidol group, 67 in the placebo group). Median RBANS scores showed minimal differences (MD) between groups, with an adjusted MD of 1.19 (95% CI: -3.2 to 7.2, P=0.48). TMT A and B scores were also similar, with adjusted MD of -4.0 (95% CI: -9.0 to 1.1, P=0.122) and -3.8 (95% CI: -24.9 to 14.5, P=0.701), respectively.
Conclusion: The results of cognitive functions showed similar results between the two groups when treated for delirium in the ICU. However, these results should be considered exploratory due to missingness.

P041

Users' perceptions of electronic diaries in healthcare settings. A scoping review

Sara Eklind[1]

[1] Skane University Hospital, Malmö, Sweden

Introduction: Diary writing is a common and well-established nursing intervention in intensive care, positively impacting former ICU patients' psychological rehabilitation. Electronic diaries are becoming increasingly prevalent and, according to initial studies from an intensive care perspective, have proven to be highly valuable and easy to implement. To preserve important values in the transition to electronic diaries, users' (patients, family members, and health care professionals) perceptions should be elucidated before a future implementation.
Aim: The aim was to gain an overview of users' perceptions of electronic diaries in healthcare settings by identifying and mapping existing literature.
Setting and participants: Studies that used electronic diaries for any purpose and involved adult patients, family members, or healthcare professionals in a healthcare setting.
Methods: This scoping review followed the PRISMA-ScR checklist. We included studies on electronic diaries, focusing on users' perceptions. Since electronic diaries in intensive care are a relatively new phenomenon, the search was broadened to include electronic diaries in general. A literature search was conducted in the PubMed and CINAHL databases from January 2014 to September 2024. We included English-language publications and limited the search to adult users.
Results: Initial findings indicate that electronic diaries are easy to use and generally perceived positively. While there are findings on the handling and writing of electronic diaries, no studies have yet explored them from the patient's perspective of reading an already completed diary.
Conclusion: More research is needed on the transition from analog to digital ICU diaries. If such diaries are developed, users should be actively involved in the process.

P042

Achieving inspiratory tidal volumes during continuous chest compressions with two different mechanical devices during resuscitation

MATEJ MAZIC[1]

[1] GENERAL AND TEACHING HOSPITAL , CELJE, Slovenia

Introduction: In resuscitation, we have two goals: to ensure the delivery of oxygen and to restore the spontaneous circulation. ERC guidelines recommend asynchronous ventilation during chest compressions when the patient is intubated. Mechanical ventilation during resuscitation is characterized by achieving lower tidal volumes and high inspiratory pressures due to increased intrathoracic pressure. The purpose of the study was to determine how the continuous performance chest compressions affects the achievement of inspiratory tidal volumes.
Methods: In a simulation environment, resuscitation manikin was endotracheally intubated and connected to ventilator with the following settings: volume-controlled ventilation, Vt 500 ml, PEEP 0, FiO2 100%, respiratory rate 10 breaths per minute. We defined two groups: in the first, we used Lucas® for mechanical chest compressions, and in the second, Autopulse®. The experiment was carried out for 4 minutes, measurement was repeated 3 times. Chest compressions were performed continuous mode. We measured insp. tidal volume, peak pressure and compliance.
Results: In the first group, the mean Vt was 365 ml, mean peak pressure 16 cmH2O and average lung compliance 44 ml/cmH2O. In the second group mean Vt was 237 ml, mean peak pressure 45 cmH2O and average lung compliance 30 ml/cmH2O. The value of the Mann-Whitney test for comparing Vt and peak pressure between groups ranks is < 0.05.
Discussion: There are statistically significant differences in inspiratory tidal volumes and peak pressure between first and second group. When using Lucas®, the average tidal volume was higher than using Autopulse® and the peak pressure was lower.
Conclusion: Tidal volumes with continuous chest compressions that ensure adequate alveolar ventilation is questionable during resuscitation. The results of our research can only be partially generalized to the entire population. Additional research is needed, taking into account different values of lung compliance, chest elasticity, and other, unexplored factors.

P043

The influence of stress level on the emotional state of nurses in the aspect of the occurrence of cardiac arrest

Weronika Król[1], Malgorzata Juda[1], Paweł Więch[1]

[1] University of Rzeszów, Rzeszów, Poland

Intoduction: The occurrence of stress in the professional work of nurses in common phenomenon. It's determined by the specificity of work and factors such as: quick decisions making and performing cardiopulmonary resuscitation (CPR).
Aim: Determining the impact of sress level on the emotional state of nursing staff in the aspect of sudden cardiac arrest.
Setting & material an method: The reseach method used in the study was a diagnostic survey and analysis of the available literature. The research tool was an orignal questionnaire consisting of two parts. The third part of the questionnaire included the Perceived Sress at Work Scale(PSWS). Statiscial analysis were made using Statistica 13.3 package by StatSoft.

Results: The results of PSWS scale clearly indicate the occurrence of stress at work among the respondents. The frequency of cardiopulmonary resuscitation in the work environment was determined by the majority of people at the level of 1-5 cases in the last 6 months of the study. Of all the respondents, 56.1% had a CPR course completed in the last 5 years. Almost 90% of the respondents started CPR on their own. The research has shown that the age of personel, work, expirience and the frequency of participation in CPR help to decrease stress level. The correlation between education and level of stress has not been found.
Conclusions: The occurrence of SCA, participation in CPR or the death of the patient causes stress. More frequent participation in the CPR procedure reduces the perceived stress in compariosn to people who participate in resuscitation activities less often. Employers do not provide psychological care to nursing staff, despite a strong personnel's desire to recive such care in the workplace.

P044

Shaping the Future: Transformational Leadership in Nursing

Naela Hayek[1]

[1] Ben Gurion University of the Negev, Beer-Sheva, Israel

Introduction: The relationship between a caring approach by nurse managers and the Transformational leadership style of the nurse managers that emphasizes empathy and compassion, and staff nurses' work engagement and service quality has yet to be examined in the Israeli healthcare system.
Caring is increasingly recognized and described as the moral ideal and essence of nursing. We conjecture that caring by nurse managers leads to greater staff nurses' work engagement, which in turn will have an added positive effect on service performance and overall staff and patient satisfaction.
Research Goals: To examine the effect of caring by nurse managers on nurses' work engagement and service performance, patient experience, and patient satisfaction in various hospitals in Israel.
Hypotheses: 1. The Transformational leadership style of the nurse managers affects staff nurse's work engagement, the level of service behavior and performance indicators in individual hospital departments. 2. Caring by nurse managers leads to increased service behavior and improved performance indicators in individual hospital departments. 3. Caring by nurse managers is positively related to staff nurses' work.
Setting & participants: Mixed methods approach, 1. questionnaires will be distributed to the head nurses, staff nurses and patients.2. In-depth interviews with the head nurses, nurses' managers and the nursing division directors. Overall level of analysis in the department. Analysis: Regression and multi-level modeling analysis (HLM) and qualitative analysis of the recorded and transcribed interviews.
Conclusions: The findings are expected to contribute to understanding the importance of caring leadership in healthcare organizations, focusing on its role in enhancing patient experience and overall satisfaction. This research is particularly relevant to Israel's National Health Insurance Law, which focuses on improving the quality of care in the public healthcare system.

P045

Development and maintenance of critical care nurses' clinical competence in ECMO therapy in a low patient volume setting

Inga Akeren[1], Jannike Esaiassen[1]

[1] University Hospital of Northern Norway, Tromso, Norway

Introduction: The 10 bed Intensive Care Unit, University Hospital of Northern Norway, provides specialized intensive care therapy in neurosurgery, major thoracic surgery including extra corporeal membrane oxygenation (ECMO), and pediatric intensive care for children aged three months and older, alongside general intensive care services. This scenario demands a broad range of competences among critical care nurses. Our hospital is the sole provider of ECMO treatment within a 12,000 km^2 area. Dispersed population leads to low patient volumes compared to large specialized ECMO centers, with a range of 25-30 patients representing 120-230 days of ECMO treatment yearly. Previously, bedside training and acute circuite replacement training were inconsistent and randomly arranged.
Aim: To develop a standardized competence development plan to ensure high-quality nursing care for ECMO patients in a setting with low ECMO patient volume.
Quality improvement: A multidisciplinary team consisting of nurses, thoracic anesthesiologists and perfusionists developed a standardized competence development plan providing uniform theoretical and practical training, to ensure high-quality nursing care for ECMO patients. The plan includes diverse learning tools like digital lectures, multidisciplinary scenario training, practical guidelines, bedside checklists and a mobile app with video instructions. Some elements are on-time introductory sessions, while others, like the annual multidisciplinary acute circuit replacement training are recurring.
Findings: By implementing this competency plan we enhanced the nurses` understanding of a complex treatment, maintained practical skills for managing acute adverse events, and bolstered multidisciplinary confidence and teamwork, collectively improving patient safety and quality of care. In addition, the plan provided a tool for the department management to overview and plan the overall development and maintenance of competences in the nursing staff.
Conclusion: Platforms for uniform training is transferable to other intensive care units providing complex treatments where the opportunity for high volume experience is limited.

P046

Pneumatics of the NIV Face Mask in CPAP and PSV: How different combinations of filters impact its performance

Matteo Pellegatta[1]

[1] Irccs ospedale san gerardo dei tintori monza, Monza, Italy

Non-invasive ventilation (NIV) is an increasingly used respiratory care treatment for patients with acute respiratory failure. HME and HEPA filters are used in this ventilation modality for both the passive humidification of inspired gases and the prevention of environmental contamination by pathogens.
This study tested the effect of HME filters and atomization on the performance of Ultipor 50 and Ultipor 100 filters by examining the pressure parameters within the mask, peak flow, and tidal volume. Twenty experiments lasting three hours each were performed, with measurements taken at different time intervals and considering different ventilation modes and patient exertion levels. The results showed that the presence of the Ultipor50 filter at the expiratory port significantly impacted the pneumatics inside the mask in the presence of the nebulizer, especially with lower inspiratory work.

Furthermore, in the presence of the filter and with active nebulization, the peak inspiratory flow during CPAP is inversely proportional to the inspiratory effort.
Tidal volume was also affected by the presence of the Ultipor 50 filter (in CPAP) and Ultipor 100 filter (in PSV), with a significant increase in the presence of higher inspiratory effort.
In conclusion, the HME and Ultipor filters showed a significant impact on several variables measured during the experiments, confirming the importance of the type of filter used in respiratory ventilation.

P047

Translation, cultural adaptation and validation in Italian language of the dkt-icn-ita (delirium knowledge test) for intensive care nurses: preliminary data

Silvia Masci[1], Gian Domenico Giusti[2], Valerio Di Nardo[1], Nicola Ramacciati[3], Stefano Bambi[4]

[1] Azienda Ospedaliera "Santa Maria", Terni, Italy
[2] Azienda Ospedaliera di Perugia, Perugia, Italy
[3] University of Calabria, Rende (Cs), Italy
[4] University of Florence, Firenze, Italy

Background: The Delirium Knowledge Test (DKT-ICN) is an instrument, already validated in the original language, that tests intensive care nurses' knowledge about Delirium. The score consists of 26 items that investigate several areas of Delirium. Although the literature has long emphasized the importance of early detection to avoid complications in terms of mortality and morbidity, in clinical care reality ICU Delirium is still undiagnosed. Factors hindering assessment are prevalence of the Hypoactive subtype and training gaps. Currently, no measurement tools with the same purposes as DKT-ICN are available in Italy.
Aim: Italian cultural adaptation and content validation of DKT-ICN.
Setting & participants: The study involved 13 experienced ICU nurses from Terni Hospital.
Methods: The study consisted of two phases: an initial linguistic-cultural validation phase followed by a content validation. Content validity was performed by calculating the Content Validity Ratio (CVR) and Content Validity Index (I-CVI = Item-CVI and S-CVI = Scale-CVI) according to expert opinion. The study was conducted in accordance with the Declaration of Helsinki and Regulation (EU) 2016/679 of the European Parliament and of the Council of April 27, 2016.
Results: The DKT-ICN-ITA achieved a good degree of agreement among evaluators (Fleiss's K 81%). In content validity, scores above the cut-off value were achieved (CVR > 0.57; S-CVI/UA = 0.96; S-CVI/AVE = 0.9; I-CVI ≥ 0.78).
Conclusions: The translation and validation steps yielded satisfactory results. This study, while having limitations (absence of face validity, construct validity, and reliability), aimed to provide the Italian scientific community with a validated tool to test skills on Delirium in ICU nurses: the level of education of nurses, in fact, improves the quality of care by reducing comorbidities and, consequently, health care spending.

P048

From acute cardiac failure treatment to palliative care: changing treatment paradigm in ICCU

Orinovsky Ira[1], Soad Abu Akel[1], Khaled Kamal[1], Maher Quadah[1]

[1] Hadassah Medical Organisation, Jerusalem, Israel

Introduction: Integrating palliative care in the ICCU (Intensive Cardiac Care Unit) setting has become more common over recent years, yet it still remains challenging in daily practice. The ICCU team still finds difficulty switching from intensive care treatment to palliative care In these situations.
Purpose: To promote palliative care in critical care nursing, share dilemmas, face challenges and find effective solutions whilst delivering high quality, person-centered end of life care in the critical care setting. Working with a multidisciplinary team is essential in order to help with end of life decision-making in the ICCU.
Methods: Changing ICCU routines to improve patient comfort, choosing which medications to continue, monitoring, lab tests, appropriate sedatives and respiratory support.
Results: Here we reflect the difficulties experienced by our ICCU staff caring for a 26-year-old oncology patient in remission who suffered from acute cardiac failure as a side effect of Adriamycin. When we saw that our intensive care treatment were not effective anymore and the patient's condition continue to deteriorate, we brought in a multidisciplinary team including oncologists, cardiologists, nurses and our social worker. We then discussed the treatment options with the patient and her family. The patient passed away after 52 days in ICCU on AIRVO support and intravenous morphine drip, with her husband by her side.
Conclusion: As palliative care is more widely seen in acute care settings nowadays, lessons that we have learnt could be used for delivering palliative care more effectively. Using consultative and integrative models for end of life decision making, special communication skills training, education on ethics, conflict resolution and training staff to deal effectively with emotional overload are crucial for optimal palliative care provision to relevant patients and their families within the cardiac intensive care setting.

P049

Early nursing education with STEMI patients before ICCU discharge

Maher Quadah[1], Orinovsky Ira[1], Soad Abu Akel[1], Khaled Kamal[1]

[1] Hadassah Medical Organisation, Jerusalem, Israel

Background: The optimal length of stay in the ICCU should be determined on an individual basis, according to the patient's cardiac risk, comorbidities and functional status. Several studies have shown that low-risk patients can safely be discharged from hospital on day 2- 3 after PCI. A short hospital stay implies limited time for proper patient education. Pharmacological therapy adherence is one of the most important concerns in post STEMI patients. In-hospital nurse-led interventions during the acute STEMI period can increase medication adherence, significantly reduce readmission and mortality.
Purpose: To improve post STEMI patients' adherence following medication recommendations by implementing an in-hospital nurse-led patient education program.
Methods: During 2022, we performed a knowledge assessment of 20 STEMI patients (control group) regarding their medication treatment plan and medical care satisfaction, being hospitalized in the ICCU. During 2023, the ICCU nurses implemented a unique patient-education program, before discharging STEMI patients from their unit. This program was based on the ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation. 2 months following the implementation of this patient-education program, we assessed 20 ICCU patients' knowledge (intervention group).
Results A total of 40 patients, 24-72 hours post STEMI participated in the study. In the intervention group**,** patients had a better understanding of their medical treatment and the necessity to follow a medical regimen, knew better about possible side effects and the correct way to respond to symptoms. Patients in this intervention group were also more likely to be satisfied with the medical care that they had received in the ICCU.

Conclusion: To ensure the best clinical outcomes, nurses need to initiate interventions that optimize patients understanding of prescribed medical care. Implementing early treatment plans via an in-hospital patient-education program will enhance medication adherence, prevent re-hospitalizations and lower morbidity and mortality.

P050

Implementation of an App-Based Competency Development Portfolio in Intensive Care Nursing

Camilla R.L. Bruun[1], Helle Albertsen[1], Mette Gothardt Lundh[1], Gitte Meldgaard Nielsen[1], Marie O. Collet[1]

[1] University Hospital of Copenhagen, Rigshospitalet, Copenhagen, Denmark

Introduction: App-based platforms are essential in supporting nurses' continuous professional development by offering an accessible and dynamic approach. In 2022, an app-based competency development portfolio was introduced in a Danish intensive care unit (ICU), providing a transparent digital tool for competency tracking, onboarding, and guided professional growth through structured competency cards.
Aim: This project evaluated the implementation of an app-based competency development portfolio for nurses by identifying completion rates of competency cards.
Quality Improvement: Implementation occurred in multiple phases using the Plan-Do-Study-Act method for continuous improvement and adaptation. Phases included newly hired nurses (first quarter of 2022), experienced nurses undergoing pediatric training (third quarter of 2023), nurses with prior pediatric experience (second quarter of 2024), and nurses in specialized Critical Care Nurse (CCN) training programs (fourth quarter of 2024).
Findings: As of October 2024, among 114 active staff, 4 had not created a profile, and 5 were pending activation. The app included 41 active competency cards assigned at different stages of ICU nurse training. Engagement levels varied: the suctioning card had a 47% completion rate among 84 users, while pediatric airway management showed a 5% completion rate among 70 users. Of 81 users, 38% completed the patient admission card, and 39% completed the discharge card. Blood transfusion and respiratory therapy cards had 42% completion rates among 84 and 83 users, respectively, while hemodynamics reached 41% among 84 users.
Conclusion: This evaluation indicated strong engagement in key competencies; however, several competency cards remained uncompleted due to implementation timeline. Cards designed for new hires were also assigned to experienced nurses in mentorship roles, which may have diminished their relevance for mentors' own professional development, affecting completion rates. Understanding factors influencing the use of specific competency cards will help develop future strategies for tailored support to maximize effective use of app-based competency portfolios.

P051

Cognitive rehabilitation interventions for patients in the Intensive Care Unit – a systematic integrative review

Marie Collet[1, 2], Lassen Kamila [1], Laerkner Eva[3], Jensen Janet[4], Egerod Ingrid[2, 5], Christensen Jan[6, 7], Jørgensen Kasper[8], Kjærgaard Rikke[9], Olausson Sepideh [10], Wøien Hilde [11], Lange Theis [7], Nielsen Anne [12, 13], Kjær Maj-Brit [5], Bruun Camilla [1], Perner Anders[1], Gamst-Jensen Hejdi[14]

[1] Copenhagen University Hospital, , Copenhagen, Denmark
[2] University of Copenhagen, Dept. of Health & Medical Sciences, , Copenhagen, Denmark

[3] Department of Anesthesiology and Intensive Care, Odense University Hospital, Odense, Denmark
[4] Department of Neurology Zealand University Hospital, Roskilde and Department , Roskilde, Denmark
[5] Department of Intensive Care, Copenhagen University Hospital - Rigshospitalet, Copenhagen, Denmark
[6] Department of Occupational Therapy and Physiotherapy, Copenhagen University H, Copenhagen, Denmark
[7] Department of Public Health, University of Copenhagen, Copenhagen, Denmark
[8] Danish Dementia Research Centre, Copenhagen University Hospital - Rigshospita, Copenhagen, Denmark
[9] Intensive Care survivor, CEO Science Club Denmark, , Copenhagen, Denmark
[10] Institution of health care sciences, Sahlgrenska Academy, University of Gothe, Gothenburg, Denmark
[11] 9. Division of Emergencies and Critical Care, Oslo University Hospital, and Univ, Oslo, Norway
[12] Department of Anaesthesiology and Intensive Care, Gødstrup Hospital, Goedstrup, Denmark
[13] Department of Clinical Medicine, Aarhus University, Aarhus, Denmark
[14] Department of Anaesthesiology, Centre of Head and Orthopaedics, Copenhagen U, Copenhagen, Denmark

Introduction: Following the introduction of a non-sedation paradigm in intensive care, cognitive and functional rehabilitation interventions have advanced, but evidence remains unclear.
Aim: This integrative review aims to describe cognitive and functional rehabilitation interventions performed in the ICU, the healthcare professionals (HCPs) providing the interventions, and the interventions' potential impact.
Setting/participants: Adults ICU patients receiving cognitive and functional rehabilitation during their ICU stay.
Methods: We included quantitative, qualitative, and mixed methods studies and searched four databases (Medline, EMBASE, CINAHL, and Cochrane). Studies were eligible if were published in cent decades, and featured cognitive or functional interventions. Two independent researchers screened all studies for title/abstract screening, full-text screening, assessment of risk of bias, and data extraction.
Preliminary results: The initial search yielded 21.935 studies. After removing duplicates (n=4,163) and excluding studies by title/abstract (n=17,075) and full text (n=654), 34 studies (including 34,167 patients (range, 6 to 31,603) and 1008 HCPs (12 to 862)) were included for analysis. These included 13 randomized controlled trials (RCTs), three non-RCTs, three pilot RCTs, eight cohort studies, three qualitative studies, and one cross-sectional study. Cognitive and functional interventions included memory- and visual exercise, pattern- and number recognition, audiobooks, tactile stimulation, Virtual Reality, mobilization, and therapeutic music. Statistically significant difference between groups receiving cognitive/functional interventions or control at 6–12-month follow-up was reported in six studies for cognitive function, two studies for all-cause mortality, delirium prevalence and functional function, and one study for mechanical ventilation and health-related quality of life. No studies reported any adverse events. Most qualitative studies recommended including occupational therapists (Ots) for cognitive and functional rehabilitation.
Preliminary conclusion: The preliminary results highlight the complexity of cognitive and functional rehabilitation in the ICU and suggest that OTs could play a larger role in these interventions, underscoring the need for further research to develop evidence-based protocols.

P052

Scandinavian healthcare professionals' perceptions of early ICU rehabilitation – So much more than early mobility

Anne Højager Nielsen[1], Ranveig Lind[2], Eva Åkerman[3], Anne Sophie Ågård[4], Marie Oxenbøll Collet[5], Hanne Birgit Alfheim[6], Anna Holm[4], Helle Svenningsen[7]

[1] Gødstrup Hospital , Herning, Denmark
[2] UiT The Arctic University of Norway, Tromsø, Norway
[3] Lund Universitet, Lund, Sweden
[4] Aarhus University Hospital, Aarhus, Denmark
[5] Copenhagen University Hospital, Copenhagen , Denmark
[6] Vestre Viken Hospital Trust, Gjettum, Norway
[7] VIA University College, Aarhus, Denmark

Introduction: Critically ill patients may suffer from long-lasting cognitive, psychological, and physical impairments after discharge. While early mobilisation is well-implemented in guidelines and practice less is known about other rehabilitative activities in the intensive care unit (ICU).
Aim: This study aimed to explore healthcare professionals' views on early rehabilitation practices led by nurses and other healthcare staff in Scandinavian ICUs.
Setting & Participants: The study focused on healthcare professionals working clinically in Scandinavian ICUs.
Methods: Conducted as a cross-sectional survey, this study used an electronic questionnaire designed in Danish and then translated into Norwegian and Swedish. The survey was distributed via Google Forms, and qualitative data were analysed using the framework method.
Results: Rehabilitation activities initiated by ICU nurses and other healthcare staff was described as beginning with ventilator weaning and sedation reduction, progressing to increased mobilisation and strength-building exercises. Emphasis was placed on optimising nutrition, enhancing swallowing function, and promoting oral intake. However, rehabilitation was also described as enabling communication, cognitive engagement, and sensory stimulation to foster mental engagement and will to survive.
Preventing delirium and avoiding overexertion required a careful balance between rest and activity and shielding patients from unnecessary stimuli was therefore described as crucial. Supporting the patient's motivation to recover and involving family members in the rehabilitation process were also key aspects. Participants also described post-ICU rehabilitation activities such as follow-up with patients in wards and post-discharge.
Conclusion: Rehabilitation was described as evolving from passive to active approaches as patients regained consciousness and physical strength. Essential factors for successful rehabilitation included ventilator weaning, maintaining a balance of rest and activity, bolstering the patient's motivation and will to survive, open visitation policies, and interdisciplinary collaboration.

P053

Preparing for mass casualties by training ward nurses to work in ICU

Orly Kolpak[1], Helen Malka -zeevi[1], Michal Vazana[1], Elah Talker[1], Loai Sammar[1], Dalia Tedgi[1]

[1] Galilee medical center, Nahariya, Israel

Introduction: Since October 2023 our country has engaged in a mass casualty war. Hospital management's policy changed, and as a result, patients were transferred to protected and underground emergency settings. The situation highlighted the emergent need for trained nurses in intensive and trauma care in all medical centers in the country.
As part of the emergency preparations of our Medical Center, extensive mapping was carried out for the training of staff members, which included: determining all graduates of emergency and intensive care specialty training. Next step was training nurses from the internal medical division to treat intensive care patients in emergency scenarios.
The goal of the project: Create a structured training program for nurses to treat complex patients; increasing team resilience and a sense of commitment and belonging to the organization.
Quality improvement: The development of a training program for ward nurses caring for complex patients. The program was 6 weeks: two weeks observation and four weeks clinical. Series of weekly frontal lectures on external and internal ventilation, ventilation techniques, auxiliary tests, authorities and responsibilities of the ICU nurse, infection prevention, etc. At the end of the training each participant was evaluated on training and knowledge acquisition.
In order to examine the effectiveness and implementation of the program, a team was formed to collect data, build a personal manual for the trainee nurse that includes a personal task schedule, and a general clinical instructor was selected to coordinate the training.
Conclusion: A total of 40 nurses have been trained. The nurses report an increase in confidence in the treatment of ICU patients discharged to the departments after prolonged ventilation, being confident in identification of the deteriorating patient, accurate execution of professional assessments such as breathing and wound assessment, and professionalization of nursing care for the complex patient.

P054

Development process and initial psychometric evaluation of a questionnaire for quality of recovery after intensive care

Anna Eriksson[1], Lotti Orvelius[1], Kristofer Årestedt[2], Michelle Chew[1], Marika Wenemark[1]

Introduction: Recovery after intensive care are a common used concept in outcome research after intensive care. Recovery can include a reduction in unpleasant physical symptoms, improved emotional well-being, regaining function, and returning to one's usual activities. The recovery process starts at Intensive Care Unit and is an ongoing process, with probably important impact of development or deterioration of impairments. There is a need for a questionnaire that enable to standardize the assessment of recovery after intensive care.
Aim: To develop a questionnaire for quality of recovery for survivors of intensive care in the very near future after intensive care and during the first months of the recovery process.
Setting & participants: The study has been performed at Linköping University Hospital. The participant has been cared at the intensive care unit at Linköping University hospital or Vrinnevi Hospital in Norrköping, Sweden.
Methods: The questionnaire for Quality of Recovery-Intensive Care are developed and tested through five steps:
Identifications of items important for the concept Recovery
Delphi method for content validity
Development of the questionnaire
Cognitive interviews for content validity
Data collection and Initial psychometric evaluation

Results: Forty-seven items were sent to an expert group for the Delphi study, resulting in a 30-question questionnaire. After six cognitive interviews, six more questions were added. A total of 163 patients answered the questionnaire (response rate 46%). The psychometric evaluation of the questionnaire and the five hypothesized dimensions; Psychological scale, Symptom scale, Cognition scale, Activity of daily living sale and Personal resilience demonstrated good model fit with only small modifications in three of the scales.
Conclusion: The initial psychometric evaluation indicated that the overall structure of questionnaire was robust and reliable. This study is a first step towards a standardization of the assessment for recovery after intensive care.

P055

Improving cooperation in Multidisciplinary teams, a quality improvement project

Siri Hansen[1], Sissel Brun[1], Emilie Bøifot[1], Anne-Lise Solum[1], Henrik Eikås[1], Stine Lien Svendsen[1], Kristine Nygaard Bergh[1], Sylvi Vullum[1]

[1] Akershus University Hospital, Lørenskog, Norway

Introduction: In 2022 after the pandemic, we had a drop in the score regarding multidisciplinary collaboration in the annual work environment survey "ForBedring". We sat down a team to investigate and identify key factors for this result. The multidisciplinary team worked two years with this subject in the interhospital quality improvement program.
Aim: The aim of the project is to improve communication and collaboration regarding psychosocial working environment, patient safety, and daily routines in multidisciplinary teams. Multidisciplinary teams consisting of 150 nurses, 11 physicians, 4 physiotherapist, 2 pharmacists and 6 assistant nurses in the Intensive Care Unit (ICU) at Akershus University hospital.
Methods: Quality improvement project over a two-year period.
Findings: We have improved the score regarding multidisciplinary collaboration in the annual work environment survey "ForBedring". The result has increased from a score 79 of 100 to 88 of 100, which is a statistically significant result. Other achievements during this project is an increase in referrals to physiotherapists. Establishments of different social arenas, therapists visit before 9 am, ICU consultant visit before 12 am, multidisciplinary meetings and ICU meetings
Conclusion: We ran a survey among the ICU staff after the first year of the project. The survey showed that to work systematically in a multidisciplinary team to improve communication and collaboration gave results regarding psychosocial working environment, patient safety, and daily routines. Some key factors to this success is management involvement, dedicated staff members in the project, continuous focus and celebration of small victories. Due to psychosocial safe work environment teams can be more effective, increase in patients safety and an increase in work satisfaction for the staff members.

P056

Post-Intensive Care Outpatient Clinic, a quality improvement project

Siri Hansen[1], Kjersti Dilling[1], Wenewshe Hamad[1], Anne Brit Hamborg[1], Nicholas Percy Barlow[1], Stine Lien Svendsen[1], Tina-Marie Hethey[1], Julie Lier[1], Stine Marie Nielsen[1], Gina Østre[1], Sylvi Vullum[1]

[1] Akershus University Hospital, Lørenskog, Norway

Introduction: Anticipating new guidelines regarding early rehabilitation from the Department of Healthcare in Norway we have undertaken a quality improvement project. Our theory is that a multidisciplinary approach will improve patient satisfaction, and reduce the costs and late complications after an Intensive Care Unit (ICU) stay.
Aim: The purpose is to be able to identify late complications after critical illness. By changing from a nurse driven follow up clinic to a multidisciplinary outpatient clinic including physiotherapist and ICU consultant our aim is to be able to meet the demands of screening and follow up of former ICU patients.
Methods: Quality improvement project over a four month period including 16 patients.
Findings: All patients received an anonymized questionnaire after their follow up appointment. 92% of the outpatients experience great beneficial value of the multidisciplinary follow up.
Conclusion: The highlights of the project is that the patients are especially grateful for the opportunity to express their thankfulness to the staff of the ICU. The ICU consultants are able to identify current medication errors and lack of medication follow up post ICU stay. Referral of former ICU patients to primary health care, medication follow up, feedback from former patients gives great satisfaction and motivation for the ICU staff.

P057

Sepsis, signs and symptoms in general surgery patients

Sebastian Geijer[1], Susanna Ågren[1], Märta Sund Levander[2], Carina Hjelm[2], Lena Serrander[2]

[1] Linköping University Hospital, Linköping, Sweden
[2] Linköping University, Linköping, Sweden

Introduction: Surgical patients have multiple risk factors for developing sepsis and patients with hospital-onset-sepsis have almost twice the risk of mortality as patients with community-onset-sepsis. Septic patients presenting in hospital were half as likely to receive a timely assessment and treatment. Early warning systems e.g NEWS2-scale are commonly used to detect deterioration in patients.
Aim: The aim of the study was to identify and describe the characteristics and early signs and symptoms in surgical patients with bacteraemia.
Methods: A convergent, parallel, mixed method study design was used to analyse all general surgery patients with bacteraemia in two Swedish hospitals during 2021-2023. Of 271 patients, 146 were included using a protocol for retrospective review of medical records. Further, 20 patient records were analysed using qualitative content analysis. The ethics review board approved the study (2022-00384-02).
Results: The qualitative analysis revealed the theme *the actions of the healthcare professionals* with the categories *personalised assessment* and *objective measurements*. The most common reason for acquiring blood cultures at detection was fever and chills. In 76 patients aspects were noted but not acted on leading up to the blood culture with increasing body temperature (<38.5°C), patient being tired and weary, deteriorating oxygen saturation and blood pressure and new onset confusion being common. Septic patients (n=50) had higher NEWS2 7 (4-9.3) than non-septic patients 4 (2-6) at blood culture and shorter time had passed since prior assessment, 5h (2-8.8) than non-septic patients 6.7h (4-12). Septic patients received antibiotics 1h (0.5-4) after detection.
Conclusion: Sepsis treatment started at detection and for some patients several hours had passed since the last assessment. There were changes in vital signs, but when these took place is unknown due to time passing between NEWS2-assessments. Changing vital signs and changes in patient's mental- and activity status was not always acted on.

P058

Documentation of the outbreak of the casualty War from the perspective of intensive care nurse leaders in Israel memory preservation

Levana Jacobson[1], Revital Arie Yaish[2], Ella Talker Rafter[1], Ruthy Weksler[3], Dori Ardison[3], Michal Zada[4], Orly Kolpak[1]

[1] Galilee Medical Center, Nahariya, Israel
[2] Barzilai Medical Center, Ashkelon, Israel
[3] Hadassah university medical center, Jerusalem, Israel
[4] Soroka Medical Center, Beer sheva, Israel

Introduction: The outbreak of the Iron Sword War in October 2023 was a significant point in overall aspects of intensive care work in Israel. The great historical significance of this day led to the Association for the Advancement of Cardiac Nursing and Intensive Care in Israel to establish a commemoration format dedicated capturing the lived experiences of ICU nurses.
Aim: A steering committee was established in the association, formulating a digital video interview platform using a script dealing with issues of the interviewee's personal point of view, major events they remember, elements strengthening resilience, and the sense of belonging to the association and its significance for the interviewee
Quality improvement: Narratives of 6 nurses from frontline ICUs. The main topics raised were the great sense of shock from the events of the first day, the rapid recovery, a sense of mission and shared destiny. The significant events described by participants were related to human aspects, the treatment of patients: a tragic case of separation of a family through poetry, a case of multiculturalism and prayer, cases of identifying a missing wounded person and reuniting him with his family and cases related to martyrdom: coming to work under danger and caring for patients while the nurses' family is in a war zone. All the interviewees presented belonging to the organization as promoting and enriching.
Conclusion: The national association goal is to promote research and improve the activity in ICU nurses The documentation videos we created were an opportunity for the teams to describe and commemorate their experience and highlight the great implications of their work. In addition, describing the ability of the teams to recover and dedicatedly care for patients was a point for further research on the subject in terms of the impact of documentation on personal resilience.

P059

Impact of critical illness on ICU family members: a Phenomenological Study

Beatrice Meucci[1], Francesca Trotta[1], Francesco Gravante[1], Rosaria Alvaro[1], Ercole Vellone[1], Gianluca Pucciarelli[1]

[1] University of Rome Tor Vergata, Rome, Italy

Introduction: The ICU hospitalization can generate anxiety and stress in family members. The literature shows how Post Intensive Care Syndrome-Family phenomenon impacts on the Quality of Life (QOL) of ICU survivors family members. But in the literature, the experience of family members in ICU is very limited, for this reason a qualitative approach is recommended to understand their feelings and experience.
Aim: To explore the lived experience of family members of ICU survivors after one month from discharge.
Setting & participants: A convenience sample of 21 participants were recruited at University Hospital in Rome.

Methods: A phenomenological study was conducted using Cohen's method. The subjects were interviewed using an open-question format.
Results: The analysis of the qualitative data resulted in four major themes. Theme 1: Helplessness. Participants described how they felt helpless, not being able to change the condition of their loved ones. Theme 2: The unknown - generating anxiety and stress. The 'not knowing' led to developing anxiety, especially questioning the meaning of life and the uncertainty of the outcomes. Theme 3: Sudden life changes. Participants reported life-changing events, such as leaving or stopping work. Theme 4: (re)discovering the value of affection. Critical illness and the prospect of losing their loved ones helped participants rediscover the value of the closeness of friends and family.
Conclusion(s): The lived experience of the ICU survivors family members was complex. Many of the participants showed their feelings and appreciated the work of the healthcare workers. The study showed common feelings such as anxiety, fear of the unknown and how family and friends helped to alleviate this condition. The findings revealed how the Family-Centred Care approach needs to be expanded in every ICU. The requirement of new studies on ICU survivor family members should be conducted to investigate how their feelings impact on QOL.

P060

Nursing driving protocol for weaning Brain injured patients from Mechanical Ventilation after Tracheostomy

Alexander Furmanov[1], Feras Abu Saway[1]

[1] Hadassah Hebrew University Medical Center, Jerusalem, Israel

Introduction: Mechanical Ventilation is a life-saving procedure. Weaning off ventilation is defined as gradual reduction in parameters according to patient's tolerance, until complete cessation of ventilation and return to independent breathing and removal of the endotracheal tube. Long-term ventilated patients undergo tracheostomy procedure. In patients ventilated through tracheostomy, the challenge is preparing the patient to weaning from the ventilator and transition them to autonomous breathing through tracheostomy. Research shows that using a weaning protocol shortens the duration of ventilation days, weaning time, and length of ICU stay. The use of a ventilation weaning protocol depends on the clinical progress of the patient. The reduction in ventilation days is related to a proactive approach to reducing ventilator support. There is no unified protocol in our unit, therefore weaning process is varied between nurses and physicians as well. Moreover, there is no weaning protocol for Brain injured patients was found in literature as these patients pose a challenge true weaning process due to the nature of their injury.
Aim: Establish work routine according to the unified protocol for ventilation weaning in Neurosurgical ICU. Improving ventilation weaning process in comatose ventilated patients.
Quality improvement: Developing the protocol according to the latest evidence-based practice. Training the nursing staff on the protocol. Lead the ventilation weaning process in Neurosurgical ICU by using a structured protocol.
Findings: Overall days on the mechanical ventilation after tracheostomy was shortened: 14.7 before introduction of the protocol to 8.4 days after (ci ±4.2, p 0.002). As well length of ICU stay was shortened respectively.
Conclusions: Introduction and implementation of the unified structural protocol to the Neurosurgical ICU routine can improve quality of care, shortens ventilator days and therefore decrease length of stay of the patient at the unit.

P061

Clinical knowledge shared by and for Intensive Care Nurses

Iben Tousgaard[1], Birgitte Hoej[1]

[1] PEEPtalk.dk, Charlottenlund, Denmark

Introduction: The need for knowledge sharing among intensive care nurses had been rising. Finding reliable information on clinical practice online could be challenging. To address this need, we developed PEEPtalk,an open access website. PEEPtalk's editorial team consisted of volunteer nurses.
Aim: This abstract aimed to achieve two goals: to share practical knowledge about the creation and management of an open access website, and to disseminate practical nursing knowledge from nurse to nurse. The content was not peer-reviewed; it was validated by the editorial team, which comprised clinical experts.
Quality Improvement: PEEPtalk enhanced knowledge about anesthesia, critical care, and recovery nursing on three levels: research, professional articles, and clinical stories. It was particularly beneficial for nurses who might not typically publish or read scientific articles. PEEPtalk's social media presence also facilitated knowledge sharing and raised awareness of relevant topics.
Findings: There was a growing interest in the website and the sharing of articles. The editorial team behind Peeptalk observed a growing sense of professional pride and satisfaction among novice and experienced authors, who received comprehensive support throughout the editorial process.
Conclusions: The editorial team found it meaningful to work on both maintaining and developing the website, as well as editing articles. Feedback from authors and the interest in the website confirmed this. This ongoing project not only improved patient outcomes and staff efficiency but also fostered a collaborative and educational environment for intensive care nurses including nurse anesthetists and recovery nurses. Furthermore, Peeptalk addressed and published high quality knowledge and research, ensuring the information shared was both relevant and accurate.

P062

The Cycle of Care: Analyzing readmissions to the ICU – A retrospective study

Natalya Licht[1]

[1] Hadassah Medical Center, Jerusalem, Israel

Introduction: A low early readmission rate after 48 hours of discharge is considered one of the quality indicators of care in the ICU. Various reasons have been studied in the past. Examples include an acute condition for which no solution has been found, ongoing chronic illness, or a gap in the quality of care in different hospitalization settings.
Aim: This study aims to characterize patients who were readmitted to the ICU to develop future intervention plans to reduce the readmission rate and improve the quality of care.
Method: a retrospective study that characterized patients readmitted to ICU from 2018-2022 after 48 hours from discharge. Demographic data, physiological and nursing parameters were collected and analyzed from electronic medical records.

Results: 109 patients were hospitalized for at least 24 hours in ICU and were readmitted to ICU after 48 hours. 87% had a BMI of 40 or above with a median ICU LOS (Length of Stay) of 3 days. No statistical differences were found between physiological parameters in females and males. 50% had a severe Charlson Comorbidity Index (CCI>5). 36% were discharged during the weekend. The number of readmitted patients with tracheostomy and CVC decreased over the years before, during, and after COVID-19. A multiple regression model to predict hospital LOS resulted in a significant model [$F(2,74) = 5.06$ $p<0.009$, $R^2=.123$]. Sofa score was significant ($t=2.8$, $p<0.006$) while ICU LOS was not ($t=1.48$, $p=.141$).
Conclusions: Readmission rates were high for patients with significant comorbidity. It is therefore expected that to reduce readmission rates, special attention needs to be given to creating appropriate discharge plans addressing complex patient conditions. In addition, dedicated attention to early identification of deterioration and appropriate treatment after discharge may assist in preventing readmission, thus calling for improved handoff procedures between the ICU and the ward treatment staff.

P063

The impact of ICU delirium management on sustainability: The case of the Liberation (A-F) bundle

Evanthia Asimakopoulou[1], Maria Foka[2]

[1] Frederick University, Nicosia, Cyprus
[2] NGO Intensive Care Forum, Nicosia, Cyprus

Introduction: Delirium is a serious neurocognitive complication in ICU patients, especially those on mechanical ventilation, leading to longer ICU stays, poor prognosis, and long-term cognitive impairments. Effective delirium management improves patient outcomes and ICU sustainability. This study assesses the Liberation (A-F) bundle, an evidence-based approach aimed at reducing ICU delirium, enhancing recovery, and optimizing healthcare resources, aligning with global health and sustainability goals.
Aim: This review assesses the effectiveness of the A-F bundle in reducing ICU delirium, ICU length of stay, and resource utilization to support sustainable, high-quality critical care.
Quality Improvement: The A-F bundle is a multidisciplinary approach to manage delirium and enhance patient outcomes. It encompasses sedation management, pain assessment, daily awakening trials, early mobility, and family involvement to systematically address key risk factors for delirium. This review highlights findings from studies on the bundle's application in ICU settings, showcasing its role in delivering safer, resource-conscious care.
Findings: Research shows that implementing the A-F bundle can lead to a 68% less hospitality mortality, decrease delirium incidence by up to 30%, shorten ICU LoS, and lower the use of physical restraints by over 60%. Additionally, medication use, including sedatives and opioids, decreased by 25%, and adverse events related to immobility, dropped by 20%. Literature also suggests a 15% reduction in ICU resource expenditures. Optimizing a holistic ICU framework for delirium management improves patient outcomes while aligning with SDG 3 (well-being), SDG 4 (quality healthcare training), and SDG 10 (reduced inequalities). Additionally, this approach lowers healthcare costs, supports economic growth (SDGs 1 and 8), and promotes sustainable consumption (SDG 12).
Conclusion: The A-F bundle is an effective tool for enhancing ICU sustainability by reducing ICU mortality, delirium, LoS, medication use, and adverse events. Its integration into ICU protocols supports patient-centred care, improves resource efficiency, and contribute to overall healthcare sustainability.

P064

Iron Sword War vs. COVID-19: A Comparative Analysis of Intensive Care Nurse Function and Quality of Care Factors

Irit Weisbord[1], Natalie Lancman[1], Ilya Kagan[2]

[1] Rabin Medical Center, Petach Tikva, Israel
[2] Ashkelon Academic College, Ashkelon, Israel

Background: After providing healthcare during the COVID-19 pandemic, our health system had to face another emergency – a war. On October 7th, 2023 Israel suffered the biggest terrorist attack in its history, sparking the Iron Swords war. Our medical center treated 1,038 wounded; 100 casualties were treated in ICU. There are no studies that compare the factors involved in coping with mass casualties and pandemic situations.
Aim: To compare background variables, personal and work characteristics, as predictors of the functioning and quality of care among nurses in ICU between war and pandemic situations.
Method: A cross-sectional survey ICU nurses during 2024 and 2020. The data were collected using a questionnaire that examined the same variables as the study during the pandemic.
Results: Of the 100 participants, 65% were female 78% treated the wounded. 35% (vs. 39.4% in the COVID-19 study) reported very high stress levels (4-5, on a scale of 1-5); Only 6% during the war compared to 23.3% during COVID-19 reported difficulty (4-5) to provide quality care; 66% compared to 54% during pandemic, rated their level of functioning as very good to excellent (4-5, on a scale of 1-5). During the war, resilience was lower M=2.65) vs. M=3.68, on a scale of 1–5), lower severity of physical symptoms (M=2.03 vs. M=3.32, on a scale of 1–5)
Regression analyses highlighted differences in the contribution of variables in nurses' functioning in emergency. Resilience was significant during the war and hope played a protective role during the pandemic. Significant differences were found in symptom burden and burnout, higher during COVID-19 compared to the war.
Conclusions: The study findings emphasize the need to continue implementing policies to nurses in ongoing disaster situations in order to improve quality of life and well-being at work and ensure better outcomes and quality of care

P065

Relationship between EuroSCORE and nursing workload in cardiac postoperative ICU after cardiac surgery

Nataša Stojaković[1], Milena Mikić[1], Višnja Mihajlović[2], Jelena Vučković[3]

[1] University of Novi Sad, Faculty of Medicine, Novi Sad, Serbia, Novi Sad, Serbia
[2] Technical Faculty Mihajlo Pupin, University of Novi Sad, Serbia, Zrenjanin, Serbia
[3] University of Novi Sad, Faculty of Medicine, Novi Sad, Serbia

Introduction: In recent years, many authors have suggested that the European model of risk stratification in cardiac surgery (EuroSCORE), created to assess mortality risks after cardiac surgery based on the number and weight of patient-related risk factors, may also be useful in predicting the length of stay in the Intensive Care Unit (ICU), the probability of postoperative complications and the total costs of treatment.
Aim: To evaluate the relationship between the level of operative risk and the nursing workload during postoperative period in the ICU following cardiac surgery.

Materials and methods: This study was conducted over a four-month period in 2022 at the Institute of Cardiovascular Diseases of Vojvodina, a sample of 270 patients who underwent cardiac surgery. Data were collected prospectively and analyzed based on the operative risk level determined by the EuroSCORE model and the level of nursing workload in the ICU post-surgery. Nursing workload was assessed using two scoring systems: the Nursing Activity Score (NAS) and the Nine Equivalents of Nursing Manpower Use Score (NEMS).
Results: The degree of operative risk and the level of nursing workload were correlated: EuroSCORE and NAS ($r=0.196$, $p<0.0005$), EuroSCORE and NEMS ($r=0.207$, $p<0.0005$). In relation to the types of surgery (coronary, valvular, combined), there was a statistically significant difference in mean values of NAS ($p=0.004$) and (NEMS $p=0.001$).
Conclusion: There is a positive correlation between operative risk level and nursing workload. Higher EuroSCORE value is associated with increased NEMS and NAS scores, indicating greater nursing workload. Patients who underwent combined cardiac surgery require the highest nursing workload in the ICU.
Key words: EuroSCORE,
NAS, NEMS, Nursing Workload, ICU, Cardiac Surgical Procedures.

P066

Interpretation of the Arterial Waveform in Intensive Care Nursing

Barbora Homolova [1]

[1] Na Homolce Hospital , Prague 5, Czech Republic

Introduction: Invasive monitoring of arterial blood pressure is an essential tool in intensive care for assessing patients' hemodynamic status. Detailed analysis of the arterial waveform provides deep insight into circulatory dynamics, which is fundamental to optimizing the treatment of critically ill patients.
Aim: To evaluate the significance of arterial waveform interpretation combined with other monitoring methods in assessing and managing the hemodynamic status of critically ill patients.
Setting & Participants: The study was conducted in the Cardiovascular Intensive Care Unit at Na Homolce Hospital, involving critically ill patients requiring invasive arterial pressure monitoring.
Methods: We performed advanced interpretation of arterial waveforms in conjunction with continuous electrocardiogram (ECG) monitoring and measurement of cardiac output using the HemoSphere hemodynamic monitor (Edwards Lifesciences, USA). Specific morphological changes in the arterial waveform were analyzed and correlated with hemodynamic parameters and patients' clinical conditions. We focused on the rapid identification of pathological conditions and responses to therapeutic interventions such as fluid administration and inotropic or vasopressor medications.
Results: The integration of data from arterial waveform analysis, ECG, and cardiac output monitoring allowed us to precisely identify hemodynamic abnormalities, including cardiac arrhythmias and changes in cardiac output. These insights were critical for individualizing treatment protocols and optimizing hemodynamic support. Continuous monitoring enabled immediate responses to changes in the patient's condition and real-time assessment of the effectiveness of therapeutic interventions.
Conclusion(s): Advanced interpretation of the arterial waveform is an invaluable tool in intensive care nursing. Integrating this analysis with other monitoring methods enhances the accuracy of hemodynamic assessments and supports informed clinical decision-making. Expertise in this area is essential for nurses in intensive care units and significantly improves the quality of care for patients in critical condition.

P067

Developing interprofessional team competency training for early speaking valve intervention within the intensive care in Sweden

Mia Hylén[1], Amy Freeman-Sanderson[2], Patricia Hägglund[3], Maria Sehlin[3], Fanny Silfwerbrand[1], Anna Liisa Sutt[4], Liza Bergström[5]

[1] Skane university hospital, Malmö, Sweden
[2] University of Technology, Sidney, Australia
[3] Umeå univeristy, Umeå, Sweden
[4] Royal London Hospital, London, United Kingdom
[5] Karolinska institutet, Stockholm, Sweden

Introduction: In Sweden, speaking valves (SV) are not used with tracheostomised patients while attached to a ventilator, despite this practice well-established internationally. Early SV intervention during ventilation requires interprofessional training, high-level knowledge, skills and team collaboration, and demonstrated competencies to ensure safe implementation. Benefits of Early SV extend beyond improved patient communication to increased participation, rehabilitation, and shorter ventilator, tracheostomy and ICU duration.
Aim: This research aims to describe an interprofessional SV competency training program with the overarching goal to inform future training and implementation practices within ICUs in Sweden/internationally.
Setting & participants: Competency training was conducted at two university hospital ICUs in Sweden with the interprofessional ICU team consisting of intensivists, nurses, physiotherapists, and speech therapists.
Methods: Protocols and guidelines were sourced from international centres where routine early SV practice and research occurs. Translation and adaption to the Swedish context was conducted by a multi-site, interprofessional Swedish ICU research group (n=6), in collaboration with international SV experts and researchers (n=4). The training program's educational taxonomy was collaboratively developed, using range of pedagogical learning activities, including blended learning (on-line modules and high-fidelity simulation workshops) appropriate for ICU clinicians.
Results: The competency training included two components. The first, addressed essential, foundation knowledge and theoretical basis, as per adapted guidelines. Ten on-line learning modules (8-10 minutes) were completed sequentially; each building on knowledge, skill description, and team-collaboration. A post-module quiz was completed prior to the next module. The second component included hierarchical simulation training (increasing patient case complexity) facilitated by international experts and the Swedish interprofessional team.
Conclusion: International research advocates for early SV use with tracheostomised ventilated patients. To effectively prepare the interprofessional team to perform this complex clinical intervention we propose a pedagogical multifaceted learning approach to inform future training practices. Additionally, future research will investigate early SV implementation.

P068

A narrative approach to understanding patients´experinces of being awake and on mechanical ventilation

Marte-Marie Karlsen [1, 2], Lena Günterberg Heyn [3], Kristin Heggdal [4]

[1] Lovisenberg diaconal university college, Oslo , Norway
[2] Oslo University Hospital , Oslo , Norway

[3] University of South-Eastern Norway , Drammen , Norway
[4] VID Specialized University, Oslo , Norway

Introduction: Patients are often awake and on mechanical ventilation whilst being admitted to the intensive care unit. These patients often struggle to communicate their experiences and needs due to the technical equipment used for mechanical ventilation and due to their critical illness.
Aim: The aim of the study was to achieve a deeper understanding of how mechanically ventilated intensive care patients construct meaning in the unpredictable trajectory of critical illness.
Setting/participants: The study is a part of a larger study in which ten patients were video recorded while being in the intensive care. Five patients (three men and two women) engaged in interviews about their experiences from the intensive care stay after being discharged and were offered the possibility to see themselves in the video recordings. The study was performed in a University Hospital in South-Eastern Norway.
Methods: A narrative, thematic analysis inspired by Riesmann (2007), was applied to uncover and categorize each patients' unique experiences from the intensive care. Then, the findings were analyzed in a broader context to study shared patterns of experiences across the patients.
Results: A pattern of shared experiences among intensive care patients who were awake while on mechanical ventilation were identified. Three main themes capture the patients experiences: 1) perceiving the intensive care stay as a life-changing turning point, 2) being dependent on and cared for by others, and 3) living with negative and positive ICU experiences.
Conclusion: Being critically ill is a life event that deeply affects a person. The patients' narratives reveal how they understand their experiences in relation to themselves and their surroundings. The results from this study is highly relevant also after the implementation of analgosedation and an increased focus on an active, alert and collaborative patient. The results theferore poses important questions about our current clinical practice.

P069

Diagnostic accuracy of SOFA and qSOFA combining with biomarkers in the detection of sepsis in emergency department

Dimitrios Xythalis[1], Maria Kalafati[2], Vassiliki Karra[1], Styliani Tziaferi[3]
[1] Sismanoglio General Hospital, Athens, Greece
[2] National and Kapodistrian University of Athens, Athens, Greece
[3] University of Peloponnese, Tripoli, Greece

Introduction: Sepsis is an important factor for adverse outcomes in patients with infection in the Emergency Department (ED), thus the role of early diagnosis is fundamental. Various scales have been used for early diagnosis of sepsis. Some studies have suggested combining scales with various biomarkers to increase their validity.
Aim: The aim of the study was to evaluate the validity of qSOFA and SOFA to identify patients with sepsis in the ED as well as to combine qSOFA with various biomarkers, in order to measure whether its validity can be increased.
Methods: Prospective cohort study in the ED was conducted. We proposed white blood cells count (WBC) to be added to the qSOFA criteria, which gave +1 point if they were >12000/mm^3 or ≥15000 /mm^3 and d dimers, which gave +1 point if they were >500μg/L. An increase ≥ 2 points of SOFA score was defined as sepsis according to SEPSIS 3. The sensitivity and specificity of each scale were measured.
Setting and participants: The study was conducted in the ED of a Greek general hospital. Participants were adult patients with suspected infection.

Results: Of the 530 enrolled patients, 100 (18.86%) of them had positive qSOFA score (≥2) and 430 (81.14%) had negative score (<2). Sensitivity for qSOFA (≥2) was 56.72% with a specificity of 93.94%, for qSOFA + WBC >12000 was 79.85% with 80.68%, for qSOFA + WBC ≥15000 71.64% with 87.99%, for qSOFA + ≥500 d-dimers 91.60% with 73.74% respectively. The sofa score had high validity with 99.10% and 94.27% respectively.
Conclusions: The diagnostic accuracy of sepsis were very high for the SOFA scale, but many laboratory tests are required. qSOFA is simpler in use but indicated low sensitivity, which appears to improve with the addition of d dimer measurement though a concomitant decrease in specificity was presented.

P070

Multifactorial analysis of medication error in Polish hospitals with different referral levels – a cross-sectional survey

Katarzyna Kwiecien-Jagus[1], Wioletta Medrzycka-Dabrowska[1], Monika Kopec[2]

[1] Medical University of Gdansk, Gdansk, Poland
[2] University of Warmia and Mazury, Olsztyn, Poland

Introduction: Quality and safe healthcare should be a key priority for all health systems. Nurses play a vital role in drug administration. Detecting drug error causes and planning a prevention strategy should be integral to hospital management systems and the nursing education process.
Aim: The study aimed to identify the reasons for medication administration errors.
Settings and participants. The research study involved nurses working in anaesthesiology and intensive care units from 16 voivodeships in Poland. 402 nurses took part in the project. They were employed at different referral levels. The research was carried out from February 2023 to June 2024. Descriptive statistics, Pearson's, and Chi-square were used. Factor analysis was used to study how independent variables influence dependent variables. A Kaiser test was performed to choose the main components. The assumed significance level in all the calculations was $p<0.05$. STROBE guidelines were used.
Methods: A descriptive and cross-sectional design was used for this study. The research used a standardised Medication Administration Error questionnaire (MAEs).
Results. A multifactorial analysis showed that statements like physicians' medication orders are not legible, orders were not clear, abbreviations in order were used more often, the pharmacy did not prepare drugs correctly, nurses could not count for 24-hour pharmacy service, many patients had the same drugs were strong correlates with the variables like type of unit, position held, type of drug (in that case, IV drug), and the level of education of nursing staff.
Conclusion: The analysis identified the most common problems related to the drug administration process, which may constitute the beginning of developing a non-punitive adverse event reporting system involving the clinical pharmacotherapies in the pharmacology process.

P071

Key Stakeholders' Perceptions of a Healing Environment in Intensive Care Units: A Multiple Case Study Protocol

Edouard Paquet[1], Maria Cecilia Gallani[1], Caroline Gagnon[1]

[1] Université Laval, Québec, Canada

Introduction: Recent medical advancements have significantly increased intensive care unit (ICU) patient survival rates, emphasizing the need to focus on the care experiences of patients, families, and healthcare professionals. The ICU environment plays a crucial role in these experiences, necessitating exploration of its material elements and their interactions with stakeholders to create healing environments.
Aim: To describe key ICU stakeholders' perceptions of what constitutes a healing environment, based on environmental materiality and design concepts.
Setting & participants: A multiple case study in two distinct ICUs within a university hospital, chosen for diverse patient populations and contexts. Each ICU will be treated as an individual case within the study framework. Participants include former ICU patients, family members, and healthcare professionals. This diverse range of participants will provide a comprehensive perspective on the ICU experience.
Methods: Qualitative multiple case study design following Yin's methodology, comprising six phases: A) Non-participant observations for descriptive characterization; B) Participant-observer observations for interpretative characterization; C) In-depth interviews with patients, families, and staff; D) Data triangulation; E) Intra-case analysis; F) Inter-case analysis. This multifaceted approach ensures a thorough comprehensive exploration of the ICU environment from various perspectives.
Results: Findings are expected to integrate supportive design principles, equipping healthcare professionals to better intervene on the adult ICUs' material environment. The results will be used in a subsequent doctoral project to develop and validate an assessment tool for the needs of different key ICU stakeholders regarding the physical environment.
Conclusion: This innovative, interdisciplinary project promotes healing environments in Quebec's ICUs, aligning with humanizing care and person-centered practices. It aims to improve patient and family experiences while opening avenues for further research, contributing to the latest recommendations for quality ICU care.

P072

Promoting a Healing Environment in Intensive Care Units: Creating a Framework to Study Intensive Care Units' Material Environments

Edouard Paquet[1], Maria Cecilia Gallani[1], Caroline Gagnon[1]

[1] Université Laval, Québec, Canada

Introduction: The Intensive Care Unit (ICU) environment affects patient well-being, with suboptimal settings potentially causing health issues for patients, families, and care teams. Limited research explores the relationships between these actors and the ICU environment to enhance the care experiences. Modifying elements of patients' material environment can promote ICU healing environments. This communication outlines a framework for a master's research project describing key actors' perceptions of a healing ICU environment, focusing on materiality and design contributions.
Aim: 1) To present an innovative conceptual framework integrating disciplinary and critical theories related to the environment; 2) To explore the added value of this conceptual framework in studying materiality in ICUs to promote positive care experiences through enhanced healing environments.
Quality improvements: This theoretical reflection employs a two-phase design: individual analyses of Roy's Adaptation Model, Ulrich's Theory of Supportive Design, and Lefebvre's critical theory on space production, and (2) triangulation of these theories to develop an integrated conceptual framework.
Findings: A novel conceptual framework integrating elements from the three theories is proposed, providing a comprehensive approach to understanding the dynamic relationships between individuals and their ICU material environment. This framework offers a structured method for conceptualizing the promotion of a healing environment in ICUs, emphasizing the role of environmental materiality and design.

Conclusion: The developed conceptual framework provides an innovative, interdisciplinary approach to exploring key actors' perceptions of healing environments in ICUs. This framework has significant implications for ICU practice, potentially informing design modifications and interventions that enhance the overall care experience. By focusing on person-centered care and the humanization of ICUs, this research contributes to improving patient outcomes and satisfaction in intensive care settings.

P073

Lessons from the Lived Experience of COVID-19 ICU Patients: Insights for Enhancing Patient-Centered Care

Maria Cecilia Gallani[1], Stephanie Gareau[1], Nicolas Vonarx[1], Jean-François Giguere[1], Patrick Martin [1], Vincent Couture[1], Simon Matthieu[1], Elaine Oliveira[1], Diane Tapp[1], Valérie Desgroseilliers[1]

[1] Université Laval, Québec, Canada

Introduction: ICU hospitalization is a challenging experience for patients and their loved ones. The COVID-19 pandemic intensified these difficulties, introducing unique stressors and emotional burdens. Exploring patients' experiences during this period can provide valuable insights for improving ICU practices, particularly in enhancing patient-centered care.
Objectives: This study was aimed at understanding of the patients' experience of being hospitalized in an ICU due to the COVID-19 based on Human Care Theory.
Setting & participants: The research was conducted in a COVID-designated ICU at a tertiary center in Quebec City. It included ten patients—five who underwent mechanical ventilation and five who did not—recruited 12 months after ICU discharge.
Methods: A qualitative, empirical, and inductive approach with a phenomenological framework was adopted. Ten interviews were transcribed, and qualitative thematic analysis was conducted using NVivo software to generate a thematic, hierarchical, and descriptive structure.
Results: Four major themes emerged: 1. Rift & Breakpoints: Patients described being COVID-positive, sharing common struggles, personal revelations, and emotional breaking points; 2.Being Hospitalized: This theme included the lead-up to hospitalization, relationships with healthcare professionals, feelings of isolation, and the impact of these interactions on their connection to the disease; 3. Claiming Back at Recovery: Participants discussed changes in their roles, recovery challenges, and coping resources, along with significant mementos from their hospital experiences; 4. Spirit of the Time: Patients reflected on responsibilities in virus transmission, public discourse during the pandemic, and evolving care beliefs.
Conclusions: These themes illustrate the multifaceted impact of COVID-19 on ICU patients, emphasizing both shared and individual experiences. Insights gained from this study can guide the adaptation of ICU practices, fostering a more patient-centered approach. By addressing the emotional and relational dimensions of care, healthcare providers can better support patients and their families during critical times, ultimately enhancing recovery and well-being.

P074

Knowledge of ICU personnel about AED and its role according to the 2021 ERC Resuscitation Guidelines

Przemysław Żuratyński[1], Aleksandra Jaworska-Czerwińska[1], Michał Borowczyk[1]

[1] Nicolaus Copernicus University in Torun, Department of Emergency Medical Service, Bydgoszcz, Poland

Introduction: Defibrillation is one of the links in the "chain of survival." It involves the passage of a pulse of electrical energy through the heart muscle to reverse the normal heart rhythm, and should therefore be performed as soon as possible. It is especially important in the pre-hospital setting when out-of-hospital cardiac arrest (OHCA) occurs. Knowledge of automatic defibrillation (AED) and how to perform it should be possessed by everyone, especially medical personnel.
Objective: The purpose of this study was to assess the knowledge of Intensive Care Unit (ICU) medical personnel about AED and its role according to The European Resuscitation Council (ERC) Resuscitation Guidelines 2021.
Methodology: The survey was conducted among ICU medical staff in hospitals in Bydgoszcz, Poland. A proprietary questionnaire was used for the study.
Conclusions: The level of knowledge of ICU medical staff about automated external defibrillation and its role according to the ERC Resuscitation Guidelines 2021 is unsatisfactory. There is a need to focus on detailing the topics of the legal aspects of AEDs in Poland, the system of public access to defibrillation, the steps preceding the use of an AED and the use of a defibrillator in pediatric victims. It is noticeable that there is a definite need for ICU medical staff to expand their knowledge on the subject of automatic external defibrillation. In the opinion of ICU medical staff, the public in Poland definitely lacks adequate knowledge and skills in automatic external defibrillation.

P075

Between Survival and Dying - Chronic Critical Illness in intensive care medicine

Sabrina Pelz[1]

[1] University Hospital Tuebingen, Tuebingen, Germany

Background: Continuous medical, nursing and technical progress is increasing the chances of survival leading of critically ill patients in the ICU. A new group of patients, called "Chronic Critical Illness" (CCI) patients, is emerging, whose medical state is fluctuating and remain dependent on intensive care for a protracted period. The lack of an agreed international definition of the characteristics of CCI patients increases the risk of not recognizing or of misinterpreting present indicators and not responding with appropriate therapists to patient needs. Aim: This term analysis intends to provide an overview of identified characteristics of CCI patients. Studies are difficult to compare without a clear and agreed definition.
Methodology: The study uses the concept analysis method according to Walker and Avant (1998). A systematic literature review combined with a manual search in databases to identify common terms to explain the characteristics.

Results: The resulting eight determining attributes are: “Ineffective stress response leads to allostatic states and load”, "Requires an extraordinary number of life support measures for weeks and months", "Persistent allostatic states lead to damage or death of the target tissue of the mediators and to multiple system disorders, which can lead to adverse drug reactions", "Requires persistent invasive monitoring with devices", "Patient group stabilizes over time, but suffers from inability to regain strength", "Prolonged Mechanical Ventilation in the senses of 21 days consecutive mechanical ventilation and at least six hours per day", "Tracheostomy", "High need for one additional care for airway management”.
Conclusion: Further research is needed to strengthen the evidence of the identified characteristics. A common definition and the resulting assessment tools and coping strategies for identifying and reducing the need for care is essential. Managing the resulting complexity as part of day-to-day care requires a high level of specialist knowledge and skills of the nursing staff.

P076

The use of Amantadine IV to improve arousal in patients following prolonged sedation and ventilation - Case Study

Orly Ashkenazy[1]

[1] SHEBA MEDICAL CENTER, RAMAT GAN, Israel

H.K. was transferred from rehabilitation to intensive care at Sheba Medical Center as a released prisoner during the October 7 War, diagnosed with pneumonia, malnutrition, CHF with an EF of 27%, DVT, and pressure ulcers. In the ICU, she was sedated and mechanically ventilated due to delirium, exhaustion, and hypoxemia. Attempts to awaken her for ventilation weaning were unsuccessful. After initiating treatment with Amantadine, signs of arousal began, with an improvement in her GCS score. Prior her transfer to rehabilitation, she was fully conscious, followed commands, and breathed spontaneously through a tracheostomy.
Consciousness disturbances are a common complication in neurological intensive care, occurring in up to 60% of patients after acute ischemic stroke, intracerebral or subarachnoid haemorrhage. There is limited information on these disturbances among ICU patients who are non-neurological and have not suffered from traumatic brain injury.
Currently, neurological rehabilitation combines physical & occupational therapy, speech therapy, and neuropsychological treatment, promoting functional recovery. Stimulant pharmacological treatments, such as dopaminergic drugs, are also used in the rehabilitation process to promote consciousness recovery. Among the pharmacological treatments that have reached advanced clinical trials, only **Amantadine** has evidence supporting its efficacy in accelerating recovery in post-traumatic patients with consciousness disturbances. Amantadine was initially developed in the early 1960s and was registered in 1966 as an antiviral drug against influenza. A few years later, it was approved for use in Parkinson’s disease. Today, it is one of the commonly used drugs for patients with prolonged consciousness disturbances following traumatic brain injuries. The drug has also been tested in ICU patients with non-traumatic brain injury, showing a significant improvement in consciousness within five days of starting Amantadine treatment. However, the use of Amantadine for restoring function after prolonged sedation and ventilation still requires further research and careful monitoring of side effects and complications.

P077

Improving the quality of nursing care through digitalization

Zaneta Bogoevska Miteva[1]

[1] Zhan Mitrev Clinic, Skopje, Macedonia

Introduction: Digitization at the Zhan Mitrev Clinic is a part of the technological progress that raises health care to an enviably high level and that, using electronic communication, allows no errors that would possibly occur in verbal communication. Zhan Mitrev Clinic is 100% digital hospital for more than 3 years now.
Aim: To access all the relevant and necessary medical data for the patient to the medical/nursing team authorized by the patient, whenever is needed, from the moment of patient's admission/check up to the hospital to the moment of discharge/leaving the hospital. A complete electronic medical file is created with all examinations, findings and medical recommendations, hospital referrals, care plans, nursing lists, therapy for every single visit/admission to the hospital.
Quality improvement: Upon entering the hospital, the patient receives an identification number (based on personal documentation) and all further communication and documentation is done electronically, saved in specialized electronic software, where all the data from the patient is merged creating a medical file which is protected from any misuse.
Findings: Safe, complete and transparent communication between health professionals involved in the patient's care and treatment, authorized by the patient at any given time. Analyzing data, following nursing procedures, connection of medical equipment, software integration of different systems as well as introduction of new, innovative processes are only part of the benefits for healthcare personnel.
Conclusion: All data entered into the system have the highest level of protection against external abuse, protection of personal data through controlled, limited and recorded access at each level of health care.

P078

Differences in Demographic and Clinical Factors According to Symptoms in ICU Patients: A Subgroup Analysis

Christin Saltnes-Lillegård[1, 2], Tone Rustøen[2, 3], Sigrid Beitland[4], Kathleen Puntillo[5], Magne Thoresen[6], Kristin Hofsø[1, 7]

[1] Department of Postoperative and Intensive Care Nursing, Division of Emergencies , Oslo, Norway
[2] Department of Public Health Science, Institute of Health and Society, Faculty of, Oslo, Norway
[3] Department of Research and Development, Division of Emergencies and Critical Car, Oslo, Norway
[4] Specialised Health Care services, Quality and Clinical Pathways, Norwegian Direc, Oslo, Norway
[5] Department of Physiological Nursing, School of Nursing, University of California, San Francisco, United States
[6] Oslo Centre for Biostatistics and Epidemiology, Department of Biostatistics, Ins, Oslo, Norway
[7] Lovisenberg Diaconal University College, Oslo, Norway

Introduction: The experience of bothersome symptoms in ICU patients is well known. However, differentiating subgroups of ICU patients based on their symptom prevalence may provide new insight about associated demographic and clinical factors that could influence symptoms.
Aim: To identify subgroups of ICU patients (i.e., latent symptom classes) based on the prevalence of five symptoms and compare these subgroups according to demographic and clinical characteristics.

Settings and participants: Multicenter study with adult patients from six mixed ICUs in Norway.
Methods: Prospective cohort study. The Patient Symptom Survey was used to assess prevalence of symptoms (i.e., thirst, pain, anxiousness, tiredness, shortness of breath) during seven days in ICU. Latent class analysis was applied to identify subgroups, and Pearson's chi-square test and Welch's analysis were used to compare the groups.
Results: Among 353 included patients, median age was 63 years and 60.3% were male. Three subgroups of patients were identified: Low class (n=126, 35.7%), Middle Class (n=177, 50.1%) and High Class (n=50, 14.2%). High class patients had a high prevalence of all symptoms, and patients in the Low class had low prevalence of all symptoms. Middle Class patients had a high prevalence of thirst and tiredness, and a low prevalence of pain, anxiousness and shortness of breath. The Low and Middle classes had a stable prevalence of symptoms over time, while symptom prevalence increased over time in the High class.
There were significant differences among symptom classes in the use of mechanical ventilation (p=0.012), analgesics (p<0.001), alpha-2 agonists (p=0.004) and fluid restriction (p=0.006). Patients in the High class received significantly more of these treatments.
Conclusions: This study identified a subgroup of ICU patients who experienced a consistently high prevalence of co-occurring symptoms across seven ICU days and received more ICU-related interventions. This relationship warrants further study.

P079

Extubation, crafting the right moment

Daan van IJzeren[1]

[1] UMC Utrecht, Utrecht, Netherlands

Introduction: Extubating patients requires precise timing. Early extubation may put our patients at risk of needing reintubation. On the other hand, delaying extubation prolongs the risks associated with invasive ventilation.
Aim: In our intensive care unit we reported on extubation failure in three different oxygen therapy groups and on duration of invasive mechanical ventilation. The goal is to identify possible routines to improve care in extubation management and the post extubation phase.
Setting & Participants: In the University Medical Center in Utrecht, the Netherlands we threated about 450 adult patients with invasive mechanical ventilation for more than 72 hours in 2021. Common admissions to our ICU are cardiac, thoracic or brain surgery, internal disease and ECMO care.
Methods: A case file study was conducted in which the mode of oxygen therapy was determined (COT, HFNO or NPPV) and new intubations were reported. General characteristics were described and compared using statistical analysis. This research was deemed by the medical ethical committee as non-WHO thus not requiring further approval.
Results: The risk of reintubation after extubation in the whole study group, after a minimum of 72 hours of mechanical ventilation, was 9.6%. The average duration of ventilation was 188 hours.A significant difference was observed between the three different groups of oxygen therapy in the incidence of extubation failure.
Conclusion: These results help guide new policies, including protocols for standardized spontaneous breathing trials and nurse-driven wake-up calls. The goal of these adaptations is to reduce the duration of mechanical ventilation without increasing the risk of reintubation after extubation.

P080

Ensuring Competency in Medical Device Usage: An Online Course Supporting Skills Verification

Anne Kokko[1], Sari Roos[2], Maiju Pellinen[3], Heini Radi[3], Tiina Stenman[4]

[1] Laurea UAS, Espoo, Finland
[2] Health and social services, Helsinki, Finland
[3] Duodecim Publishing Company Ltd, Helsinki, Finland
[4] Wellbeing Services, County of Lapland, Rovaniemi, Finland

Introduction: Ensuring patient and client safety within healthcare organizations requires adherence to regulations and laws on the professional use of medical devices and necessitates highly skilled personnel. Employers bear responsibility for educating employees on the proper use of devices in their clinical settings and verifying their competency. It is equally vital for employees to assess their own competencies and seek additional guidance as needed. Healthcare organizations have various approaches to ensure personnel are competent to operate medical devices, ranging from low- to high-risk classifications.
Aim: An online course was developed to support healthcare organizations in establishing and describing structured processes for verifying employees' competencies in using medical devices across risk levels, from basic to extreme high-risk devices.
Quality Improvement: An online course was established and made available by Duodecim Publishing Company Ltd. The course aligns with the Ministry of Health and Social Care's recommendations on safe device usage ("Lääkinnällisten laitteiden turvallinen käyttö – opas laiteosaamisen varmistamiseen"). The course provides examples of how to create a competency assurance process, including skill demonstrations required for the use of extreme high-risk devices, such as ventilators. The online course details the entire skills demonstration process.
Conclusion(s): This online course creates a framework that benefits both employers and employees by providing a standardized process for competency development and maintenance across medical devices with different risk levels. Employers gain a structured platform for tracking competency development within their units, while employees can demonstrate and verify their accrued competencies, enhancing professional accountability and patient safety.

P081

Turnover intention in intensive care – Impact of work environmental factors and moral challenges

Anniken Maamoen[1], Hilde Wøien[1], Kristina Bondjers[2], Anne Kathrine Langerud[1], Luis Romundstad[1]

[1] Oslo University Hospital, Division of Emergencies and Critical Care , Oslo, Norway
[2] National Centre for disaster Psychiatry, Uppsala, Sweden

Introduction: The global shortage of healthcare workers (HCWs) is an accelerating concern, largely attributed to an aging workforce, inadequate replacement, and retention challenges. The intensive care unit (ICU) environment has borne a substantial burden during the pandemic, presenting a serious concern subsequently. Lack of personnel and increased turnover are major concerns due to their potential to reduce the quality of patient care.
Aim: To identify key factors that influence ICU HCWs intentions to quit or stay in their job.
Setting and participants: Data from the fourth COVID-19 wave was drawn from a longitudinal open cohort study. At the fourth wave, 977 HCWs were surveyed on work experiences and turnover intention.

Methods: Two items from the Michigan Organizational Assessment Questionnaire were used to assess thinking of quitting and intentions to look for a new job. These items were entered as outcomes in two separate hierarchical regression models, using demographics, profession, pandemic exposure, work environment, and moral distress as predictors.
Results: Working in the ICU was associated with thoughts of quitting, as were younger age, lack of information about stress reactions, and where to obtain help. Increased workload, insufficient support from colleagues, and experiences of increased local conflicts were also associated with thoughts of quitting. Younger age was the most prominent factor influencing the intention to look for a new job. Finally, unpredictability with unfamiliar surroundings and colleagues and experiencing moral distress were associated with both thinking of quitting and intentions to look for a new job.
Conclusion(s): The association between HCWs turnover intention and current ICU employment emphasizes the importance of identifying and addressing work environmental factors which contribute to retention in the ICU. The current results highlight targets for creating a stable work environment that retains HCWs and prepares them for future pandemics.

P082

Pulmonary embolism (PE)

Siham Sheble[1], Khaled Kamal[1]

[1] Hadassah Ein Karem, Jerusalem , Israel

Background: Pulmonary embolism (PE) is a blockage in the pulmonary artery or one of its branches caused by an embolus, which could be a blood clot, tumor, air, or fat, originating from elsewhere in the body. Most emboli are blood clots that travel to the pulmonary circulation from deep veins in the legs. The estimated incidence of PE events in the general population varies between 38-112 cases per 100,000 people per year, with an increased incidence with age. Despite improvements in recent decades, the mortality rate from PE remains high.
Classification of PE:
Acute
-Subacute
Chronic
High-Risk PE" or "Massive PE: These cases are associated with high mortality, particularly within 2-72 hours of initial presentation.
Saddle PE:
- This refers to a clot located at the bifurcation of the main pulmonary artery, often involving both the right and left branches. It constitutes 3-6% of all PE cases.
- About 22% of saddle PE cases present with hemodynamic compromise, with a mortality rate of 5%.

Our institution has established the **Pulmonary Embolism Response Team (PERT)**, a unique multidisciplinary team in the country. The team consists of cardiologists, pulmonologists, radiologists, intensivists, emergency medicine physicians, and cardiothoracic specialists.
Every time a **CTA (CT Angiography)** is performed with a suspicion of PE, an alert is sent to the PERT team. A team discussion is immediately held to decide on the most appropriate treatment for the specific patient.
One case involved a young man, a tech professional, who presented with cardiogenic shock. After undergoing catheter-directed thrombolysis, he was hospitalized for several days in the cardiac unit and was eventually discharged back to the community.
Nursing Involvement: There will also be a focus on the role of the nursing team throughout the entire patient journey, from diagnosis through treatment and recovery.

P083

Interventional Radiology and the Relationship with Intensive Care Treatment

Ahmad Namarneh [1], Khaled Kamal[1], Siham Sheble[1]

[1] Hadassah Ein Karem, Jerusalem , Israel

Introduction: In the current technological era, with the introduction of many innovative diagnostic and treatment techniques, these advancements have a direct impact on the population of patients in intensive care units (ICUs). Interventional radiology nurses now find themselves at the center of managing the care of critically ill and unstable patients as they move to and from various ICU departments. Interventional radiology has revolutionized the diagnosis and treatment of a large portion of patients hospitalized in ICUs.
Impact of Interventional Radiology in ICU: Interventional radiology has dramatically changed the management of patients in the ICU, particularly in the following areas:
Trauma Patients: Embolization procedures for injuries resulting from accidents **Obstetrics and Gynecology: Transplant Patients:** Management of complications following organ **Surgical Interventions:** Acute treatments for biliary and renal issues. **Internal Medicine:** Management of acute gastrointestinal bleeding TIPS procedures. **Neurointervention:** Acute stroke events, aneurysms, and head and neck trauma.
One specific case involved an elderly woman with no risk factors for disease who was transferred from a local salon chair to an ICU for neurosurgical care, where she underwent a cerebral catheterization procedure.
Nursing Involvement in Interventional Radiology: The nursing team plays a critical role in managing a large proportion of ICU patients, particularly those undergoing interventional radiology procedures. In our hospital, nurses in the interventional radiology unit are highly trained and authorized to provide intensive care nursing. Some of these nurses also work in both the interventional radiology unit and collaborate in many procedures, which enhances their understanding of treatment protocols, patient progress, and management.
This dual role allows nurses to have a deeper insight into the treatment process, reducing potential complications and providing them with the tools to educate both patients and healthcare teams.

P084

Brugada Syndrome - A lethal condition

Halima Rashed massarwa[1], Siham Sheble[1]

[1] Hadassah Ein Karem, Jerusalem, Israel

Introduction: How a 28-year-old man came for an elective examination and found himself hospitalized in the intensive care unit.
Background: Brugada Syndrome is a genetic disorder characterized by an abnormal ECG and a high risk of sudden cardiac death due to ventricular fibrillation (VF). The syndrome is often associated with unexplained sudden cardiac death (SCD).
Incidence: The condition affects 1 in 2,500 in the general population, being more prevalent in East Asia. It mainly occurs in young males, and in a quarter of those affected by Brugada syndrome, there is a family member who also suffers from or has suffered from the syndrome.
This case study of a young man who came for an elective examination to rule out the syndrome and found himself hospitalized for several days in the intensive care unit**.** His include syncope (fainting), and the arrhythmia typically occurs at rest or during sleep rather than during exertion. Triggers for

arrhythmia include fever, large meals, and excessive alcohol consumption. Certain medications may also contribute to the onset of the syndrome, such as flecainide, propafenone, and anesthetics like propofol.
In addition to presenting the case, we will address the role of the nurse and her partnership in managing the care throughout the patient's journey from admission to return to the community.
Conclusion: Nurses need to know and be prepared to recognize and respond to cardiac emergencies, including sudden cardiac arrest. We should familiarize ourselves about the use of an AED and resuscitation protocols. Understanding Brugada syndrome is crucial for effective patient care and prevention of life-threatening complications. Regular follow-ups are essential for monitoring heart health and device function if an ICD is placed.

P085

Family-centered nursing care: Meeting information needs in intensive care

Anabela Mendes[1], Simão Silva[2], Rui Guerreiro[1], Mónica Bento[3], Catarina Barros Alves[1], Fernanda Bernardo[1], Fernanda Leal[4], Eunice Henriques[1]

[1] Lisbon College of Nursing, CIDNUR, Lisbon, Portugal
[2] Unidade Local de Saúde de Santa Maria; CIDNUR, Lisbon, Portugal
[3] Portuguese Catholic University, PhD student, Lisbon, Portugal
[4] Unidade Local de Saúde de Lisboa Ocidental, Lisbon, Portugal

Introduction: Nurses face challenges in caring for the families of critically ill patients during the health-illness transition(1). Family members have significant information needs and may experience anxiety(2) (3). Nurses aim to provide family needs, focussing on family-centered care (4), considering the family's competencies(5). Understanding which nurse interventions are effective in improving the various dimensions of family-centred care is determinant (6).
Aim: To identify nurses' key communication aspects with family of critically ill patients, focusing on family-centered care.
Setting & participants: Intensive Care Unit [ICU] and ICU nurses.
Methods: A quantitative study collected data through an online questionnaire from ICU nurses in a central hospital, using an online structured and mixed questionnaire(6). Analysis was based on person-centered care model(7) (4). Participant consent and anonymity was ensured. Ethical approval was obtained.
Results: The data emphasizes three essential dimensions: "What is urgent for the family to know,", "Internal resources of the intensive care unit" and "Family participation in care planning and care". Nurses prioritize communicating ICU visiting hours and patient's clinical condition [73. 91%], providing multidisciplinary support [65.21%], unit routines and norms [60.86%], direct phone access [56.52%], assigning a nurse [43.47%], family participation in planning care [30.43%] and participating in nursing care [13. 04%].
Conclusions: Nurses focus on family-centered care, addressing emotional impact, need for information and involvement in decisions. Informing families about visiting hours acknowledges their importance. Communicating the patient's condition helps the family understand health changes and the nurses' interventions. Families' knowledge is a facilitator(1) and integrator, promoting well-being and better family organization. Involving families in care planning promotes respect for their values, improves communication, education, and emotional support (4) and promotes the understanding of critically ill patients' specific needs. The access to care and the involvement of family and friends is determinant (4).

P086

Efficacy and Safety of Pupilometry as an Objective Measurement of Nociception in Critically Ill Patients

Gemma Robleda-Font[1], Candelas López-López[2], Yolanda López de Audicana Jimenez de A[3], Ana Vallejo de la Cueva[4], Juan Roldan-Merino[5], Maria Jesus Frade-Mera[6]

[1] UIC, Barcelona, Spain
[2] Hospital 12 Octubre. , Madrid, Spain
[3] University of the Basque Country (UPV/EHU). School of Nursing, Vitoria-Gasteiz, Spain
[4] Bioaraba Health Research Institute, Vitoria-Gasteiz, Spain
[5] Campus Docente Sant Joan de Déu, St Boi de Llobregat, Spain
[6] Hospital 12 Octubre., Madrid, Spain

Introduction: Pupilometry, which measures pupillary response, is proposed as an objective tool for assessing nociception (pain perception) in ICU patients under deep sedation. Traditional behavioral pain measures are limited in this population due to reduced responsiveness to stimuli. Understanding the reliability and safety of pupilometry for nociception assessment and analgesic guidance is essential for pain management in critical care.
Aim: To evaluate the efficacy and safety of pupilometry as an objective measure of nociception in ICU patients under moderate to deep sedation.
Setting & participants: This randomized, double-blind, multicenter clinical trial included 51 critically ill ICU patients on mechanical ventilation under moderate to deep sedation. All participants met inclusion criteria for pharmacological sedation (Richmond Agitation-Sedation Scale of -3 to -5) and were monitored for pupillary dilation reflex (PDR) in response to calibrated nociceptive stimuli. Exclusion criteria included patients with pupillary or ocular abnormalities and those taking medications affecting pupillary response.
Methods: Standardized Pain Pupillary Index (PPI) and pupillary dilation reflex (PDR) measurements were used to assess nociceptive and non-nociceptive stimuli. Pain was induced using randomized, calibrated tetanic and pressure stimuli while variations in pupillary response were recorded.
Results: Initial findings showed significant PDR changes correlating with nociceptive stimulus intensity, particularly in deeply sedated patients. Pain detection thresholds (PPI) varied by stimulus type, indicating that pupilometry could effectively differentiate between nociceptive and non-nociceptive responses. Safety was confirmed, with no adverse events linked to pupilometry procedures.
Conclusion(s): Pupilometry is a reliable, objective tool for measuring nociception in sedated, critically ill patients, enabling precise adjustments to analgesic interventions.

P087

Adaptation of the Nursing Activities Score in Latvia

Olga Cerela-Boltunova[1], Inga Millere[1], Ingrida Trups-Kalne[1]

[1] Riga Stradiņš University, Riga, Latvia

Introduction: The growing complexity of nursing tasks in Intensive Care Units (ICUs) highlights the need for accurate workload measurement tools. In Latvia, no unified system exists for measuring ICU nursing workload. The Nursing Activities Score (NAS), widely used internationally, was chosen for adaptation to the Latvian healthcare context to help address this gap.
Aim: The study aimed to adapt and validate the NAS for use in Latvian ICUs to measure nursing workload comprehensively.

Setting & Participants: The study included 10 ICU nursing experts for the validation phase and a pilot study conducted with 42 patients and 17 nurses in a Latvian ICU.
Methods: The NAS was translated and validated using the Content Validity Index (CVI). In the first phase, experts reviewed the translation, leading to revisions of specific items. A pilot study was then conducted to evaluate the psychometric properties of the adapted NAS.
Results: The NAS showed high reliability with a Cronbach's alpha of 0.973. The final CVI score for all items was 0.909, confirming its validity for measuring nursing workload in Latvian ICUs. The results from the pilot study indicated that nurses spend 70.14% of their time on direct patient care over a 24-hour period.
Conclusion: The adapted NAS provides a reliable and valid tool for measuring ICU nursing workload in Latvia, which will improve resource allocation, reduce nurse burnout, and enhance patient care quality.

P088

Involving and educating adult intubated and thracheostomized patients in the ICU using a 3D-printed model

Staats Marianne[1], Linette Thorn[1], Trine Lund[1], Katrine Donovan[1], Haastrup Rebecca[1], Pia Dreyer[1]

[1] Aarhus University Hospital, Aarhus N, Denmark

Background: Most ICU patients are mechanically ventilated and is therefore unable to communicate verbally. Due to their critical condition the patients are not always fully aware of their situation and the implications of having a tracheostomy. Being informed may empower ICU patients and the nurses play a central role in supporting patients' ability to know and understand their illness and condition.
In other clinical areas 3D models have been used to increase patients' knowledge and understanding of complex physiological issues.
Aim: To explore if a 3D printed model of a head may support patients' understanding of their condition and their ability to be involved.
Methods: In ICU at a Danish University Hospital a group of nurses developed and designed a 3D printed head visualizing the head and neck areas – the HEADDDA visualization model. This educational tool was used to assist ICU nurses when educating and involving ICU patients bedside about the physiology of their tracheostomy and mechanical ventilation.
We evaluated the use of the HEADDDA in September 2022 through two patient interviews as well as feedback from nurses who had been using the model for bedside patient education.
Results: The two patient interviews showed that the 3D HEADDDA model provided the patients with insight and understanding of the physiological implications of their tracheostomi and mechanical ventilation.
The nurses reported that they welcomed the 3D model to illustrate complex physiologic issues in a simple and easily applicable way. Based on these evaluations, today, the HEADDDA model is fully implemented and frequently used in our ICU.
Conclusions: The HEADDDA visualization model provides ICU patients with insight and understanding of their illness and condition. It supports the nurses in explaining complex physiological issues in a simple way which may contribute to increase patient involvement and quality of patient care in the ICU.

P089

Volatile anesthetics in intensive care units

Andrej Černi[1], Andrej Markota[1], Mateja Krajnc[1]

[1] Univerzitetni klinični center Maribor, Maribor, Slovenia

Introduction: Anesthetics play a vital role in the management of critically ill patients in intensive care units (ICUs), helping them tolerate invasive procedures such as intubation and mechanical ventilation. These medications reduce discomfort, anxiety, and agitation during prolonged hospitalization.
Aim: This study aims to explore the comparative efficacy of volatile anesthetics versus intravenous anesthetics in adult ICU patients.
Methods: A systematic review was conducted using PubMed, ScienceDirect, Web of Science, and CINAHL databases. The review focused on studies examining the use of volatile (sevoflurane) and intravenous (propofol) anesthetics in the ICU setting. The search yielded 10 relevant articles, including 9 randomized clinical trials and 1 systematic review. The sample sizes across studies ranged from 44 to 6105 patients, with a combined total 7134 patients, all of whom were intubated and mechanically ventilated. Studies were assessed using the SIGN method for quality evaluation.
Results: Sevoflurane was associated with significantly faster recovery times (median 10 minutes vs. 25 minutes for propofol, $p < 0.001$), reduced mortality rates within 180-365 days (RR 4.10, 95% CI 1.42-11.79, $p = 0.009$), and lower need for inotropic (RR 2.11, $p < 0.00001$) and vasoconstrictive support (RR 1.51, $p = 0.03$). However, propofol demonstrated better cognitive recovery in older adults, with lower incidence of delayed neurocognitive recovery (14.8% vs. 23.2%, $p = 0.038$).
Conclusion: Sevoflurane offers potential advantages over propofol for long-term sedation in ICU patients, particularly in terms of faster recovery and reduced mortality. However, cognitive outcomes should be considered when selecting an anesthetic for older patients.
The results of our study were obtained as part of MSc project of author AČ and were partially presented at 2024 annual congress of Slovenian Society of Intensive Care Medicine (abstract and poster presentation).

P090

Nutritional gap after transfer from the intensive care unit to a general ward - A retrospective quality assurance study

Anne Knudsen[1], Thordis Thomsen[1], Simone Hansen[1], Heidi Knudsen[1], Tina Munk[1]

[1] Copenhagen University Hospital, Herlev, 2730 HERLEV, Denmark

Introduction: Adequate nutrition is important for recovery after critical illness. Even so, our knowledge of patients' nutritional intake after intensive care unit (ICU) discharge is scarce.
Objectives:We aimed to explore nutritional planning and achieved nutritional intake in ICU patients who transferred from the ICU to general wards.
Methods: A retrospective quality assurance study based on patient chart data.
Inclusion criteria:adult ICU patients transferring to a general ward at Copenhagen University Hospital-Herlev from May to August 2021. Primary outcomes were as follows: having a nutritional plan on the day of ICU transfer. A nutritional plan was defined as follows: (i) individual assessment of energy and protein requirement; (ii) intake, documented as achieved percentage of energy and protein requirements; (iii) prescribed type of nutrition. If using enteral or parenteral nutrition; (iv) the prescribed doses; and (v) the prescribed product. Secondary outcomes were as follows: achieved percentage of energy and protein requirements from day -1 before ICU transfer until day +1 and day +3 after ICU transfer.

Results: We included 57 patients; the mean age was 64 years (±11.1); 43 (75%) patients were male; the median ICU stay was 6 days (interquartile range: 3-11). One (2%) patient had a full nutritional plan according to listed criteria. Patients' median percentage of requirements met declined significantly from the day before to the day after ICU discharge (energy: from 94% to 30.5%; p = 0.0051; protein: from 73% to 27.5%; p = 0.0117). The decline in percentage of requirements met remained unchanged from day 1 to 3 after ICU transfer.
Conclusions: In conclusion, few patients had a nutritional plan when transferring from the ICU to a general ward. After ICU discharge, the percentage of energy and protein requirements met declined significantly and remained insufficient during the first 3 days at the general ward.

P91

Mapping Italian ICUs Humanization of Care: the HumanITA-ICUs project

Giuseppe Tinessa[3], Floriana Pinto[1, 2], Michele Stellabotte[4], Emanuele Buccione[5], Francesco Limonti[2, 6]

[1] Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy
[2] Aniarti - Associazione Nazionale Infermieri di Area Critica, Genova, Italy
[3] Gruppo Ospedaliero Moncucco, Lugano, Switzerland
[4] Asst Grande Ospedale Metropolitano Niguarda, Milano, Italy
[5] Health Local Authority 3 Pescara, Pescara, Italy
[6] Azienda Ospedaliero Universitaria di Ferrara, Ferrara, Italy

Introduction: The humanization of care in Intensive Care Units (ICUs) is crucial for improving patient outcomes and ensuring a compassionate healthcare environment. Covid-19 pandemic compelled ICUs in visiting policy restriction and care humanization projects had slowed down or even stopped.
Improving ICU experiences needs the involvement of all stakeholders with strategies to improve patients' comfort, families' satisfaction and staff wellbeing.
Aim: This study aims to assess organizational and behavioral aspects relating to humanization of care in ICU.
Setting&Participants: The survey was conducted in ICUs located in Italy.
Methods: A self-reported survey based on the framework for the holistic approach to improve intensive care experience was created.
The feasibility and validity of the instrument was evaluated by an expert's panel.
Once the validity was confirmed, the survey was distributed on a large scale across the country.
Data were analyzed into percentage references to map the scale of the phenomenon under study.
Results: To date, thirty ICUs have been involved. The ICUs open 24/7 are a minority in the sample, with others averaging four hours of daily visiting time. Family members or close individuals are allowed to visit, with inconsistent data on the access of minors. Visits are regulated, with exceptions mainly concerning the patient's mental health, end-of-life situations, or clinical deterioration. Sleep protection is largely ensured through reduced lighting and noise at night, and delirium is widely assessed. Privacy is safeguarded as best as possible. In most cases, there is no specific protocol for re-feeding. Updates to family members are provided mostly by physicians and family satisfaction is not assessed. In most cases no support or education related to care humanization are offered to healthcare workers.
Conclusions: The path to humanizing care still appears lengthy, but there are significant signs encouraging continued efforts toward this goal.

P92

Principles for Maintaining the Physiological Circadian Rhythm in Intensive Care Patients at North Estonia Medical Center

Alina Shatilova[1]

[1] North Estonia Medical Centre , Tallinn, Estonia

Introduction: Patients in intensive care are especially susceptible to changes in circadian rhythm, leading to complicated and interconnected sequelae such as sleep disorders, delirium and post intensive care syndrome. Factors related to the intensive care environment such as noise, monitor alarms, ambient light, patient care procedures, monitoring, diagnostic and treatment procedures can cause significant disruptions to the perception of circadian rhythm. These disruptions may lead to the prolongation of the patient's recovery process. **Aim**:The goal is to develop principles for maintaining the circadian rhythms of patients at the North Estonia Medical Centre
Methods: To achieve this objective, evidence-based literature was analysed to describe the essence and factors influencing patients' physiological circadian rhythms. Additionally, intensive care staff was questioned about currently employed methods for maintaining circadian rhythms and to assess the staff's awareness of the topic. A total of 104 employees from 4 ICUs responded to the questionnaire. Furthermore, noise levels were measured over a 24 hour period in 4 ICUs to assess the situation. **Results**: The results indicate that noise levels exceed 80dBA in all measurement locations. As a result of the study , a theoretical framework-based teaching programme and a one-minute learning poster were created to instruct intensive care unit staff in the principles of maintaining circadian rhythms in intensive care patients. **Conclusion(s)**:The daily implementation of principles that maintain circadian rhythms helps create a more empathetic and patient-centered environment, which improves the overall well-being and treatment outcomes of intensive care unit patients.

P093

Exploring the Impact of Escape Room Simulations on Nursing Students' Skills in Intensive Care Settings

José Miguel Cachón Perez[1], Esther García García[1], Oscar Oliva Fernádez[1], Juan Carlos Fernández Gonzalo[1], Elena María Saiz Navarro[1], Millán María Martinez Lopez[1], Laura Lorenzo Allegue[1], Emiliana Rodríguez Franco[1], Beatriz Jiménez Gomez[1], Ana González Vicente[1]

[1] Universidad Europea de Madrid, Villaviciosa de Odón, Spain

Objectives: In the 3rd year of the Nursing Degree program at Universidad Europea de Madrid, a simulated escape room scenario was implemented with the objective of enhancing students' understanding and integration of core clinical content. This activity aimed to explore students' experiences and assess its effectiveness in engaging them in the learning process, measuring utility and satisfaction with the methodology.
Methodology: The simulation was designed as a sequential escape room scenario set in an intensive care unit (ICU) environment. The scenario featured a critically ill, unconscious, and intubated patient. Students, working in teams, were required to solve a series of challenges, and puzzles related to core nursing skills, such as interpreting electrocardiography, and toxicology cases. These sequential tasks required clinical reasoning and teamwork. Following each session, semi-structured interviews were conducted with voluntary student focus groups, providing qualitative insight into their experiences and overall evaluation of the exercise. These interviews allowed participants to reflect on the learning process and share feedback about the escape room's effectiveness essential knowledge.

Results: Ninety-one students participated in the escape room activity, with 80% managing to “wake” the simulated patient within the allocated time. Student feedback was positive, with a high level of satisfaction and describing the activity as both enjoyable and a refreshing change from conventional exercises. They noted that the escape room format effectively reinforced their understanding of key content areas while revealing both strengths and areas for improvement. Additionally, participants appreciated the group format, as it encouraged peer learning and allowed for role distribution and supportive learning environment.

Conclusions: Educational games like escape rooms are increasingly recognized as engaging and interactive methods for enhancing learning in healthcare education. This activity successfully motivated students to participate in their learning, offering a dynamic approach that allowed them to assess their proficiency in various clinical topics.