

# Abstracts From the 13th World Congress of the World Federation of Critical Care Nurses and 10th Congress of the Serbian Society of Intensive Care, Anesthaesiology and Resuscitation (UINARS), Belgrade, Serbia, 25–28 October 2018

*Keywords: abstracts; conference; critical care nursing; WFCCN*

## COMPETENCYBASED ORIENTATION PROGRAM: IMPACT ON NEW CARDIAC NURSES'

### SELF-CONFIDENCE AND CLINICAL COMPETENCE

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**Aim:** To assess the level of cardiac nurses' competence by identifying areas in which further improvement is needed. **Summary:** Competence is an essential attribute for ensuring high-quality, ethical, and safe nursing care. Competence has been recognized as a core component of professional standards. World Health Organization (WHO) defined competence as "functional adequacy and capacity to integrate knowledge and skills to attitudes and values into specific contextual situations of practice." The self-assessment is advocated as one important means through which competence is evaluated. The Nurse Competence Scale (NCS) has been utilized to assess the current level and nature of competence of the cardiac nurses at Prince Sultan Cardiac Center, Al Qassim, Saudi Arabia. Permission to use NCS was taken; no modification to the scale was made. The method, results, and implications of this study will be discussed in the presentation. **Implications and recommendations for nursing practice:** The most common recommendation and implication of this study will be presented.

## EMOTIONAL INTELLIGENCE: A KEY FOR NURSES' SUCCESS

Laila Abeddin

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**Aim:** The goal of this study is to examine the relationship between nurses' emotional intelligence and nurses' success in their profession. **Summary:** The concept of emotional intelligence has grown in popularity among nurses over the last two decades, generating interest both at a social and a professional level. Emotional intelligence refers to the "ability to identify, express, understand and regulate emotions, either negatively or positively, in one and in others." Emotional intelligence has the potential to impact the quality of patient care and outcomes, decision-making, critical thinking, and overall the well-being of practicing nurses. The Profile of Emotional Competence (PEC) was adopted in this study, to test the nurses' five components of emotional intelligence in term of self-awareness, self-regulation, social skills, empathy, and motivation. The method, results, and implications of this study will be discussed in the presentation. **Implications and recommendations for nursing practice:** Emotional intelligence is essential in nursing practice and nursing leadership.

The implication and recommendations will be addressed.

## NEW METHODS OF PREVENTION OF DECUBITUS LESIONS

**Marina Ahmetbegovic**  
**Bosnia and Herzegovina**

According to the definition of the European Pressure Ulcer Advisory Panel (EPUB), decubitus (decubitus ulcer, pressure ulcer, or bed sores) local damage to skin or subcutaneous tissue was caused by the force of pressure, shear force or friction, or their combination and local ischemia at pressure sites which leads to irreversible tissue damage that may arise after two hours of uninterrupted pressure. According to etiology, decubitus can occur due to pressure, due to venous pathway, arterial insufficiency of neuropathy, or after trauma. The aim of the study is to examine the effectiveness of a new therapeutic procedure in the prevention and treatment of decubitus lesions. **Research Plan:** This prospective randomized study is conducted in the Special Hospital Center for the Heart of Bosnia and Herzegovina Tuzla and lasts for one year. Subjects are patients who have extended lying in the intensive care unit. For grafting surgery, a stay in the intensive care unit and therapy is 24 hours, as well as for vascular surgery, and for cardiac surgery up to 48 hours. The subjects were divided into two groups according to the method of decubitus prevention. All patients who have extended stay and a new lining are being followed throughout the month. During the second month in one group, all other methods of preventing decubital lesions are applied except for new lining, and in the second group it is applied to the other and the new lining. In the examinees, indicators that affect tissue hypoperfusion such as BMI, comorbidity, previous hospitalization, time spent on the respirator and duration of operation on the operating table, incontinence, hypo and hyperthermia during recovery, nutrition, inotropic support, oedema, and the like would be monitored. A special lesion tracking list as well

as documenting a photo was made. Financial perspectives have also been made on the feasibility of the new method. **Results:** Preliminary results point to the extra advantage of the new therapeutic procedure. **Keywords:** decubitus, prevention, treatment.

## THE COMPLEXITY OF MULTICULTURAL CARE IN EUROPEAN INTENSIVE CARE UNITS: THE MICE-ICU PROJECT

**Eva Barkestad**  
**Sweden**

The population in Europe is increasing every year. One of the key factors to population change is migration. Cultural diversity will be one of the most important factors in healthcare area in future Europe. The critically ill patients are even more vulnerable as they many times are unconscious and cannot respond to questions. The hospital staff that are in charge of treatment and their nursing care have difficulties to communicate effectively with the patient to find out specific cultural needs. The MICE intensive care unit (ICU) project was an Erasmus + Project and was funded by the European Commission. The aim of the project was to improve the knowledge, skills, and social competence of ICU nurses when caring for a culturally dissimilar patient in the ICU through offering a course on multicultural nursing. The first stage of the project was a literature review, to find out what was published about cultural knowledge and needs in Slovenian, Czech, and Polish language. The result showed only a few articles on the topic of Cultural Knowledge. Later on, this was confirmed by a questionnaire where more than 500 critical care nurses participated from all Europe. The third stage of the project was to develop an E-learning course free of charge with accreditation for nurses. The last part was to stage an event for nurses where they learned more about Cultural diversity. This presentation will give an update of the project but also specific knowledge and advice of how to care for Critical Ill patients with another cultural background.

## STUDY ON THE STATUS OF TURNOVER INTENTION AND ITS ASSOCIATION WITH NURSING WORK ENVIRONMENT AMONG INTENSIVE CARE UNIT NURSES IN HENAN PROVINCE

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China

**Objective:** To study the present situation of turnover intention of intensive care unit (ICU) nurses in Henan province, and analyse the association between the turnover intention and nursing work environment. **Methods:** A total of 645 ICU nurses in Henan Province were selected and were investigated using general information questionnaire, the Intention of Quitting Scale (IQS) and nursing work environment scale. **Results:** Data of 635 cases were used for statistical analysis; Total score of the IQS was  $15.03 \pm 3.40$ ; Total score of the nursing work environment scale was  $110.52 \pm 23.02$ ; three sub-scales of the nursing work environment that had the lower scores were leadership and management, adequate human resources, and basic guarantee. The influence factors of the turnover intention were education, ICU species, whether teaching, leadership and management, and basic guarantee. **Conclusion:** The turnover intention of ICU nurses in Henan province was at a high level. To reduce turnover intention, not only targeted management according to the different characteristics of ICU nurses, but also the improvement of nursing work environment, especially leadership and management and basic guarantee, should be explored. **Keywords:** ICU nurses, turnover intention, nursing work environment.

## SOCIAL DISTANCES TO ANXIETY AND SCHIZOPHRENIA CASES BY THE EFFECTS OF DEMOGRAPHIC FACTORS

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Turkey

**Introduction:** The human picture of the world is shaped by relatively stable norms, values, and

expectations. When these are disturbed by people with unusual or abnormal behavior, people feel the desire to separate from them; they form social distance towards them. In common language, "social distance" defines the distance one wants to have between oneself and another person in a social situation. The aim of this study is to show the difference of social distance to anxiety and schizophrenia patients and to determine the effective demographic factors on these social distances. **Materials and Methods:** This is a cross-sectional research study with anonymous questionnaires was conducted using a convenience sample of 436 university students. Questionnaire consists of 13 questions about the demographic and the psychological situations of students and their answers to Social Distance Scale (SDS) for two specific scenarios (anxiety and schizophrenia) by 14 items same scale. SDS is 7-point scale ranging from 1 (strongly irritating) to 7 (strongly irritate). The findings about the individual characteristics of the students were evaluated using percentages, means, and standard deviation and min-max values. The data on the research question were evaluated using analysis of correlation, Wilcoxon test, and all findings were taken as significant at  $p < 0.05$ . **Results:** Social distance (SD) is higher to schizophrenia than to anxiety for each considered sub-items and overall. SD to anxiety case is affected by the departments, age, and the numbers of sibling of students. SD to schizophrenia case is affected by the departments, age, and father education of students. In addition, the connections with psychological situations and the feelings of students differ from anxiety to schizophrenia. **Conclusion:** SD is affected by some demographic factors and some connections with psychological situations. SD is higher to schizophrenia case than anxiety case. Also, the feelings of students change from anxiety to schizophrenia. **Keywords:** anxiety, schizophrenia, psychological disorder, social distance.

## COMPARISON OF THE NRS2002 AND THE NUTRIC SCORE IN THE PROGNOSIS PREDICTION OF ONCOLOGIC PATIENTS IN THE INTENSIVE CARE UNIT

**Xiuwan Chen; Haihua Zhu**  
China

**Introduction:** For oncologic patients in the intensive care unit (ICU), nutritional risk assessment proves difficult due to various factors such as the nature of critical illness or treatment-related complications. Both Nutritional Risk Screening–2002 (NRS2002) and Nutrition Risk in Critical Ill (NUTRIC score) are tools designed to assess the nutrition risk developing adverse clinical outcomes that may be improved by aggressive nutrition therapy. Our aim was to compare the value of NRS2002 and NUTRIC score in the prognosis prediction of patients in the oncologic ICU.

**Material and Methods:** The clinical information of 238 oncologic patients admitted to ICU between July and December 2017 was collected and analyzed. Patients were assessed using NRS2002, and NUTRIC score within 48 hours after admission. Descriptive statistics were used to analyse the score and proportions of nutrition risk categories, the receiver operating characteristic (ROC) curves were drawn to compare the value in predicting the prognosis. **Results:** A total of 238 patients (100%) were deemed at nutritional risk by NRS2002 and NUTRIC score. Of these patients, 51 patients (21.4%) were high nutritional risk according to the NUTRIC score. NRS2002 score was  $4.52 \pm 0.82$  versus  $4.19 \pm 0.93$  between death group and survival patients ( $p < 0.001$ ), and the NUTRIC score was  $5.48 \pm 1.47$  versus  $3.00 \pm 0.93$  ( $p < 0.05$ ). The areas under the ROC curves were respectively (0.700, 0.759, 0.584, 0.202, 0.946, 0.343) and (0.873, 0.897, 0.718, 0.306, 0.980, 0.614). **Conclusion:** The state of the nutrition risk of oncologic patients in ICU is not optimistic. Both NRS2002 and NUTRIC score can predict the prognosis of critical ill patients with cancer, and the NUTRIC score is superior to the NRS2002.

## CONSTIPATION IN CRITICALLY ILL PATIENTS, AN EVIDENCE-BASED CLINICAL GUIDELINE FOR MANAGEMENT OF CONSTIPATION IN THE INTENSIVE CARE UNIT

**Mathilde Elsa Christensen; Maria Ingrid Bianca Klette; Britt Sætre Hansen**  
Norway

**Introduction:** Constipation is a common complication amongst critically ill patients. The rate of constipation is reported from 15% to 83%. Basic nursing tasks in a high-tech environment can get low priority and lead to care left undone. If not attended to, constipation may exacerbate an already difficult clinical situation. Constipation increases both morbidity and mortality and is associated with worse functional outcomes in these patients. Management of constipation is therefore of medical and health economic interest and is an area where significant improvement is possible. As critical care nurses, we experienced that the management of constipation was random. We wanted to investigate how critical care nurses and other health-care professionals in the intensive care unit (ICU) could prevent and treat constipation for these patients. **Material and methods:** We completed a review of existing literature. The systematic search was performed by a specialized librarian and was conducted in 22 databases. To provide a methodological strategy for the development of guidelines we used the AGREE II instrument. The fundament of the guideline was formed on the basis of recommendations from the scientific literature and consensus from an interdisciplinary group consisting of anesthesiologist, a gastric surgeon, critical care nurses and an advanced practitioner. **Results:** Evidence-based clinical guidelines and a bowel-protocol were developed. The bowel-protocol is visually made as a flowchart which makes it easy to understand and use. To our knowledge, no evidence-based clinical guidelines on this topic exist. **Conclusion:** These evidence-based clinical guidelines are a useful tool for critical care nurses and physicians and should contribute to improved

quality of bowel care for the critically ill. We hope that a presentation of these guidelines can lead to a higher international focus on the critically ill patients' bowel function.

### NURSING STUDENTS' HEALTHY LIFESTYLE BEHAVIORS: PRELIMINARY OUTCOMES FOR FOLLOW-UP

**Dilek Cingil; Ayşenur Gürel; Gülfidan Başer; Filiz Hisar**  
**Turkey**

**Introduction:** Healthy lifestyle behaviors are important for nursing students to develop their own health as well as to take an active role in health promotion activities in areas where they are working after graduation and to be a collective role model. **Materials and Methods:** This study was carried out as descriptive design to evaluate health promotion behaviors of nursing students. It was conducted on nursing students in the first grade who enrolled in teaching year 2017–2018. In study, it was recruited all of class (123 student) without sampling method but was included that 107 student who had fully filled the sociodemographic questionnaire and Healthy Life Style Behaviour Scale II. The data was collected using students' sociodemographic characteristics form, questions related to some medical and lifestyle behavior characteristics and Healthy Life Style Behaviour Scale II. Healthy Life Style Behaviour Scale II and questions related to some medical characteristics was administered at the beginning of a nursing education.

**Results:** In analysis, the participants' Healthy Life Style Behaviour Scale II total scale score was  $126.5 \pm 17.2$ . The students' Healthy Life Style Behaviour Scale II total scale score was significant differences in self report physical activity point, regular sleeping, medical checking timing, having breakfast. The students' Healthy Life Style Behaviour Scale II total scale score was not significant differences according to gender, family type, mother' and father' education level, mother' employing, income level, place of residence, presence of health problem, count of teeth brushing. **Conclusions:** The students' Healthy Life Style Behaviour Scale II total scale score was

significant differences in self report physical activity point, regular sleeping, medical checking timing, having breakfast. **Keywords:** health lifestyle, nursing students, health behavior.

### NONPHARMACOLOGICAL INTERVENTIONS TO DECREASE THE INCIDENCE OF DELIRIUM IN CRITICALLY ILL PATIENTS

**Isabel Coetzee**  
**South Africa**

The prevalence of delirium in Intensive Care Units (ICU) can be as high as 80%. Hypoactive delirium is very difficult to diagnose and a screening tool should be used to diagnose, it is characterized by decreased cognitive function, inattentive thinking, and fluctuation of consciousness, disorientation, and confusion. Studies shows that patient that experience delirium have high six months mortality and long-term cognitive impairment. The aim of the study was to assess the effect of nonpharmacological interventions on the severity and duration of delirium in ICU patients following cardio-thoracic surgery. The objectives of the study were to assess the prevalence of delirium during pretest scoring with the ICDSC tool (08:00) on postoperative cardio-thoracic patients. The second objective was to assess the effect of implementation of nonpharmacological interventions versus standard nursing care on the severity and duration of delirium in (hours) in ICU patients following cardio-thoracic surgery. The hypothesis is that the implementation of non-pharmacological interventions would reduce the severity and duration of delirium amongst intensive care participants in the intervention group compared to participants in the control group. The ICDSC checklist was utilized to assess if non-pharmacological interventions have an effect on the duration and severity of delirium and hypoactive delirium under postoperative cardio-thoracic patients. A *p*-value of 0, 02 indicated a significant shorter duration from a state of delirium to no delirium in the intervention group in relation to the control group. This supports the hypothesis that the implementation of non-pharmacological interventions decreased the severity and duration of delirium in ICU patients following cardio-thoracic surgery.

## EYE CARE IN THE INTENSIVE CARE UNIT: NURSES' KNOWLEDGE, ATTITUDES, AND PRACTICES

Dušanka Cvijanović

Serbia

**Introduction:** Eye care is one of the basic nursing procedures that are done for a patient in the intensive care unit (ICU), but because of the focus on handling life-threatening states this procedure is often ignored. The situation is made harder by not having a unified guideline for evidence-based eye care. **Aim:** The aim of this study is to assess the knowledge, attitudes, and practices of intensive care nurses about the eye care of patients on mechanical ventilation. **Material and methods:** This study was conducted as observational, analytical cross-sectional study on nurses ( $n = 95$ ) working in ICUs. Instruments used in the study included the Eye care clinical competence in ICU inventory (ECCI). The questionnaire showed good reliability, Cronbach alpha for the entire questionnaire was (0.83). For statistical analysis of the data descriptive and inferential statistics were used, and statistical significance was determined at  $p < 0.05$ . **Results:** The average scores on the tests on knowledge attitudes and practice show that there is a need to improve the quality of the service provided to the patients on mechanical ventilation. There was a strong positive correlation between attitudes and practices of eye care for patients on mechanical ventilation, while more positive attitudes are followed by better practices. **Conclusion:** The results of this study indicate that nurses in general regard eye care as important, but they are not aware of precautionary measures and procedures that they need to follow to prevent and treat damage to the surface of the eye of critically ill or injured patients.

## RISK FACTORS FOR THE ACQUISITION OF POSTOPERATIVE DELIRIUM IN CARDIO-SURGICAL OPERATIONS

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**Introduction:** Postoperative delirium in the Intensive Care Unit (ICU) is a common complication following cardiac surgery and is associated with increased morbidity and mortality.

Risk factors can be divided into three groups: factors related to the patient's prehospital condition, factors related to the underlying disease, and iatrogenic factors. **Objective:** To determine the total number of patients with postoperative delirium in the ICU of the Center for Cardiac Surgery of the Clinical Center of Montenegro in the period from 01. 01. 2014 to 31. 12. 2014. Determine the reasons for the occurrence of postoperative delirium in cardiac surgery patients at the Clinical Center of Montenegro. **Methods:** Retrospective study, descriptive, and clinical. The method of work in the research was a retrospective analysis of the history of the disease and the list of intensive care of patients undergoing surgery. **Results:** In the period from 01. 01. 2014g. until 31 December 2014g. 350 patients were treated at the Center for Cardiac Surgery. Postoperative delirium appeared in 52 patients (examined group), and 298 patients had no postoperative delirium (control group). Median age in the group of patients who did not have delirium was 63 years (range 17–85), and in the group of patients with delirium it was 65.50 (range 47–81). Patients with delirium were statistically significantly older ( $U = 6,338.5, p = 0.036$ ). Delirium was 15.8% of patients and 14.5% of men. The difference in the frequency of delirium by gender is not statistically significant ( $\chi^2 = 0,090; p = 0.765$ ). The average length of hospitalization in relation to the occurrence of postoperative delirium; The average length of hospitalization in the Intensive Therapy Unit in patients who have no delirium is  $3.89 \pm 2.15$  days, and in patients with delirium it is  $5.71 \pm 4.34$ . Statistically significantly longer hospitalization was preceded by the appearance of delirium ( $U = 5,415.0; p < 0.001$ ). **Conclusion:** The study showed that there was no significant statistical difference in the occurrence of postoperative delirium in relation to sex. Longer duration of extracorporeal circulation is a predictor of the occurrence of postoperative delirium after cardiac surgery. We concluded that patients who had delirium after a cardiac surgery had a prolonged hospitalization in ICU. Statistically significantly longer hospitalization of the ICU was preceded by the appearance of delirium.

## **INFLUENCE OF PREOPERATIVE PATIENT ANXIETY ON INTRAOPERATIVE AND POSTOPERATIVE OUTCOME**

**Gordana Dragosev**

**Serbia**

Preoperative anxiety is described as an unpleasant state of discomfort or tension that occurs under the influence of the patient's concern about his general health, uncertainty about the future, the type of surgery and anesthesia that is being applied, postoperative discomfort and pain, physical disability, loss of independence, and fear of death. The preoperative anxiety rate in adults ranges from 11% to 80%, depending on the assessment method. Most authors suggest that high pre-operative anxiety is associated with a psychologically and physiologically unfavorable outcome. In children, preoperative anxiety leads to postoperative negative psychological effects, including nightmares, anxiety development, nutritional problems, and increased fear of a physician. In adults, preoperative anxiety is correlated with increased postoperative pain, an increase in the need for analgesics in the postoperative period and an extension of recovery and hospital stay. By identifying the presence of anxiety in the preoperative period in patients preparing for surgical intervention and by considering the factors responsible for preoperative anxiety, psychological support for patients in the preoperative period can be improved, and thus reduce the anxiety, pain, and requirements for analgesics in the postoperative period in the intensive care unit. The literature classifies five dimensions of surgical experience that can provoke anxiety in patients: a) physical injuries that involve pain, mutilation or even death; b) separation from the family in which the patient has trust; c) fear of the unknown; d) uncertainty about the prescribed behavior in the hospital; e) loss of control, autonomy, and competence. More recently, published studies focus most attention on three areas in which the psychological impact is present: anxiety during anesthesia induction, agitation in the early postoperative period, and the development of

adverse postoperative changes in behavior. On the basis of the review of published articles from 1990 to 2018, preoperative anxiety is identified as the main factor in the development of negative postoperative effects that lead to the extension of the patient's stay in the hospital. In Serbia, a cross section study was conducted in 2018, which enabled the analysis of the association of preoperative anxiety in relation to the scope and content of information about anesthesia and surgical intervention that patients have. The research was conducted at the Clinical Center Nis in 100 patients during routine preoperative preparation of patients one day before the surgical procedure using an observer instrument of Amsterdam Preoperative Anxiety Scales and Information Scale (APAIS). During the research, the results of the cause and degree of anxiety for each patient were transmitted by nurses from preoperative preparation to nurse anesthetists and intensive care unit (ICU) nurses with the aim of directing more attention and time to patients with high anxiety levels in the intraoperative and postoperative period. The above study confirmed that preoperative anxiety is in correlation with high postoperative anxiety and increased postoperative pain, and that there is a strong negative correlation between preoperative anxiety, the scope and the content of information about anesthesia and surgical intervention that patients receive. The conclusion of the study suggests that a good organization of the implementation of preoperative preparation of patients in healthcare facilities can significantly affect the performance of preventing anxiety in the future consequential occurrence of postoperative problems and complications in the intensive care unit.

## **MULTIMODAL MONITORING IN THE INTENSIVE CARE UNIT**

**Gordana Dragosev; Jelena Milovanovic;**

**Maletic Mirjana**

**Serbia**

Continuous monitoring is a valuable tool that helps provide additional information to the

medical and nursing staff about the physiologic condition of the patient. Using this information, the clinical staff can better evaluate a patient's condition and make appropriate treatment decisions and is used to treat a wide range of patient conditions. Depending on configuration, central station monitors include modules to measure various parameters, including ECG, respiratory rate, non-invasive blood pressure (NIBP) and invasive blood pressure (IBP), body temperature, SpO<sub>2</sub>, SvO<sub>2</sub>, cardiac output, ETCO<sub>2</sub>, intracranial pressure, and airway gas concentrations. They include computing capabilities and additional displays to observe trend information; some also include full-disclosure capabilities. They do not replace bedside monitors. Central monitors may tempt hospital personnel to pay more attention to the equipment than to the patient connected to it. Even monitors that are functioning reliably cannot substitute for frequent direct observation. The paper will show the central monitoring system with accompanying continuous monitoring in addition to the patient in Central Intensive Care Unit at the Clinic for anesthesia and intensive therapy of Clinical Center Niš.

### **MULTIMODAL MONITORING IN THE INTENSIVE CARE UNIT**

**Gordana Dragosev; Sasa Ristic; Mirela Stefanovic; Biljana Savic; Jelena Milovanovic; Gutovic Miljana; Sofija Kurtovic**  
**Serbia**

Taking into consideration the complexity of state in which the intensive care patients are, they need to be constantly supervised by medical staff as well as keeping track of their vital functions. Monitoring of the patient in intensive care unit is a part that couldn't be left out. Monitoring is keeping track of the vital and other functions of patient's organism, but in the same time it is logical thinking about general patient's state and his further treatment. Today, as the technology and science progressed, we have the noninvasive monitoring (keeping track of TA, breathing, pulse oximetry, temperature, EKG, etc.) as well as the invasive monitoring which

is represented more now. So, the monitoring of the patient could be more accurate if all basic and additional monitors are connected to the central monitoring unit on a nurse's counter which enables us continuous monitoring all of patients from one spot at the same time, which also enables the right reaction at the right time so any unfortunate situations, can be avoided. Every patient admitted in Clinic for anesthesia and intensive therapy, Clinical centre of Niš, immediately is connected to noninvasive monitoring. From noninvasive methods in routine it's done the following: Pulse, analysis of continuous EKG, Respiration, Oxygen saturation, Artery pressure, Temperature, CO<sub>2</sub> at the end of exhale -EtCO<sub>2</sub> (CapnoStream monitor). In addition to standard noninvasive monitoring it is still used: Masimo hemodynamic monitoring (brain function of one or both brain hemispheres, regional oximetry, and capnography); BIS hemodynamic monitoring; Invos hemodynamic monitoring; Monitoring of neuromuscular block. From invasive monitoring in use are: Invasive measurement of artery pressure; central venous pressure (CVP) measurements; Monitoring with Swan-Ganz; Vigileo hemodynamic monitoring; Monitoring through PreSep Oximetry catheter; Monitoring through FloTrack sensors; Lidco hemodynamic monitoring; Cardio Q hemodynamic monitoring; During the drainage, Cell Saver is used to accurately measure lost blood and return the same blood after processing. In our everyday work the laboratory tests such as RTG and UZ diagnostic help us in getting the full picture of the patient's state. Clinic for anesthesia and intensive therapy have: Gas analyser; RTG machine; UZ machine; Hemodialysis machine; Machine for plasmapheresis. **Conclusion:** Hemodynamic monitoring of patients in intensive care unit is crucial for further developing and for the outcome of patient's state, as well as for diagnostics. Educated team of nurses and physicians can anticipate many of complications by monitoring hemodynamic parameters and knowing contemporary principals of work. **Key words:** invasive and non-invasive monitoring, patient, nurse.



## **CARDIOPULMONARY CEREBRAL RESUSCITATION —DEMONSTRATORS OF CLINICAL SKILLS ON TRAINER DOLLS FOR EDUCATION**

**Gordana Dragosev; Sasa Ristic; Mirela Stefanovic; Biljana Savic; Mirjana Maletic; Jelena Milovanovic; Gutovic Miljana; Sofija Kurtovic; Daliborka Dimitric  
Serbia**

**Introduction:** Medical simulation is an artificial and faithful representation of real clinical situations using static and interactive manikin simulators, standardized patients/actors, task trainers, screen-based (computer) simulations and “serious” gaming of real clinical situations. It is a powerful learning tool that helps students and healthcare professionals achieve higher levels of competence and safer care. It can be used both for individual learning and for training in a multidisciplinary team. Simulation based on medical education aims to provide an optimum relationship between education (acquiring knowledge, skills, and attitudes) of health workers from one, and security of patients (respecting their ethical and legal rights) on the other side. In addition, medical simulations have the potential to use scenarios that rarely occur in practice, such as urgent, critical, life-threatening situations. Simulation-based learning enables the transition from a traditional-oriented learning approach to a more integrative degree of cognitive use (observation, thinking, memory, learning), psychomotor (practical, manual skills and techniques, performing risky and complex procedures, managing new technologies), expressive (independent decisions, professional attitudes), and interpersonal (interviews, communication, teamwork) functions. **Aim:** Our Center for Medical Simulation at the Clinic for anesthesia and intensive therapy in Clinical Center Nis consists of a storage space for equipment, introductory lectures hall/training center with computer and audio-video equipment and several separate phantom points. In the introductory lecture hall, lecturers with participants are theoretically processed by thematic units intended for simulation, providing or recommending literature in an electronic or

printed version. In a separate part of training center, static phantoms/trainer dolls for basic life support (BLS) and advance life support (ALS) measurements of CPR were placed in the separate part of the hall, a trainer doll for parenteral drug administration (intravenous, intramuscular, subcutaneous), equipment for oxygen therapy, AED (automatic external defibrillator) with a simulation device, and in one part an anesthetic device and respirator for artificial ventilation are placed, where, with the appropriate preparation of phantoms and equipment, participants get basic knowledge from general anesthesia. A special checkpoint is a training site for performing ET intubation on the phantom, placing the oropharyngeal and nasopharyngeal tube, laryngeal mask, and a combined tube. **Conclusion:** Medical simulation is one of the biggest and most important innovations of the past 15 years in medical education. Our achievements in education through simulation, with limited resources but with enthusiasm, creativity and good ideas, have so far achieved satisfactory results. Our further plans are to improve medical simulation with the acquisition of more advanced equipment in an appropriate quantity and connect with developed centers for medical simulation in Europe and worldwide.

## **THE STOP SEPSIS CAMPAIGN IN SERBIA**

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Serbia**

Contemporary nursing includes health promotion, disease prevention, care for critical ill persons, disabled and dying persons, people with special needs, support for patients, promotion of safe environment, research, participation in the creation of social policy, collaboration with patients' associations, health system management and education system. As a result of professional knowledge and experience regarding sepsis, Global Action “World day against sepsis” has been launched by the Global Sepsis Alliance (GSA) with the goal of encouraging thinking, raising the level of

general and professional awareness and increasing knowledge of physician, nurses, and other health workers and associates on the extent and consequences of sepsis. In cooperation with the World Federation of Critical Care Nurses (WFCCN), the Association of Nurses of Intensive Care, Anesthesia and Reanimation of Serbia—UINARS, as its full member, has joined the Global Alliance in the fight against sepsis since 2013. Through multidisciplinary team work, UINARS provided its support by holding expert Conferences on the topic “Sepsis—Prevent it. Recognise it. Treat it—Beat it!” in over 20 representative healthcare institutions across Serbia, with support of around 3,000 nurses and technicians of all profiles, high institutional officials and media campaign promotion. Every next year until 2017th, the Association continued with this kind of Campaign support and in 2014. UINARS team also prepared a Manual “Sepsis—Prevent it. Recognise it. Treat it—Beat it!”—Guidelines for nurses and health technicians which was printed in a larger circulation on Serbian language and distributed as professional promotional material during professional conferences. In order to satisfy the basic requirement of methodology, objectivity, systematics, and reliability in the preparation of this manual, the UINARS team used different methods to explore the topic. For theoretical consideration of the topic of sepsis, was analyzed domestic and foreign professional literature, books, scientific papers, journal articles, journals with expert conferences, states and statistical publications, theses and dissertations, internet database, and the results of the study topics were presented in the manual. The support to UINARS and the Global Campaign in 2013 was also provided by other Serbian nursing associations. With this campaign of support, the UINARS activities were the most numerous on the World map of the fight against Sepsis in 2013. Also, the Republic Commission for the development and implementation of the Good Clinical Practice Guide of the Ministry of health of Republic of Serbia published in 2013 the “National guide to good clinical practice for the prevention, diagnosis and treatment of sepsis, severe sepsis and

septic shock,” which is intended for physicians of primary and secondary healthcare that should raise suspicion of illness, apply initial therapy for sepsis and direct patients to an institution with an adequate intensive care unit (ICU). Most of the recommendations are written in the form of guidelines for physicians in ICU that treat patients with sepsis, severe sepsis, and septic shock. Sepsis is more common cause of death from malignant diseases of the prostate, breast cancer, and AIDS together. It is known that the number of sepsis sufferers may be reduced, but it is recognized that the main obstacle to success lies in the fact that sepsis is largely unknown to the public and many professionals are poorly known. Therefore, it is necessary to continuously acquire the knowledge of physicians, nurses, and other health professionals and raising the level of general and professional awareness about the extent and consequences of Sepsis. In the years that come to us, UINARS will continue its support to the campaign for the fight against sepsis.

#### **STUDY OF INTENSIVE CARE UNIT NURSES' PERCEPTION OF WORK ENVIRONMENT IN INTENSIVE CARE UNIT AND ITS INFLUENCING FACTORS**

**Aiping Du; Huan Liu; Yu Xu; Yongming Tian  
China**

**Introduction:** The aim is to investigate the status of intensive care unit (ICU) nurse's perception of work environment perceived by ICU nurses and analyse their influencing factors so as to provide reference for improving nurses' working environment. **Materials and Methods:** A total of 388 nurses from eight different ICUs in a class three grade A in Sichuan province were surveyed by the general information questionnaire and the practice environment scale of the nursing work index (PES-NWI). Convenience sampling was adopted and all data were computer-analyzed using an SPSS for windows 17.0 program. **Results:** The total score of PES-NWI was (97.38±13.89), the average score of each item was (3.14±0.44), the scores of each dimension from high to low in order were nursing foundations for quality of care, nurse

manager ability, leadership and support of nurses, collegial nurse-physician relations, nurse participation in hospital affairs, and staffing and resource adequacy. Multiple linear regressions showed that friend support status and health status are the influencing factors affecting the work environment perceived by ICU nurses ( $p < 0.05$ ). **Conclusion:** The level of ICU nurses' perception of work environment was relatively low, had a low level of perception of the nursing work environment, nursing managers should take active intervention strategies against influencing factors to improve the nursing working environment and ensure the quality of nursing care.

## **INTRAHOSPITAL INFECTIONS IN INTENSIVE CARE UNIT**

**Dubravac Elmedin**  
**Bosnia and Herzegovina**

During my lengthy career as a Registered Nurse I have encounter many patient cases that acquired hospital infections while being hospitalized. In this paper I will be presenting common causes of intrahospital infections among patients in critical care setting. Also, the best practices in prevention strategies worldwide. We will also present mortality rates among intensive care unit (ICU) patients in industrial versus developing countries. Additionally, it is important to discuss education of medical and nonmedical staff in infection prevention and what strategies are best to decrease rates of these infections among patient population. In conclusion we can say that it is very important to discuss this matter among all medical and health-care providers, because this way we can decrease unnecessary prolongation of hospitalization and possible complications. **Keywords:** intrahospital infections, prevention, education.

**INTENSIVE CARE IN THE HYPERBARIC SYSTEM**  
**Mario Dugonjić; Emanuela Marcucci**  
**Croatia**

It would be a mistake to speak of hyperbaric medicine as a new branch of medical science, although in the last 30 years we have been

following its evolution stimulated by numerous quality evidence-based researches. Accumulation of knowledge included on a list of indications some diseases and conditions that sometimes require intensive care and anesthesia. There are several indications for hyperbaric oxygen therapy that may require intensive care treatment such as severe forms of decompression disease, carbon monoxide poisoning, gas gangrene, brain edema, and burns. Observing hyperbaric oxygen therapy through the prism of safety and quality of intensive care clearly denotes dangers, both for the staff within the system as well as for the patient themselves. There are no obstacles to performing intensive care and anesthesia within the hyperbaric system as far as all the safety aspects of the hyperbaric system are carried out. In order to avoid potential hazards, it is important to develop, implement, and evaluate the equipment, personnel and patient safety check systems. There are three basic groups in which we can classify potential unwanted situations. The first group refers to the failure of the hyperbaric device (hyperbaric chamber) and the associated medical equipment. Failure of hyperbaric chamber can be extremely dangerous, sometimes deadly, but it is rare and always recognizable much earlier. The rest of the risk lies in the noncompatibility of medical equipment with elevated ambient pressure and elevated partial pressure of gases inside the hyperbaric system. In the second group we classify unwanted physical and psychological events in the interaction of hyperbaric system-personnel, or hyperbaric system-patient. Annual systematic staff reviews and psychological testing are a guarantee of safety, as well as a thorough physical and preanesthetic examination of the patient. The third group belongs to the safety and quality of intensive care. Biochemical and physical changes that a hyperbaric system has on a human body can result in faster drug degradation, changes in lung ventilation and changes in micro- and macrocirculation. Most of the changes caused by elevated ambient pressure and hyperoxia are well-researched and documented, so good training of personnel is the key to safety and quality.

## EUROPEAN PERSPECTIVES OF NURSE SPECIALISTS

**Adriano Friganovic**

**Croatia**

The European Specialist Nurses Organisations (ESNO) is a nonprofit organization, which promotes and contributes to the health and well-being of Europeans by facilitating and enabling the political voice of specialist nurses. Through collaboration with key stakeholders, the professional status and evidence-based practice of nursing specialities are strengthened. ESNO aims to secure the recognition of specialist nursing in the EU and greater Europe. The objectives, systems, schemes, concepts, and education methods of specialist nurses vary considerably among member states of the European Union. This variety, resulting from mainly historical reasons, has often led to an inefficient and ineffective use of human and financial resources and to a lack of integration in national education and training systems. In turn, this has contributed to the inefficient professional understanding and engagement in health workforce systems. The absence of regulation has not only affected the availability of a sufficient number of qualified specialist nurses in EU countries, but it has also had a negative impact on the provision of advanced nursing personnel with specialities in key positions in the health environment. Furthermore, the considerable variety hampers the mobility of specialist nurses within the countries of the EU. ESNO is responsible or cooperates with institutes on publication on health-related publication related to the nurse's profession such as Guidelines, E-book, Newsletter, and Annual Reports. **Keywords:** Europe, nursing, nursing specialist, perspectives.

### RATIONING NURSING CARE IN CROATIA

**Adriano Friganovic**

**Croatia**

Nursing care rationing is a significant threat to patient safety and quality of care. Even though there is increasing number of studies in international journals regarding rationing nursing care over the last decade, in the countries of

central Europe there is a lack of basic information on that issue. As this is a relatively new area of research in nursing, there is no published research on nursing care rationing from central European clinical environment and there is no research in Croatia at all. Despite evidence that increasing nurse staffing levels is a cost-effective intervention, the current political and economic environment of European countries may make it difficult to achieve. Financial constraints on healthcare and nursing have led to serious shortage of nurses in some countries, while in others healthcare austerity measures and/or moratoria on staffing are preventing health service managers from hiring nurses even where sufficient candidates are available. When nurses cannot provide all the necessary services, they have to prioritize. Related to the lack of scientific evidence in this field study has been started as a part of bigger European Union project. In this lecture we will present study design and preliminary results of this study. **Keywords:** rationing, nursing care, Croatia.

### PRESSURE INJURY PREVENTION

**Paul Fulbrook**

**Australia**

Pressure injury (PI) risk assessment is a crucial aspect in determining the relative risk of patients and the need for preventative intervention. In the intensive care setting there are few risk assessment scales (RAS) that have been developed specifically for use with critically ill patients. The cost of caring for a patient with PI is high, and in many countries financial penalties are now incurred for Stage III and IV injuries. Recently, a new PI RAS has been designed specifically for use with critically ill patients: the COMHON Index, which was tested in Australia. This presentation will describe the COMHON Index, and summarize the research study to assess its psychometric properties, and will provide an overview of an international three-phase study that is being planned in conjunction with WFCCN to test the predictive validity of the COMHON Index when

combined with preventative interventions that are matched to the patient's risk level.

## **RESULTS OF THE FIFTH WORLD CRITICAL CARE NURSING ASSOCIATION SURVEY**

**Paul Fulbrook; Ged Williams; Ruth Kleinpell; Laura Alberto**

**Australia; UAE; USA; Argentina**

**Aim:** To examine the activities and concerns of critical care nurses and professional critical care nursing organizations worldwide and to identify expectations held of nursing leaders and policy makers to help address the concerns.

**Background:** This study is the fifth worldwide review of its type. Previous surveys were undertaken in 2001, 2005, 2009, and 2013. **Methods:** The 5th WFCCN international survey of critical care nursing organizations was emailed to potential participants in 104 countries with critical care nursing organizations or known critical care nursing leaders. Responses from 82 countries were analyzed by geographical region and income level. **Results:** Most countries had a national critical care nursing association (68%). Working conditions was considered to be the most important issue followed by teamwork, staffing levels, formal practice guidelines, wages, and access to quality education programs. High-wealth countries scored lower than middle and lower wealth groups. **Conclusions:** Important issues continue to challenge critical care nursing and some change in emphasis every four years as new developments, priorities, clinical issues and other global events and influences impact critical care nursing worldwide.

## **WRITING FOR PUBLICATION**

**Paul Fulbrook**

**Australia**

Many people who have something really important to contribute to the nursing profession fail to get their work published simply because it is presented poorly or has not adhered to the particular journal's guidelines for authors. Therefore, one of the most critical aspects of preparing a journal article for submission is to ensure that

it is presented in the best possible way. This presentation will examine the importance of ensuring quality aspects of articles for submission to a peer-reviewed journal: authorship; getting the structure right: proof reading, reviewing, revising text; checking the author guidelines; ethical issues around publication (accurate data, appropriate claims, anonymity of participants, declaration of interest); issues of copyright and permissions; reference style; using critical friends; writing a cover letter.

## **SIMULATION: A STRATEGY TO BUILD COMPETENCE AND CONFIDENCE IN CRITICAL CARE NURSES**

**Sandra Goldsworthy**

**Canada**

Simulation as a teaching/learning strategy has been demonstrated to be an effective strategy in building confidence and competence among critical care nurses. Simulation provides an opportunity to assist new nurses in transitioning into critical care and is a strategy for ongoing professional development for experienced intensive care unit (ICU) nurses. In this presentation an innovative three-country research project (Canada, Sweden, and Australia) will be described that explores the use of virtual critical care scenarios in building competence in critical care nurses.

## **CRITICAL CARE NURSE WORK ENVIRONMENTS: HOW URGENT IS THIS ISSUE?**

**Sandra Goldsworthy; Nicola Witton**

**Canada and UK**

The urgency of examining nurse work environment factors has accelerated in recent years due to the nursing shortage and concerns with retaining and stabilizing the critical care nursing workforce. With cutbacks, nursing shortages, increasing nurse/patient ratios and changing patient care delivery models, healthy workplaces have gained traction as a variable that influences whether a nurse stays or leaves the unit, the organization, or even the nursing profession. In this presentation results of Canadian and UK critical care nurse work environment recent studies will provide the backdrop for participants to actively participate and "have their

say” as they rate their own intensive care unit (ICU) work environments and discuss potential strategies to promote healthy work environments for all critical care nurses.

### HEALTH LITERACY OF HOSPITAL PATIENTS AT UNIVERSITY HOSPITAL CENTER OSIJEK, OSIJEK, CROATIA

**Martina Ivanišić; Gajnok Šarika**  
**Croatia**

**Introduction:** There are various instruments to test health literacy, most of which are applicable for speakers of English language. There is no health literacy test in Croatian language that has undergone complete linguistic validation procedure. The aim of this study was to develop a linguistically validated Croatian version of NVS test of health literacy, and to apply it for testing health literacy among hospital patients at the University Hospital Center Osijek. **Materials and Methods:** The Croatian version of the NVS instrument (NVS-HR) is based on the NVS-UK version, which adapted the NVS-US for the European context. NVS-HR was used to test health literacy of 100 hospital patients at the University Hospital Centre Osijek. **Results:** Data analysis showed that most study patients were women, had secondary level education, and were over 65 years of age. A total of 42% of participants had adequate health literacy when measured by NVS-HR test. A positive correlation was observed between health literacy and educational level, and low health literacy was found in the elderly. Median NVS-HR score was 3.0; testing duration was 4 minutes. NVS-HR health literacy test is easy to use in everyday clinical practice due to short testing duration and simple use. **Conclusions:** 98% of the participants considered this type of testing could help medical doctors and medical nurses in their communication with patients. Health literacy testing as part of nursing care either while keeping nursing or medical records, would facilitate communication with patients and thus enable each patient to participate on more equal terms in their own treatment and care for their own health.

### CREW RESOURCE MANAGEMENT—CAN A NURSE BE A COPILOT?

**Sanja Ivankovic**  
**Serbia**

Crew resource management or cockpit resource management (CRM) is a set of training procedures used in environments where human error can cause fatal consequences. It is used to improve security of the aircraft and focuses on interpersonal communication, leadership and decision-making in the cockpit. Today, CRM is applicable in all fields where critical decisions are being made. The purpose of this paper is to investigate application of CRM for operating room staff and all emergency services. Author will present systematic review of published studies about teamwork training, using CRM methods, in the healthcare system. These studies present methods and techniques on how the teamwork can be valued and measured, as well as, efficiency of training which actively joins all members of the healthcare team (briefings, checklists and communication techniques that can foster an environment of mutual respect). New digital technologies, such as “black boxes,” for recording and archiving all data related to operating procedures and working environment including screening and monitoring, which is followed by complete analysis of all collected data, will be also presented. One of the many conclusions is that excellent individuals, although highly skilled in their discipline, may not perform well in teams and therefore cannot be useful team members, even though they are often hierarchically set as leaders. Therefore, the training by CRM methodology would enable the acquisition of important communication skills of these individuals and, also, encourage other team members to communicate among each other using non-conflict tools, which, consequently, can increase the patient safety level.

### WHO SHOULD BE AN INTENSIVIST?

**Radmilo Jankovic**  
**Serbia**

The challenge and complexity of pathophysiological processes in diagnosis and therapy

management among patients in the intensive care unit (ICU) remain leading motives for doctors to deal with the most difficult patients. In order to give their best to minimize and preclude further tissue injury, intensivists must be competent to solve not only a broad spectrum of conditions common among critically ill patients, but also to be familiar with the technical procedures and devices used in everyday intensive care setting. Beside medical knowledge, multidisciplinary approach to the management of critically ill patient request from intensivists the ability of leadership, patient triage based on admission and discharge criteria and collaboration with other ICU team members. Intensivists struggle with complex pathophysiological processes, using all available diagnostic and therapeutic options. The goal of these healthcare professionals is never to prevent death at any cost, but to deliver appropriate care and make a management plan, and to maximize the quality of life of patients. They made identification of interventions that could be only provided in the ICU environment, with available trained personnel to care for the patient (including experienced nurses, respiratory therapists, pharmacists and other disease specific experts). Intensivists can be anesthesiologists, internists or internal medicine sub-specialists (most often pulmonologists), emergency medicine physicians, pediatricians (including neonatologists), or surgeons who have completed a fellowship in critical care medicine.

### **THE CAUSES AND NURSING MEASURES FOR THE RELATED STRESS INJURY OF NASOGASTRIC INTUBATION TUBE IN INTENSIVE CARE UNIT PATIENTS**

**Wenwen Jing**  
**China**

**Introduction:** To discuss the causes of the related stress injury of nasogastric intubation (NG) tract in intensive care unit (ICU) patients, and propose corresponding nursing measures.

**Materials and Methods:** 76 cases of gastric patients who were admitted to ICU during the period of December 2017 to January 2018

were collected and analyzed the causes of nasal pressure injury, and put forward the corresponding nursing measures. **Results:** 15 cases (19.7%) of the patients suffered from nasal pressure injury, including seven cases (9.2%) in early stage, three cases (3.9%) in second stage of stress injuries, and five cases (6.6%) of deep tissue stress injuries. The main causes of nasal stress injury were eight cases (53.3%) of inappropriate fixing way, six cases (40%) of local humidity, and one case (6.7%) of placing NG tube in the same nasal cavity. **Conclusion:** ICU patients with indwelling NG tube are easy to suffer from nasal pressure injuries; therefore, appropriate nursing procedures should be taken to avoid it.

### **BARRIERS AND STRATEGIES TO PATIENT AND FAMILY ENGAGEMENT IN THE INTENSIVE CARE UNIT**

**Ruth Kleinpell**  
**USA**

Patient and family engagement plays an important role in the intensive care unit (ICU), however the degree to which care practices are being implemented globally is not known. To provide insights for ICU clinicians and educators, a task force of the World Federation of Societies of Intensive and Critical Care Medicine (WFSICCM) conducted a cross-sectional survey. A total of 345 responses were received from 40 countries. Varying practices with respect to patient and family engagement were reported. Majority ( $n = 109$ , 61.2%) provided written materials on the ICU to family members. Just over half ( $n = 184$ , 53.8%) of respondents identified that structured patient and family care conferences were held to review goals of care. Practices such as open visitation were reported by 39.6% ( $n = 136$ ), and family presence during resuscitation were reported to be fully (12%,  $n = 41$ ) or somewhat adopted (33%,  $n = 113$ ) by less than half of respondents. The use of patient and family ICU diaries, music or pet therapy, or the use of a patient and family advisory group were reported by less than half of respondents. A number of barriers were

reported including cultural norms, staff resistance, and lack of space with multi-bedded rooms or open ICUs that impede widespread family presence, perceived workflow interruption, clinicians being uncomfortable with family being present, and literacy barriers. Strategies that were identified included piloting initiatives to promote staff comfort and acceptance, providing literature to staff to showcase the benefit and value of family engagement, and assessing patient and family satisfaction and feedback.

### **PATIENT AND FAMILY CARE IN THE INTENSIVE CARE UNIT: RESULTS OF A COLLABORATIVE OF 62 INTENSIVE CARE UNITS**

**Ruth Kleinpell**

**USA**

It is well accepted that healthcare has evolved away from a “disease-centered model” to a “patient-centered model” of care, where patients and families are active participants in their own care. However, implementing patient and family-centered care in the intensive care unit (ICU) can be challenging. As part of an improvement program, a 10-month national collaborative was launched to help hospitals implement patient- and family-centered care engagement initiatives. Guided by a nine-member patient and family advisory group, 63 adult and pediatric ICU teams implemented a variety of patient and family-centered engagement initiatives including open visitation; integrating families on rounds; establishing a patient and family advisory committee; holding a family care conference to determine goals of care; using patient and family diaries; implementing music or pet therapy, among others. Monthly coaching calls and quarterly webinars assisted the teams through the phases of planning and implementation. A monthly newsletter was provided to teams with collaborative related updates. Pre- and postimplementation data was collected from 3,999 clinicians and 2,530 family members. Family members reported an overall increase in family satisfaction, increased frequency of communication, and increased satisfaction with decision-making.

Clinicians reported increased opportunities for families to participate as members of the care team. A national collaborative format proved to be a useful way to assist ICU teams to design and implement a patient- and family-engagement initiative.

### **THE EXPERIENCES AND SATISFACTION OF FAMILY MEMBERS OF ADULT PATIENTS IN INTENSIVE CARE UNITS**

**Burcu Küççük; Akin Belgin; Alime Selçuk Tosun Turkey**

**Introduction:** Insight into the experiences and satisfaction of family members with a critically ill relative in Intensive Care Units (ICUs) is necessary in providing appropriate care for both family members and the patient. Knowledge in this area will support critical care nurses to improve the nursing care for the critically ill persons and their families. The aim was to describe the families’ experiences and satisfaction with the care of critically ill patients and needs of families in ICUs. **Materials and Methods:** The study design was descriptive. The sample was 158 relatives of the patients who were cared for in four ICU in a government hospital. After approval was received from the institutional review board, this study was conducted in total 36-bed medical surgical ICUs. The data were collected with a questionnaire by researcher with face-to-face interview in the waiting room of ICU. Descriptive statistics and  $\chi^2$  were used for statistical analyses. **Results:** The family members had a high level of satisfaction (78.5%) regarding of care in ICU. They were satisfied with information policy about patient’s situation and also visiting hours. But only 47.5% of the families were satisfied for the information given to them. They were especially unsatisfied for waiting room for families and felt to be uncomfortable. **Conclusions:** The results highlight the family members’ need for more understandable information and the need to improve the environment in the waiting rooms for family members. **Keywords:** ICU, critical care patients, family members, experiences, satisfaction.



## PEACEFUL END OF LIFE THEORY FOR THE CARE OF THE CHILDREN PATIENT AT THE TERMINAL PERIOD

Sibel Küçük; Dilek Uludasdemir; Perver Mustu Turkey

It is important that as a professional occupation, nursing should use theories as guidance in practice. The use of theory and guidance increases the quality of the profession by improving the informational plethora of the nurses. Nursing models have emerged mostly on the basis of adult patient care. Indeed, in 1998, Ruland and Moore's peaceful end of life care theory has been developed as a result of standardization of care given to adult oncology patients. Ruland and Moore have defined five major outcome standards that contribute to a peaceful for terminally ill patients; being free from pain, experiencing comfort, experiencing dignity and respect, being at peace and experiencing closeness to significant others or other careperson. These concepts may be guiding the care of children while in the terminal period. In theory's assumption it is encountered two basic elements. The first of these end-of-life experiences is individualized for each patient. The second is to support the family and is an essential part of the care of the end of life to participate in this process. End-of-life care for children in terminal period includes many subheadings such as providing pain relief, providing nutrition and oxygenation, relieving complaints such as constipation, diarrhea, treatment of febrile infections, providing the child with feelings of safety, hospitalization if necessary, and providing psychological support and social assistance to the child and family comprising. Nurse, child's physical, psychological, and social needs must recognize, evaluate, and should provide appropriate nursing care. It is the responsibility of the nurse to ensure that the child and his or her family can achieve the best possible life, as well as what the child can do at the optimal level of comfort. The theory of the peaceful end of life care in fulfilling these responsibilities can create a roof. As the disease and death perception of children may be different in each period, using the theory to provide an individualized standard care

is thought to be a guide for children and their families.

## DETERMINATION OF DIET COMPLIANCE AND ANXIETY LEVELS OF PARENTS OF CHILDREN DIAGNOSED FOOD ALLERGY

Sibel Küçük; Ayşe Özeflanili Turkey

**Introduction:** The prevalence of food allergies is increasing worldwide and affects negatively children in particular. Having a child with food allergies brings about different problems for their parents. **Methods:** The study was conducted using descriptive method with 295 parents in order to determine the compliance and anxiety levels of parents whose children were diagnosed with food allergies. Data were collected with the questionnaire form and the State Trait Anxiety Inventory. Numerical, percentages, means, medians, Mann-Whitney U, Kruskal-Wallis, and Dunn-Bonferroni analyses were used in the evaluation. **Results:** 87.1% of the children whose parents participated in the survey had an elimination diet and 51.8% of them did not receive any elimination diet trainings. 59.3 % of the parents find their knowledge about the elimination diet insufficient. The average age at which parents get their children's first food allergy diagnose is 3.5±2.6 months. 38.6% of children have allergy against five or more foods. 92.5 % of the children have an allergy against cow milk, 67.8 % of them against eggs. 69.8% of children have faces with bloody and mucus, 64.4% have atopic dermatitis against allergic food. A significant difference between children's attendance in school, egg and wheat allergy, frequency of taking the child to polyclinic, problems such as wheezing, sneezing, nasal discharge, and swelling of atopic dermatitis/atopic dermatitis and the anxiety scale score ( $p < 0.05$ ). Parents of children with egg and wheat allergy were found to have higher anxiety levels and statistically significant ( $p < 0.05$ ). **Conclusion:** A significant relationship was found between parents' anxiety levels and frequent repetition of allergy symptoms and allergy symptoms of children, and it was determined that they needed trainings. It may be

suggested that parents' training needs be determined, concerned trainings be given, nurses take active roles in the course of trainings, and studies with bigger groups be carried out. **Keywords:** Food allergy, children, elimination diet, nursing, state anxiety.

## COMMUNICATION IN THE TEAM

**Sofija Kurtović**

**Serbia**

**Introduction:** Communication with a family is maybe one of the most important factors in patient healthcare, especially in field of pediatric care, if we want to have as better outcome as it is possible. Awareness about this question is already a success but it is not enough for good communications with the family. Quality communication includes many different activities which start from the nurses' schooling till developed communication stiles in PICU. **Aim:** To consider the nurses' approach in communication with parents of children hospitalized in Pediatric intensive care unit (PICU). **Materials and Methods:** Nurses employed in PICU at University Children's Hospital in Belgrade were interviewed through questionnaire which contained and the questions about problems in communication and their suggestions for improving the communication. The survey was conducted to identify the problems and to help Nurses to overcome them. The questionnaire fulfilled 30 nurses. **Results:** The highest number of respondents were 26–30 years old (26.7%), 63% of them finished just secondary nursing school, 33% have 0–5 years working experience, and 20% of nurses have over 20 years of experience, and also 20% of them have 16–20 years' experience. 60% of respondents said that, in their opinion, they need an additional education in field of communication. 73.3% recognize the verbal and nonverbal communication as equally important in communication with family/parents. We asked them which characteristic they see as a most important in communication with family and 73, 3% they answered: patience. It is interesting that respondents said that nurses should not give the medical information to the family and that physicians are in charge to give this

information. As a biggest problem in communication they identify lack of time (45%), not enough competencies for giving more information to the family (53.3%), complicated communication with parents under the extreme anxiety (30%) and so on. **Conclusions:** After a very informative survey, of importance for the institution, we get a good insight what need to be done to improve the communication with the parents. Nurses, who spend most of the time with the patients and meet family most often, always can give practical suggestions for improving the service as well as a communication. Their most important suggestion was education for the communication with parents. The management of the clinic organized lectures and workshops about communication in the previous period.

## RISK FACTORS FOR PATIENT SAFETY IN PICU

**Sofija Kurtović**

**Serbia**

Parameters that need to be provided are numerous, complex, and extremely demanding. The pediatric intensive care unit is considered as a high-risk environment for endangering the safety of patients. If just one segment of reanimation is missing, there is a big possibility that reanimation will lasts longer than it is safe for the child. Biggest importance for patient safety during performing invasive procedures is that if one of the procedures is assessed as a high risk for the patient deterioration, the procedure need to be postponed until patient stabilization. Once correctly and successfully placed line/tubes/drains does not mean that we have permanently provided the child safety. The therapy should not be prepared routinely (each ampoule must be checked before each drug dissolves), and is prepared and applied by the nurse with the most working experience in the shift. The medical equipment only helps in the care of the patient, but the nurse and her assessment of the patient condition, through the continuous observation, is the only valid until the end, and is necessary for the preservation of the patient's safety. Transport should not be started until the patient and the equipment are fully prepared no matter how urgent the

situation is, because in this way the child's life can be even more endangered. Pediatric nurses recruited in the intensive care unit require additional training that is not yet standardized and legally prescribed at the state level. In those conditions, training can be very stressful, insufficient, and inadequate, potentially compromising the safety of each patient. Fatigue of medical staff is one of the most important factors for endangering the safety of patients in intensive care. It is necessary that all the orders for the application of therapy and solutions, as well as all laboratory analyses, need to be in written form in the envisaged documentation. Good interpersonal relationships that significantly affect the safety of critically ill patients should be established from the outset and nurtured alongside the daily work process in order to maintain continuity and quality.

### **NURSING STUDENTS' ATTITUDES TOWARDS SCIENTIFIC RESEARCH AND THEIR WORK MOTIVATION**

**Rodić Lana; Marijana Neuberg; Kristina Kišić; Dijana Hereković; Anita Lukić**  
**Croatia**

**Introduction:** Although research corpus about medical students' attitudes towards scientific research is considerable, there are only few studies during past 40 years investigating nursing students' attitudes towards science and no study investigating their work motivation. **Materials and Methods:** This research was conducted at the Nursing studies, Bjelovar University of Applied Sciences, Croatia, and the Nursing studies, University North Varazdin, Croatia. We surveyed first year nursing students enrolled in 2009 and 2014 using multiple-question Likert scale questionnaire investigating students' attitudes towards scientific research, and their work motivation. Students' attitudes towards science were presented as total score, maximum being 225 in scientific research attitudes questionnaire, and 120 in work motivation questionnaire. **Results:** Response rate in both questionnaires was >72%. Proportion of unanswered questions was 0.7%. There was no difference in male/female ration

between investigated population and whole student population enrolled into first year. There was no difference in gender distribution among four subgroups of students,  $p = 0.447$ . We found age difference between students: students in 2009 were older than the students in 2014 (2009 vs. 2014, means): Bjelovar  $30 \pm 8$  versus  $24 \pm 7$  years ( $p < 0.001$ ); Varazdin  $28 \pm 8$  versus  $22 \pm 5$  years ( $p < 0.001$ ). Median total scores were higher in year 2009 than in 2014 median in both research sites and for both questionnaires (interquartile range, IQR): Scientific research attitudes questionnaire: Bjelovar 162 (19) versus 155 (24),  $p = 0.017$ ; Varazdin 155 (24) versus 149 (23),  $p < 0.001$ ; Work motivation questionnaire: Bjelovar 90 (12) versus 82 (11),  $p = 0.017$ ; Varazdin 88 (13) versus 85 (10),  $p < 0.001$ . Rank sum test revealed that older students had better attitudes towards scientific research and motivation. **Conclusion:** Future research should investigate reasons why older nursing students have better attitudes toward scientific research and better work motivation than their younger colleges. Strategies should be developed to improve attitudes towards scientific research among younger students and enhance their work motivation.

### **ORGANIZATION OF SERVICES FOR CLINICAL HEMOSTASIS AND CARDIOPULMONARY BYPASS**

**Zorica Lazarevic; Branko Lukic**  
**Serbia**

**Introduction:** During cardiac surgery one of the most important aims is to maintain normal hemostasis preoperative and postoperative and to provide extracorporeal perfusion techniques with a large amount of vigilance from the entire team involved in the patient's care. Open heart operations are very complex, not only because of huge tissue trauma, precise surgical technique, dilution but also because of coagulation disorders, anticoagulation monitoring, and cardiopulmonary bypass procedures. Potential complications are lethal, including bleeding, chronic venous insufficiency, acute kidney injury, DIK, clot formation in tubing of extracorporeal circuit and eventually death. That is a reason why

every cardiac surgery clinic should have a medical department, fully equipped, experienced, and trained to deal with these clinical issues.

**Aim:** To represent the department of clinical hemostasis and cardiopulmonary bypass, Clinic for cardiac surgery, Clinical center Nis, our experience, organization, and results. The department employs eight people; the head of the department is MD specialist in transfusion medicine, three perfusionists and four medical technicians who work at the point of care laboratory for the detection and treatment of haemostatic disorders. This department performs activities in the operating room, intensive and semi-intensive care unit, as well as in the other clinics in Clinical center. During the surgery the heart-lung machine (Terumo perfusion system, Stockert S5), completely preoperatively takes over the function of the heart and lungs, so perfusionist deal with maintenance of blood flow in the tissues and organs during surgery, maintenance of circulatory volume, oxygenation of blood, maintenance of electrolyte, and haemostatic status of the patient. Intraoperative blood salvage (Haemonetics cell saver 5+, Electa Dideco, Sorin Xtra) is very important technique provided also by medical technicians from our department. Postoperative examination of global haemostatic status of the patient (Rotem delta test), platelet function testing (Multiplate analyser), and differentiation of mechanical from coagulopathic bleeding, application of targeted haemostatic therapy in bleeding patients is part of our routine work.

**Results:** Intraoperative blood salvage-about 400 procedures per year, ECC procedures-so far 1,000 procedures have been done, ROTEM tests about 2,000 patients or over 8,000 individual analyses per year. Multiplate tests about 3,500 patients or over 12,000 individual analyses per year, tissue glue preparing-approximately 200 patients and 1,000 mL of tissue glue per year, coagulation status monitoring- over 3,000 complete hemostasis screening tests per year, complete blood count over 5,000 analyses per year, more than 2,000 tests per year (CTnI, CK MB, BNP, PRE-SEPSIN), heart rate (HR) ACT, LR ACT and so on.

**Conclusion:** Mortality rate at our Clinic is 1.88%,

and our goal is to achieve better results, with continued education and dedication to work.

## CRITICAL CARE NURSES' BELIEFS AND SELF-REPORTED PRACTICES RELATED TO PAIN ASSESSMENT IN NONVERBAL PATIENTS IN INTENSIVE CARE UNIT AND EMERGENCY DEPARTMENT

Qing Li; Xiaoying Wu

China

**Background:** The evidence-based pain assessment recommendations for nonverbal patients and the knowledge of those recommendations do not necessarily result in nurses' application to clinical practice. Current studies have been shown to significantly improvement on beliefs and attitudes related to knowledge transfer to practice. **Aim:** To explore the linkage between critical care nurses' beliefs about pain assessment in nonverbal patient and their self-reported practices. **Methods:** A convenience sample of 274 registered nurses caring for critically ill adult patients at one university hospital in Beijing were surveyed through an online study questionnaire during December 15th to 18th, 2017. Critical care nurses from four units participated, including 74 nurses working in surgical intensive care unit (ICU), 84 in medical ICU, 63 in the emergency department, and 53 in the coronary care unit. The questionnaire consisted of three parts and was developed by the researcher based on generally principles of pain management and position statement and clinical practice recommendations from pain management nursing guidelines for pain assessment in the nonverbal patient. Part 1 was a brief investigation on demographic data. Part 2 asked nurse to rate their extent of agreement with statement related to pain assessment on a likert 5 scale. Nurses rated the frequency with which they performed pain assessment in the current daily practice on a Likert 5 scale. The responses were downloaded and analyzed by descriptive statistics, one-way ANOVA, post hoc test, and Pearson correlation coefficients. **Results:** One-way ANOVA with post hoc tests showed a significant difference in

belief scores based on units worked. Significant differences in beliefs were found based on age and years of work. There were no differences in self-reported practice based on age, years of work, and education backgrounds. Paired *t* tests showed significant differences between total pain beliefs and pain practice, between general pain beliefs and nonverbal pain beliefs, between general pain beliefs and practices, and between nonverbal pain beliefs and practices. Additional testing using Pearson correlation coefficients demonstrated that four out of seven questions relating to beliefs were significantly correlated with similar questions related to practices. Good reliability of the instrument was demonstrated by Cronbach alpha coefficient a 0.79. **Conclusion and Recommendations:** Critical care nurses' beliefs on pain assessment may influence the clinical practice. Further education should focus on providing pain assessment standards, procedures in nonverbal patients, as well as utilization of assessment instruments to integrate pain management nursing knowledge into critical nurses' belief systems and practice environment.

### COMPARISON OF EFFECTIVENESS AND COMPLICATIONS BETWEEN DIFFERENT SPUTUM SUCTIONING DEPTH IN TRACHEA INTUBATION PATIENTS

Yao Liao; Xi Jin  
China

**Introduction:** Suction is a routine practice in trachea intubation patients in Intensive Care Units to avoid a store of secretions and blockage of the airway. Effectiveness and complication of suction varied according to the depth of catheter. Many guidelines supported care providers in determining the most appropriate method but the most appropriate depth of suctioning is still unclear. The study aims to identify evidence about the benefits and risks of deep and shallow suction. **Materials and Methods:** Ten electronic databases were comprehensive searched (Cochrane Library, PubMed, Medline, EMBASE, CINAHL, Academic Search Complete, Science Direct, Chinese and Technology

Periodicals database (VIP), Wangfang database, and Chinese National Knowledge Infrastructure (CNKI) database) until September 30, 2017 with no restriction for language. Two reviewers independently evaluated selected randomized controlled trials (RCTs) according to Cochrane Handbook 5.3. **Results:** Totally 11 RCTs and 617 patients were involved. Deep suction performed more effective with fewer suction times daily (WMD = 1.32, 95% CI: 1.11 to 1.53,  $p < 0.01$ ), longer suction interval (WMD = -0.48, 95% CI: -0.61 to -0.36,  $p < 0.01$ ), and better arterial blood oxygen saturation (SPO<sub>2</sub>) improvement (WMD = -0.58, 95% CI: -0.77 to -0.39,  $p < 0.01$ ). Deep suction will cause bigger fluctuation in heart rate (HR) (WMD = -3.32, 95% CI: -3.50 to -3.15,  $p < 0.01$ ). Unexpected, no significant difference of tracheal or bronchial damage rate ( $OR = 0.45$ , 95% CI: 0.11 to 1.90,  $p > 0.01$ ) and Systolic blood pressure (SBP) change level (WMD = 0.16, 95% CI: -0.02 to 0.33,  $p > 0.01$ ) were found between the two different suction depths. **Conclusions:** This meta-analysis provides evidence for benefits and risks of different suction depth. It is clear that deep suction performed more effective in airway clean. A clear risk of deep suction has not been established.

### STUDY OF INTENSIVE CARE UNIT NURSES' LOW BACK PAIN STATUS IN FOUR TERTIARY HOSPITALS IN CHENGDU

Huan Liu; Zhi Guo; Aiping Du; Yongming Tian  
China

**Introduction:** Investigation and analysis of status quo of low back pain in intensive care unit (ICU) nurses in Chengdu to provide evidence for the promotion of ICU nurses' health work. **Materials and Methods:** A self-designed questionnaire was adapted to study ICU nurses' status of low back pain in four large tertiary hospitals in Chengdu to understand and analyse the status of ICU nurses' low back pain. **Results:** A total of 920 nurses were evolved in our study, 895 questionnaires were returned, with 887 valid questionnaires. 93.3% of nurses had low back pain and 89.3% of nurses are currently suffering from low back pain. The average time of low back pain last week is (3.36±1.24)

hours. The first occurrence of low back pain was one to five years after work, and the average history of low back pain was (3.64±0.76) years. After their initial illness, 29.7% get better, 42.7% recurrent episodes, 27.6% persistent existence, 28.7% has been diagnosed, 67.7% received treatment after low back pain, such as massage and exercise therapy. Low back pain led to a total of 392 d/year labor loss for ICU nurses, with an average loss of 0.44 d/(person-year). 56.7% of ICU nurses had considered departure due to low back pain. **Conclusion:** ICU nurses have a high prevalence of low back pain and suffer long-term back pain, which may have had an impact on the individual and the work of the nurses. Therefore, nurses should be trained in ergonomic knowledge to promote the use of correct posture and force in nurses' clinical work. Nursing managers should dispose of human resources depending on the circumstances reasonably, and moderately allocation nursing procedures to reduce the occurrence of low back pain.

### PEARLS AND PITFALLS OF IMPLEMENTING THE INTENSIVE CARE UNIT LIBERATION BUNDLE IN NEUROCRITICAL CARE

**Sarah Livesay**

**USA**

This talk will evaluate the Society of Critical Care Medicine (SCCM) Intensive Care Liberation Bundle from the perspective of neurocritical care. The talk will evaluate the unique challenges of managing pain, sedation, mechanical ventilation weaning, delirium management, progressive mobility, and family involvement in neurologically devastated patients. **Objectives:** to review the SCCM intensive care unit (ICU) Liberation bundle components and association with improved outcomes; to discuss the unique challenges of each bundle component specific to neurologically devastated patients; and to identify strategies to manage these challenges and implement bundle components in neurologically devastated patients.

### THE QUALITY IMPROVEMENT MOVEMENT IN CRITICAL CARE: USING PERFORMANCE MEASURES TO IMPROVE OUTCOMES

**Sarah Livesay**

**USA**

This talk will explore the efforts to improve quality of care and patient outcomes including the use of performance measures. The talk will explore how quality measures impact healthcare, how to develop a high-quality performance measure, and understanding the unintended consequences of performance improvement. **Objectives:** to discuss the quality improvement imperative over the past several decades and how it relates to critical care; to identify well-developed quality performance measures; and to review the impact of performance measurement on intensive care unit (ICU) care.

### APPLYING MELEIS'S TRANSITION MODEL IN INTENSIVE CARE UNIT PATIENTS' TRANSFER

**Violeta Lopez**

**Singapore**

Critically ill patients experience numerous transitions during their hospital stay, such as illness condition transition, treatment locations transition, or healthcare providers' transition. Modern intensive care medicine and advances in medical technology have allowed more patients to survive with acute and severe illness and intensive care unit (ICU) patients are being transferred out to general wards early that still require complex care. Transferring patients out from ICU to general ward is a difficult time for them, their families, and healthcare providers. Patients and their families view the transition as recovery and expect for well-coordinated continuum care during these transitions. Patients see these transitions as unpredictable, scary, and stressful. The situation is made worse by the limited number of available ICU beds, fragmentation, and silo healthcare practices between healthcare providers and units jeopardizing critical illness patient's safety and incurring high healthcare costs when deterioration and readmission to ICU happen. This paper presents a model of transition

to facilitate patients' transfer out of ICU to general wards.

### **FACTORS INFLUENCING CHINESE PATIENTS' DECISION IN SEEKING EARLY TREATMENT UPON ONSET OF CHEST PAIN**

**Violeta Lopez**  
**Singapore**

Chest pain is often the indicative of angina or acute myocardial infarction (AMI). The importance of prompt institution of reperfusion for AMI has led to public education campaign to reduce time between the onset of symptoms and treatment. However, recent evidence shows that about 40% of patients experiencing chest pain delay calling for emergency assistance mainly due to thinking that the symptom is not cardiac in origin. Researchers worldwide have considered whether ethnic and cultural factors make a difference in patients' responses to AMI symptoms. The study therefore, aimed to explore the factors that influence Chinese patients' decision in seeking early treatment upon the onset of chest pain. A qualitative study of 27 Chinese patients participated in this study. The results showed that the mean time from the onset of chest pain to accessing treatment was 15 hours for the male and 54 hours for female patients. Three themes emerged from the data analysis: becoming aware of threat, maintaining sense of normality, and struggling to mobilize resources. Although they recognized the symptom as abnormal, they opted to self-treat and wait before seeking help. The Chinese patients showed signs of rationalization, hesitancy, and passivity. The hesitancy to mobilize resources was further complicated by feelings of being afraid of the consequences.

### **MULTIMODAL MONITORING IN THE INTENSIVE CARE UNIT BRAIN TISSUE OXYGENATION MONITORING (PBT<sub>O2</sub>) IN CEREBRAL ANEURISM PATIENT CARE. CASE STUDY**

**Mirjana Meštrović; Jelena Vrgoč; Mario Bepaljško; Ivan Lončar**  
**Croatia**

Subarachnoid hemorrhage (SAH), as a result of cerebral aneurism rupture is connected with high

morbidity and mortality. As references show, one-third of patients die directly after cerebral aneurism rupture without hospitalization, one-third has neurological damage, and only one-third has positive outcome. Primarily for those reasons, main goals of neurointensive care is sustaining the intracranial pressure (ICP), cerebral perfusion pressure (CPP), and aerobic brain metabolism within referent values with goal of reducing secondary brain injuries. Low values of brain tissue oxygenation (PbtO<sub>2</sub>) or cerebral hypoxia are indicators of negative outcome. PbtO<sub>2</sub> monitoring is a useful tool in discovery of cerebral oxygenation disorder in real time. Goal of this paper is a case study of 31-year old patient with SAH after cerebral aneurism rupture, which had Licox monitor placed after neurosurgical procedure of aneurism clipping. After carrying out the procedure, patient was intubated, artificially ventilated and transferred to neurosurgical intensive care unit. Tissue oxygenation and brain temperature (in penumbra area), ICP, CPP, mean arterial pressure (MAP), EtCO<sub>2</sub>, and SpO<sub>2</sub> were continuously monitored. Healthcare and intensive care measures were conducted by the level of risk with the goal of reduction of secondary brain injuries. 10 days post-operation, patient was transferred to the Department of Neurosurgery, and 21 days later was transferred to rehabilitation spa. **Keywords:** brain tissue oxygenation, cerebral aneurism, SAH, intensive care.

### **DELIRIUM—WHAT DO WE KNOW AND WHAT DO WE NEED TO KNOW?**

**Marion Mitchell**  
**Australia**

Delirium occurs in between 15% and 39% of European critically ill patients in Intensive Care Units (ICU). It is an independent risk factor for poorer patient outcomes. These include increased hours on the mechanical ventilator, increased ICU and hospital length of stay, decreased cognition up to 12 months post ICU discharge, and increased mortality. Despite a widespread recognition of the problem, routine screening and management

of delirium is not undertaken in many ICUs. Delirium will be described and the risk factors examined. Screening tools and interventions to reduce both the incidence and severity of delirium will be discussed. Although delirium is widespread in ICU, multi-disciplinary educational strategies have the potential to improve patient outcomes by optimizing the assessment and early treatment of the delirious patient.

### INTER-SPECIALTY NURSING ROUNDS— IMPROVING PATIENT CARE

**Marion Mitchell**

**Australia**

**Background:** Trauma patient management is complex and challenging for nurses in the Intensive Care Unit (ICU) due to the multiple systems affected by injuries and the numerous specialty medical teams providing care. Patient care is contingent upon the nurses' ability to make effective evidence-based clinical decisions and nurses may benefit from support to implement best practice to effectively care for complex trauma patients.

**Local problem:** Providing optimum nursing care to complex ICU trauma patients is challenging as nurses have varying levels of skills and knowledge. Effective communication and inter-specialty collaboration is essential and yet not always practised. **Methods:** The Plan, Do, Study, Act model for a quality improvement cycle was used to structure the study and intervention for change and improvement. **Intervention:** Inter-specialty nursing round with nursing experts both internal and external to the ICU were initiated to potentially improve patient care, collaborations, and nurses' knowledge. The intervention included structured, weekly rounds that were conducted at the bedside. Nursing experts and others collaborated to assess and make changes to trauma patients' care. Inter-specialty nursing rounds provide a process by which patients were discussed on an individual basis to identify challenges and issues. **Results:** There were 132 trauma patients assessed. A total of 452 changes to patient care occurred. On average, three changes per patient resulted. Changes

included nursing management, medical management, and wound care. Nursing staff reported an overall improvement of trauma patient care, trauma knowledge, and collaboration with colleagues both within and external to ICU. **Conclusions:** Inter-specialty trauma nursing rounds utilized expert nursing knowledge. They are suggested as an innovative way to address the clinical challenges of caring for high acuity trauma patients and provide a strategy to bridge communication between nursing staff, hospital specialty nurses, and families of trauma patients in ICU.

### HUMANIZING INTENSIVE CARE: FOCUS ON THE PATIENT FAMILY AND THE HEALTH TEAM

**Marcelo Morales**

**Argentina**

In recent decades, the intensive scientific and technological development of the Intensive Care Units (ICU) has led to a notable increase in the survival figures of the patients admitted to these units. The level of training of health professionals dedicated to critical patients is high, and their performance is excellent. However, an intensive use of technology has been able to relegate the human and emotional needs of patients, families, and professionals to the background. As a consequence, there is a loss of the narrative in the elaboration of the clinical histories, lack of active listening to the demands of patients and relatives, and the questioning of the professional vocation for stress. This stress stems from the lack of stable working conditions due to human and material cuts, partly due to the economic crisis, as well as the lack of social recognition. Therefore, it is time to reflect on whether a rehumanization of care should be rethought and improve the relationship between patients, family members, and health professionals. The term "humanize" could be understood as controversial. Many people may be surprised that something so intrinsic to the health profession can be the subject of debate. It is not intended to question the humanity displayed by professionals. The true objective is to achieve greater closeness, understanding, affection, and tenderness, increasing our capacity for



self-criticism and persevering in our permanent desire for improvement. The health system can be considered humanized when it is placed at the service of all those who comprise it: patients, relatives, and health professionals at all levels.

### **TELEHEALTH IN PEDIATRIC PATIENTS**

**Perver Mustu; Sibel Kucuk; Perver Mustu;  
Dilek Uludasdemir  
Turkey**

In recent years, development in science and technology has shown itself in the field of health and has contributed to the creation of new service areas such as tele-health, tele-nursing. Tele-health services help to improve care management and quality of life, especially for patients with chronic illnesses and children with special health needs. Tele-health services reduce the cost of care by reducing the number of patients visiting the hospital, emergency services, and home visits. At the same time, the tele-health services are helping to realize the goals of the medical home model. For medically complex children, tele-health services are contributing to the delivery of comprehensive, integrated, and community-based services as much as possible. Tele-health services for those living in rural areas in particular, may help by allowing families access to home services. It is seen that to support pediatric palliative care patients cared for at home tele-health related to the use of more research needs to be done. Within the tele-health system, nurses with an important place have roles such as critical thinking, generating knowledge, communicating, and using innovations. Expanded tele-healthcare has an important potential to improve population health by improving care and communication, facilitating more patient monitoring, and expanding educational opportunities. With the improvement of access to the Internet with home and mobile devices, patient interest in tele health is increasing. Service providers are perfecting out-of-hospital time with innovations and advances, helping patients take advantage of new ways of getting medical care. It should be considered that infrastructure issues, licensing issues, security and privacy issues, and legal concerns to

continue benefits from tele-health services. In this study, the conditions of the children's patients in the literature were examined within the scope of the tele health service. **Keywords:** telehealth, telenursing, child health, innovation.

### **HANDLING AND CONTROL OF OPIOID ANESTHETIC SERVICES**

**Marjetka Nemes  
Slovenia**

Opioid encounter in anesthesia activity is every day. This also applies to the field of intensive medicine and the management of acute and chronic pain. Opioids are also used in one of the regional forms of anesthesia. It is epidural anesthesia or analgesia (obstetrics, management of acute postoperative pain). Due to the high risk of opioid abuse, consistent and accurate traceability of opioids in clinical practice is very important. This is also dictated by legislation—official leaflet of the Republic of Slovenia. The correct handling is dictated by the obtained National Integrated Accreditation for Healthcare Organizations (NIAHO) and ISO 9001 certification, which provides detailed instructions on their use and traceability in clinical medicine. In the future, its role will be given to the color coding (ISO 9001), which will be international. **Keywords:** opioids, traceability, abuse.

### **TREATMENT OF PAIN CAUSED BY CHRONIC DEGENERATIVE RHEUMATISM**

**Gordana Panova; Jasna Boshkovska; Blagica Panova  
FYR of Macedonia**

**Introduction:** Deformative osteoarthritis is a degenerative dystrophic noncontagious disease of the locomotor system, which has a progressive, chronic, and recurrent prognosis. Pain is a multi-dimensional and complex process, a painful process which can affect a person's physical, emotional, psychological, social, working, and many other capabilities. Pain as a subjective feeling has individual characteristics and its manifestations and intensity differ from one person to another. **Aim:** Applying the Numerical Pain Scale, a protocol for physical treatment of knee

arthrosis in a chronic stage and an evaluation of the effects in order to reduce clinical manifestations. **Materials and Methods:** 20 patients included, 12 of which are women (60%), and eight are men (40%), over the age of 56, treated in Negorski Baths–Negres; Clinical examination through tests, protocol physical therapy, measurability of pain before and after treatment with a numerical scale of 0–5. **Results:** The rheumatic diseases of the extremities of the limbs, a large number of which are arthroses, infect 17.3% of the population. Before treatment, pain was represented with 59%, and after treatment 14%—the difference was 45%. This means that in the investigated group the pain is effectively reduced after the treatment. **Discussion:** Physical treatment was statistically significant for reducing pain, as measured by NAS, considering that before treatment the pain was present in 59% and after treatment, 14%. **Conclusion:** The effect is achieved by reducing the pain by 45% after treatment, regardless of age and sex. **Keywords:** chronic degenerative disease, pain, number of scales.

## EVALUATION OF TRANSPLANTED PATIENTS FROM MONTENEGRO 2005–2015

**Damir Peličić; Dragica Dobrovic**

### Montenegro

**Introduction:** The preconditions for kidney transplantation are: Law, International Cooperation, Education, Promotion, and Budget. The Fourth Law on Transplantation and Organ Donation (November 2009). Ordinances on Live Transplantation (April 2012). Guidelines on Criteria for Cerebral Death (September 2012). **Methods:** Prospective retrospective study. **Results:** Renal transplantation—by age (128 patients 2005–2015). Malignant kidney transplantation by donor type: 79 live-related (62.6%), 27 cadaveric (24.3%), 14 live unrelated (13.1%). Live Related Kidney Transplantation—According to the Transplantation Center: Clinical Center of Serbia 32, Military Medical Academy Belgrade 13, Clinical Center Rijeka 6, Clinical Center of Montenegro 23, Paris-France 2, Clinical Center Sarajevo 1,

KBC Zagreb first. Cadet Transplantation/Towards a Tx Center: Federal Medical Biological Agency, Clinical Hospital 119—Moscow, Russia: 18th, Hematological Clinical Center Moscow—Russia: 2 Scientific Institute NV Sklifosovsky Moscow—Russia: 1., Lion—France: 1, Turin—Italy: 1, Vienna—Austria: 1, KBC Merkur Zagreb: 1, Clinical center of Montenegro, Podgorica, Montenegro—1. **Conclusion:** The role of nurses within the transplant team is: coordination in protocols for potential donors and organ recipients within pretransplantation intervention, intensive care, and tracking patients in the early posttransplant period, psychological support in pretransplant preparation periods, nutrition education, and lifestyles.

## INTRAOPERATIVE BLOOD SALVAGE AS PART OF A BLOOD CONSERVATION STRATEGY IN ANESTHESIA Sasa Ristic; Danica Stamenkovic; Biljana Savic Serbia

**Background:** Transfusion of blood is the direct injection of blood and blood components into a person's circulation system. When blood from one (or more) person is transfused to another person, this term is called allogeneic or homologous transfusion. Blood taken to one person and later transfused again, this term is called autologous transfusion or autotransfusion. Autotransfusion is a branch of transfusion medicine which involves the collection and subsequent retransfusion of the patient's blood. The use of intraoperative cell salvage and autologous blood transfusion has become an important method of blood conservation in anesthesia. The main aim of autologous transfusion is to reduce the need for allogeneic blood transfusion and its associated complications. Allogeneic blood transfusion has been associated with increased risk of tumor recurrence, postoperative infection, acute lung injury, perioperative myocardial infarction, postoperative low-output cardiac failure, and increased mortality. **Objectives:** In Clinic for anesthesia and intensive therapy of the Clinical Center Niš, a team of anesthesiologist and nurse anesthetists passed training for intraoperative

blood salvage (IBS) and has about 25 intraoperative blood salvages for period from February to August 2018. Intraoperative blood salvage was performed during major surgeries in vascular surgery, chest surgery, and orthopedics, where greater blood loss was expected during surgery, and five intraoperative blood rescue operations were performed in an emergency in vascular and orthopedic surgery due to unplanned large blood loss. During this surgical intervention, the anesthesiology team used Perioperative autologous transfusion technique (collection, processing, and reinfusion of blood lost in the same patient) on the device “*Dideco Electa Concept*,” and in stages: IBS performed during surgery and postoperative blood salvage (PBS) performed immediately after surgery or during trauma situations at the intensive care unit (ICU). According to the strategic plan, it is planned to make a total of 80 IBSs by the end of the current year. In the coming months is also planned another internal training of the anesthesiology team for intraoperative blood saving on new devices for autotransfusion, which will be delivered to Clinic for anesthesiology and intensive therapy.

**Conclusion:** Cell salvage has been demonstrated to be safe and effective at reducing allogeneic blood transfusion requirements in adult elective surgery, with stronger evidence in cardiac and orthopedic surgery. Prolonged use of cell salvage with large-volume autotransfusion may be associated with dilution of clotting factors and thrombocytopenia, and regular laboratory or near-patient monitoring is required, along with appropriate blood product use. Cell salvage should be considered in all cases where significant blood loss (>1,000 mL) is expected or possible, where patients refuse allogeneic blood products or they are anemic.

#### **THE ATTITUDES OF THE STUDENTS OF THE FIRST YEAR OF THE STUDY OF SESSIONS TOWARDS SCIENCE AND SCIENTIFIC METHODOLOGY**

**Lana Rodić; Anita Lukić; Marijana Neuberg  
Croatia**

The survey was begun in 2014, at the Bjelovar University and North of Varazdin University, a

Professional Study of Sessions. The main purpose of the research is to explore the attitudes of students of the first year of Sessions studies in science and scientific methodology. The results of the research will help Sessions study teachers to guide students to scientific thinking and scientific research as an expected and scientific contribution. The students of the first year of the Professional Study of Sessions anonymously met the anthology of science. The population of the population is made up of extraordinary and regular students of the Professional Studies of Sessions. The survey consists of three works: questions related to demography, questions exploring students' attitudes towards science, and questions exploring the knowledge of students on scientific methodology. One-time, primarily, research conducted to raise theoretical qualitative knowledge of students of quite different ages, more represented in the female sex. The obtained results show differences in attitudes regarding the age structure and sex. Thus, interesting attitudes have been obtained that are related to the factors mentioned and their interaction. Therefore, we come to different conclusions based on the attitudes of individual students, as well as the entire population of Sessions students at the Bjelovar University and the University of Varazdin. Thus, any new knowledge that can improve the education and specific knowledge of nurses is of great importance for the development of sisterhood as a profession and profession itself. With the advancement of the past, the present, and the future, the question arises as to where the limit of sister's work, decisions and procedures, and knowledge and skills. In trying to define this boundary, many questions are intertwined, and so is the issue of devotion to your vocation or business. Do healthcare providers do their jobs only routinely or hardly contribute to science? With the results obtained, we can say that the current state of affairs is not what it really could be, and that greater human efforts and investments can certainly achieve more in all fields of science. However, given Nursing as a very young profession in Croatia, we need to be satisfied with our achievements and strive for higher. So, in the future, we

expect a positive shift from the previous results and the knowledge of the sister's profession so far.  
**Keywords:** attitudes, science, students, nursing.

### WHY NURSES PLAY A CRITICAL ROLE IN STEPWISE EARLY MOBILIZATION

**Maria Isabelita Rogado**

#### **Philippines**

This session will provide emphasis on standardized care of early progressive mobility, the 'E' component of the ABCDEF bundle emphasizing the benefit of mobility in breaking the intensive care unit (ICU) ventilator-sedation-delirium-weakness cycle. It will review the known "old concepts" related to early mobility and identify barriers to early mobility. The focus of the discussion will project the critical role of nurses in the stepwise early mobilization process.

### WHY WE NEED A "BUNDLE" TO OPTIMIZE INTENSIVE CARE UNIT PATIENTS' RECOVERY AND OUTCOMES

**Maria Isabelita Rogado**

#### **Philippines**

This session will focus on the management strategies, utilizing the ABCDEF Bundles, at the back-end of critical care that will help optimized patients' recovery and outcome. The understanding of this care bundle of six evidence-based strategies will help liberate our patients from the life support that was instituted during the front-end care of high illness severity. Likewise, this session will provide an explanation of each of the components of the ABCDEF Bundle by summarizing the evidences behind this bundle of care. A multidisciplinary care protocol will support the discussion so that this bundle can be adopted into the everyday practice. The focus of the discussion will present the unique role that nurses play in implementing the ABCDEF bundle into the clinical management of the intensive care unit (ICU) patient.

### HIGH-RISK MEDICINES APPLICATIONS; POTASSIUM INFUSION IN SIMULATION

**Faydalı Saide**

#### **Turkey**

**Introduction:** High-risk drugs such as concentrated potassium supplements in patients when used incorrectly can cause serious complications or death. This study was carried out with the aim of determining of application errors and causes during potassium treatment.

**Materials and Methods:** This descriptive study was conducted with 35 intern nurses trained at Necmettin Erbakan University Simulation and Modeling Application and Research Center. Intern nurses participated in simulated trainings in three groups of 12-12-11 persons. After playing the simulation scenario prepared for the potassium infusion, the causes of application mistakes of infusion and the causes of the errors were questioned with semi-structured focus group interviews. For the research, Necmettin Erbakan University Meram Medical Faculty ethics committee approved and NEÜSİMMER provided the institutional permission, student nurses were informed about the study and their written and verbal informed consent were taken. Numbers and percentages were used in the evaluation of the data. **Results:** The intern nurses participating in this study are in the age range of 21-25 years. All of the students stated that they were not sufficiently aware of the risks of potassium infusion. All agree that simulated education is effective on this issue. As a result of the study, it was determined that most of the students did not care about adjusting the flow rate of the infusion fluid, knowing other electrolyte solutions, and medicines which could create agonistic or antagonistic effect. The students stated that is the source of the problems "nurses who are involved in risky drug follow-up during their clinical practice are not sufficient, they cannot become role models," "the use of infusion pumps for risky medicines may increase the safety, but the number of infusion pumps in intensive care units and clinics is not sufficient." All

students on the importance of the use of technology in risk prevention have been agreed. **Conclusions:** At the end of the study, students were diagnosed with high-risk medicines practice errors and their causes were identified. Patient safety will be ensured by updating the knowledge and practices of the nurses during and after their fundamental education about high-risk medicines and use of technology.

### **EARLY MOBILIZATION IN THE INTENSIVE CARE UNIT**

**Alicia San José**  
**Spain**

Progress in intervention for critically ill patients has raised the survival rate of these patients and allows health professionals to focus their care on raising the quality of life after admission to the intensive care unit (ICU). One of the main limitations of patients who have survived ICU is the loss of functional ability due to ICU-acquired weakness (ICUAW). ICUAW that can be diagnosed in 26% to 65% of the patients treated with mechanical ventilation (MV) for over five days. The ICUAW includes clinical manifestations of myopathy, polyneuropathy, and neuromyopathy such as weakness and loss of muscle mass related to the critical condition without any other explanatory aetiology. The risk factors to suffer ICUAW are the comorbidity grade, sepsis as an admission diagnosis, muscle relaxants and corticoids administration, hyperglycemia and multi-organ failure presenting different levels of evidence among them. Different interventions have emerged to enhance early mobilization of the critically ill patient, meaning the activity performed by the patient between the second and the fifth day of ICU admission. We conducted a prospective cohort study of patients mechanically ventilated for  $\geq 48$  hours to evaluate the incidence of ICUAW in Spanish ICU and identify standard care variables related to development of ICUAW, ability to self-care on discharge from ICU, and perceived quality of life on hospital discharge. In total 675 patients were included from 86 ICUs all over Spain.

### **VENTILATOR ASSOCIATED PNEUMONIA PREVENTION: ZERO PNEUMONIA PROGRAM**

**Alicia San José**  
**Spain**

Nosocomial pneumonia is an infection of the pulmonary parenchyma, and is responsible for important rates of morbidity and mortality. Frequently, pneumonic processes taking place in hospitalized patients are severe. These cases are known by Hospital Acquired Pneumonia. Among them, we can identify the ventilator-associated pneumonia (VAP). Bundles are evidenced-based practices clustered to enhance the implementation of these practices, and in this case, to prevent VAP. In Spain, a big program under the name Pneumonia Zero was developed based on the simultaneous application of different bundles. The objective of the project Pneumonia Zero is to reduce the incidence on VAP nationwide to at least nine episodes per 1,000 mechanical ventilated days, which would mean a reduction of 25% in relation to the 2009 and 2010 rates.

### **THE ABC OF HEMODYNAMIC MONITORING DURING GENERAL ANESTHESIA**

**Sasa Seferovic; Miljana Stankovic; Nikola Antonijevic**  
**Serbia**

Hemodynamic monitoring refers to measurement of pressure, flow, and oxygenation of blood within the cardiovascular system using invasive technology to provide quantitative information about vascular capacity, blood volume, pump effectiveness, and tissue perfusion. The spectrum of hemodynamic monitoring ranges from simple clinical assessment and routine bedside monitoring to point of care ultrasonography and various invasive monitoring devices that include finger based monitoring devices, the mini-fluid challenge, the end-expiratory occlusion test, central venous pressure (CVP) monitoring, the pulmonary artery catheter, and other modern invasive hemodynamic monitoring devices. The clinician must be aware of the range of available techniques, methods, interventions

and technological advances as well as possess a sound approach to basic hemodynamic monitoring prior to selecting the optimal modality. Classical hemodynamic monitoring is based on the invasive measurement of systemic, pulmonary arterial, and venous pressures, end of cardiac output. Since organ blood flow cannot be directly measured in clinical practice, arterial blood pressure is used, despite limitations, as estimate of adequacy of tissue perfusion. A mean arterial pressure (MAP) of 70 mm Hg may be considered a reasonable target, associated with sign of adequate organ perfusion, in most patients. In the approach to hypotension, which is the most common cause of hemodynamic instability in critical ill patients, increasing levels of monitoring may be used. Assuming that CVP and pulmonary artery occlusion pressure (PAOP) are adequate estimates of the volume of the systemic and pulmonary circulation respectively, the following decision tree is suggested: 1) make a working diagnosis based on the relationship between pressure (CVP and PAOP) and cardiac output or stroke volume (CO or SV); 2) consider conditions that may alter reliability of CVP and PAOP in estimate adequately circulating volumes such as abnormal pressure/volume relationship (compliance) of the right ventricular (RV) or left ventricular (LV), increased intrathoracic pressure (positive end-expiratory pressure [PEEP], auto PEEP, intra-abdominal pressure), valvular heart disease (mitral stenosis); 3) look at the history; 4) separating RV and LV by reciprocal variations of CVP, PAOP and SV. CVP is often used as sole parameter to monitor hemodynamic. However, CVP alone may not differentiate between changes in volume (different venous return curve) or changes in contractility (different Starling curve). Finally, other techniques such as echocardiography, transesophageal Doppler, and volume-based monitoring system are now available.

## ENVIRONMENTAL STRESSORS PERCEIVED BY PATIENTS IN SURGERY AND INTERNAL INTENSIVE CARE UNITS

Kurşun Şerife; Büşra Çakır

Turkey

**Objective:** The purpose of this research is; to determine the environmental stressors perceived by patients in surgical and intensive care units and to assess whether perceived environmental stressors differ according to sociodemographic and disease characteristics. **Methods:** This descriptive study was conducted between April 2, 2018 and June 15, 2018 with 110 patients in surgical and intensive care units of a university hospital in a provincial center. The data was collected using the “Patient Presentation Form” and the “Environmental Stressors Scale at the Intensive Care Unit.” *t*-test, ANOVA, and Mann-Whitney U test were used to evaluate the data summarized by number, percentage, mean, and standard deviation. **Results:** Stressors most perceived by intensive care patients participating in the study were determined as hearing the crying/groaning of other patients, being bored, being unable to sleep, feeling pain, and hearing machine sounds. In the intensive care unit, the total score patients received from environmental factor scales is  $67.45 \pm 15.66$ . It was determined that only age and intensive care type and scale total score were independent variables ( $p < 0.05$ ). Patients under 60 years old and patients staying in surgical intensive care units were found to have higher scores. **Conclusion:** As a result of research findings, the level of environmental stressors perceived by intensive care patients in terms of total points was found to be low and the most important environmental stressors perceived by patients were determined as hearing the crying/groaning of other patients, being bored, being unable to sleep, feeling pain, and hearing machine sounds. **Key words:** Environmental effects, internal, surgical, intensive care unit.

## INFORMATION AND READINESS FOR DISCHARGE STATUS OF PATIENTS WITH TOTAL KNEE REPLACEMENT

**Kurşun Şerife; Özlem Çiftçi**

**Turkey**

**Introduction:** This study was conducted as a descriptive study in order to determine the status of patients about readiness for discharge to which it was applied total knee prosthesis and to determine the relationship between their readiness for discharge situation with their sociodemographic characteristics, health/illness characteristics, and status of being informed. **Methods:** The study was carried out with 183 patients staying in orthopedic services of a state hospital located in a province center. In the collection of data, a questionnaire form was used to evaluate the introductory characteristics of the patients (sociodemographic, past and present health characteristics), receive information about pre- and postoperative and discharge periods, and their ready-to-discharge situations. The data was collected by the researcher from March 21st to August 19th, 2016 by face-to-face interview. The data was summarized by number, percentage, mean, and standard deviation. The chi-square test was used to evaluate the data. **Results:** It was determined that 74.9% of the patients to whom total knee prosthesis was applied, were informed related to preoperative period, 87.1% of patients were informed related to postoperative recovery period and 98.1% of them were informed about home care after discharge. It was determined that pre- and postoperative information was informed by doctors and nurses, and by doctors only during the discharge period. It was determined that 96.7% of the patients were ready for discharge and believed that they could continue their ordinary lives at home. Independent variables were found to be related only to the perception of income status and state of having problem in postoperative period and being ready for discharge ( $p < 0.05$ ). Patients with very good and good income status and those who did not have postoperative problems were found to have higher readiness rates for discharge. **Conclusion:**

According to the findings of the research, it was found out that most of the patients were informed about the preoperative and postoperative and discharge periods and the majority of them were ready for discharge.

## APPLICATION OF SPIRAL OPENING TRANSPARENT RESTRAINT DEVICE IN SAFETY MONITORING OF FINGER VEIN OXYGEN SATURATION

**Han Sheng; Hongyan Zhang; Limei Zhang;**

**Xueying Liu; Rong Wang**

**China**

**Background:** Oxygen saturation monitoring is the easiest measure to assess oxygenation of blood and it is widely used in intensive care unit (ICU). But patients in ICU sometimes experience restlessness and involuntary activities which interrupting the continuity of observation of oxygen saturation. It happens in constrained patients frequently, and it is less likely to detect when their fingers are in the opaque constraining gloves. More worse, these people tend to suffer pressure ulcers caused by constraint tools and oxygen clamp. Therefore, the author developed a spiral opening transparent restraint device to help maintaining a continuous observation of Oxygen saturation and reducing pressure ulcers of hands in constraint people. **Materials and Method:** The main body of the restraint device is a transparent soft plastic cylinder with 25 cm long, 10 cm diameter. And the plastic cylinder was covered with 0.5 cm diameter vent holes all over. The bottom lid has threads which are able to get a good grip, and the upper opening is a double-layer of cotton constraint belt. A total of 62 patients who used constraint tools on hands were involved in this study, and then divided into observation group and control group according to random numbers. The observation group used this restraint device, and the control group used ordinary restraint device, and the other measures in the two groups are the same. **Result:** The number of interruptions in oxygen saturation monitoring not for medical reasons, the incidence of hand pressure ulcers caused by constraints, timeliness of hand pressure injures detection was

compared between the observation group and the control group, and all have statistical significance ( $p < 0.05$ ). **Conclusion:** Application of spiral opening transparent restraint device can improve the safety of finger vein oxygen saturation monitoring, and reduce the hand pressure injures, and it help nurses to find hand pressure injures timely.

### EXPERT CONSENSUS ON NURSING CARE OF PATIENTS UNDERGOING INTRA-AORTIC BALLOON PUMP COUNTER PULSATION AFTER CORONARY ARTERY BYPASS GRAFTING

**Li Shi; Qingyin Li; Meng Yu; Feifei Zhuang; Lin Zhang**  
**China**

**Objectives:** To provide nursing standard for the placement of intra-aortic balloon pump (IABP) after coronary artery bypass grafting, and to guide the best clinical nursing practice. **Methods:** Literatures at home and abroad were retrieved and key informant interviews were conducted. Expert Delphi mail questionnaire were developed according to the key issues of whole nursing care of IABP after coronary artery bypass grafting. Using two rounds of Delphi method and expert meeting, each item was revised and adjusted combined with the objective evidence and expert opinion. After setting the weight, the consensus was eventually formed. **Results:** Experts agreed on 61 items under six dimensions of nursing care for patients undergoing IABP after coronary artery bypass grafting. The six dimensions included preevaluation before IABP placement, nursing cooperation in IABP placement, monitoring, and management after IABP implantation, observation, and nursing in complications, nursing cooperation in IABP removal, and health education. **Conclusion:** Establishment of a preliminary clinical practice of IABP assisted nursing after coronary artery bypass grafting will provide reference for clinical nursing. **Keywords:** Coronary artery bypass grafting, Intra-aortic balloon pump counter pulsation, nursing, expert consensus.

### EXPERIENCE WITH NEW TECHNOLOGY IN A CENTRALIZED INTENSIVE CARE UNIT

**Marija Simic; Marija Momcilovic; Jagica Jovanovic; Suzana Jankovic**  
**Serbia**

**Introduction:** Clinic for anesthesia and intensive therapy is a new clinic that opened in February 2018 within new complex of Clinical Center Nis which was built according to most modern standards. Although it is the youngest clinic in Clinical center, the most critical and most demanding patients who need constant care and monitoring are treating in it. In a centralized intensive care unit (ICU) the bed capacity is 39 beds for the reception of patients from all surgical branches: abdominal surgery, chest surgery, vascular surgery, urology, orthopedics, and neurosurgery. Depending on pathology of disease, patients are placed in predicted complex of centralized ICU. Continuous monitoring and care of extremely demanding and critical patients requires well-trained and qualified staff of nurses which, in accordance with rapid progress and the development of techniques and technology in medicine, must be subjected to continuous education for work with new technology that is applied in our ICU. **Objectives:** In the ICU, there is a central monitoring that is essential for nurses to have an insight into condition of all patients and their vital parameters, as well as any reported deterioration of the condition that the monitoring signals. In addition to noninvasive monitoring (monitoring of pulse, oxygen saturation, blood pressure, body temperature, Bis monitoring, and Masimo monitoring of pulse oximetry), the standard of our ICU for critically ill patients is continuous invasive monitoring that includes: invasive monitoring of arterial blood pressure (introduction of the arterial cannula monitoring of blood pressure and more frequent blood sampling for gas analysis, all for the purpose of indirect indications of minute volume of the heart, respiratory variations, and electrolyte imbalance); invasive monitoring of central venous pressure; Invasive monitoring of intracranial pressure for patients with low Glasgow coma score; Lidco monitoring (for monitoring blood



volume in the body and adequate oxygenation of all organs); Vigileo monitoring (for monitoring complex hemodynamic data in a simpler way); Cardio Q monitoring (for determining key parameters of the cardiac function in real time, based on measurement of aortic blood flow without the need for arterial or central venous access). For easier monitoring of fluid replacement, antibiotic therapy, sedation, and analgesia, as well as the continuous use of enteral nutrition, nurses have been trained and expertly trained to work with the most modern infusion pumps, perfusion syringe pumps, and volumetric pumps for enteral nutrition. Education for working with the most modern ventilators for mechanical ventilation and noninvasive ventilation had to be attended by both anesthesiologists and nurses/anesthetists, all with the aim of safely managing the technique and the ability to respond in the right way at a time when a patient's condition is worsening or the announcement of one of the patients alarm on the device. **Conclusion:** Despite the many years of experience of nurses working in the ICU, and taking care of patients 24 hours a day, nursing and physician education is continually being conducted for all new technology that is applied in our ICU in order to provide the patients with the safest, highest quality, and continuous health-care and treatment. Despite the enormous volume of work and the demands of critically ill patients, the nurse is a much easier job with the use of modern care and treatment equipment. Although initially there was resistance to changes and demands to keep the old way of functioning, nurses only realized after training for work with new technology and their application that they were much easier job despite the enormous volume of work and requirements of critically ill patients for care, treatment, and diagnosis. **Keywords:** modern technology, centralized intensive care unit, nurse, experience, education.

### STOP SEPSIS CAMPAIGN IN CROATIA

**Jelena Slijepčević**

**Croatia**

Sepsis is a global healthcare challenge with high morbidity and mortality that can be reduced

through proper prevention measures, early recognition and initiation of the proper treatment and interventions. Croatian Nurses Society of Anesthesiology, Resuscitation, Intensive Care and Transfusion (CNSARICT), has 2014. signed World Sepsis Declaration and join to the world's leading nonprofit organization for the fight against sepsis —Global Sepsis Alliance. With this step, nurses in Croatia have committed themselves to make some changes in the field of sepsis relating to prevention, early recognition, improving sepsis awareness. The ultimate goal was to reduce the number of diseased and deceased patients with sepsis. CNSARICT was founded in 2014. The “Stop Sepsis” campaign, in which nurses conducted many activities, has raised awareness of sepsis among citizens and professional healthcare workers. And, most importantly, nursing activities led to a decrease in morbidity and mortality from sepsis in Croatia. The Global Sepsis Alliance has recognized our achievements and results, and awarded the nurses in charge of this campaign with the Global Sepsis Award in 2017 for the great contributions in a field of sepsis prevention. Through this presentation, we will show the preliminary results of the work and achievements of the campaign “Stop Sepsis” compared to the previous days. **Keywords:** sepsis, prevention, awareness, intensive care nurse, campaign.

### POSTOPERATIVE NURSING PROCEDURES IN RECOVERY ROOM

**Mirela Stefanovic; Gutovic Miljana**

**Serbia**

Recovery room or postanesthesia care unit is a room/ward in Clinic for anesthesia and intensive therapy which is located at the operating theatres level and it is designed, staffed, and equipped for the close observation and care of recently operated patients who may be unconscious or unstable postoperatively. They are monitored several hours there to ensure recovery from anesthesia, physiologic stress of surgery, prevent postsurgical complications—for example, aspiration and suffocation, identify arrhythmias, hypotension, and other conditions and/or acute

decompensation of preexisting conditions, and once stabilized they are transported to a ward or at the intensive care unit (ICU). **Initial Care:** The recovery room nursing staff provides constant care to patients immediately following surgery when they are still under the effects of anesthesia. This may be a time frame anywhere from 30 minutes to a few hours until the patient is stable enough either to be transported to his hospital room or at the ICU. The recovery room nurse connects the patient to devices such as cardiac monitoring equipment (both noninvasive and invasive monitoring), the respirator for mechanical ventilation if the patient has a need for respiratory support and to intravenous therapy for fluids and pain medication. **Patient Monitoring:** Patient observation is an essential role of the recovery room nurse. On a regular basis, she takes the patient's vital signs, such as blood pressure, pulse, temperature, and blood oxygen levels. Also, she monitors the condition of the drains and if the patient is still intubated and on mechanical ventilation she starts slowly with the patient's waking. The nurse ensures also that the patient is breathing properly and administers oxygen when needed. Because general anesthesia can cause a patient's core body temperature to drop several degrees, retaining body heat to prevent hypothermia and encourage good circulation is also an important part of recovery room care. Patients may be wrapped in blankets warmed in a heater or covered with a forced warm-air blanket system to bring body temperature back up to normal. Recovery room nurses must react rapidly to signs of negative physical changes, calling for assistance, and beginning cardiopulmonary resuscitation if necessary. **Pain Intervention:** The nurse observes patients to assess their comfort level, asks patients about their level of pain, and administers pain medications that have been prescribed. She notifies the physician if more pain medication appears to be needed. The nurse must be able to use patient-controlled pumps, and intravenous and epidural infusions. **Additional Duties:** Recovery room nurses make complete notes

on the list for postanesthesia surveillance, and communicate information in verbal or written form to other postanesthesia care unit (PACU) nurses and to physicians. They complete any forms required by the facility. Recovery room nurses must have excellent observation skills, be able to think critically, and be able to make quick and effective decisions.

## PERCUTANEOUS TRACHEOTOMY IN THE INTENSIVE CARE UNIT

**Emina Stojanovic**  
**Serbia**

Percutaneous tracheotomy (PT) is a tracheal opening procedure performed in intensive care unit (ICU) for the purpose of ventilation, oxygenation, and respiratory care. The first PT in the general hospital Krusevac was done in 2009. In the period from 2009–2017, 53 PTs were performed for patients in ICU. There are numerous advantages over surgical tracheotomy: the frequency of sinusitis is significantly reduced; less post-intubation damage to the larynx; prevention ventilator associated pneumonia (VAP); easier separation from the respirator; a much better respiratory toilet and healthcare. For a safe procedure, team work is required. The procedure is carried out by anesthesiologists and at least three doctors are needed, with the assistance of anesthesiologists and ICU nurses. During the procedure it is necessary to prepare the instruments and the patient. After the procedure, the patient is attached to the respirator in ICU. In comparison to classical surgical tracheotomy, PT in recent years has become a method of choice in patients who are on mechanical ventilation. The intervention is not complicated and fast, the procedure itself takes about 15 minutes, infections occur very rarely, and after removing the cannula, the site of the trachea-stoma is very rapidly healed. It provides quality healthcare for patients in the ICU provides easier separation from the respirator, shortens the stay time in the ICU, and therefore less costs of treatment. **Keywords:** percutaneous tracheotomy, ICU patients, healthcare, patient.

## THE EFFECT OF SIMULATION METHOD ON INTRAMUSCULAR INJECTION ADMINISTRATION TO VENTROGLUTEAL SITE KNOWLEDGE

Serpil Akbaş Sü; Nesime Demirören

Turkey

**Introduction:** Although the most reliable region for intramuscular injection (IM) administration is the ventrogluteal site (VG), it is indicated that the nurses preferred the dorsogluteal site (DG) in IM injection administration. The reason for this is that the knowledge and skills of the nurses in using the VG site are not sufficient and therefore they are reluctant to inject into this site. In nursing schools, injecting technique is taught to VG region, but students rarely observe this technique practically. Nursing students who do not have the opportunity to administer IM injection to the VG region during clinical practice learn this skill by applying it on basic models. In this study, it was aimed to evaluate the effect of the simulation method on the knowledge of nursing students on IM administration to the VG site.

**Materials and Methods:** The study was conducted with 30 volunteer students in the nursing department studying in their final year. The data of the pretest–posttest single group quasi-experimental study were collected from 14 to 30 April 2017 using the questionnaire form before and after the simulation training. In the analysis of the data, Wilcoxon test was used for the number, percentage, standard deviation, and non-parametric tests. **Results:** It was seen that 90% of the students whose age average was  $22.03 \pm 0.96$  were female, 73.3% voluntarily selected nursing profession, 40% preferred nursing because it was easier to find a job, and 90% administer an injection into VG region during training. There was a significant relationship between presimulation score averages ( $14.80 \pm 2.55$ ) and postsimulation score averages ( $17.13 \pm 1.88$ ) ( $p < 0.01$ ).

**Conclusion:** As a result of this study, it was determined that the simulation method was effective in increasing nursing students' knowledge of IM injection administration to the VG site.

**Keywords:** Simulation, ventrogluteal injection, nursing student, knowledge.

## ROLE OF ULTRASONOGRAPHY COMBINED WITH WATER INJECTION IN REAL-TIME DETECTION OF THE LOCALIZATION OF THE NASO-JEJUNAL TUBES

Jianhua Sun; Qing Zhang; Hailing Guo; Hong

Sun; Xiaoting Wang

China

**Introduction:** Early enteral nutrition to critically ill patients has been shown to decrease intestinal bacterial translocation, and improve clinical outcomes. However, in critically ill, feeding intolerance frequently occurs, which may result in impaired delivery of nutrients and aspiration. Postpyloric feeding catheters were recommended in patients at high risk of aspiration. Current techniques for placement of naso-jejunal tubes are complex, time consuming, and improvements in feeding tube placement techniques are required. The present study showed a new method of naso-jejunal tubes placement. **Methods:** This study was conducted from November 2016 to October 2017 in intensive care unit (ICU) of Peking Union Medical College Hospital in China. Critically ill patients who had the indications of the placement of naso-jejunal tubes were collected. Ultrasonography combined with water injection was used to guide the placement of naso-jejunal tubes, as the figure showed. **Results:** A total of 80 patients were included in this study, 74 patients (92.5%) were successfully positioned at the first insertion. The duration of the placement of naso-jejunal tubes was 25 (20, 38.75) min. There were no complications during the process of the placement. **Conclusions:** Ultrasound combined with water injection is a simple and convenient method to guide the placement of naso-jejunal tubes at bedside.

## CARING FOR THE FRAIL ELDERLY PATIENT IN INTENSIVE CARE UNIT: A FUTURE CHALLENGE FOR CRITICAL CARE NURSES

Rósa Thorsteinsdóttir

Iceland

The global population is aging. Studies show that the mean age of patients admitted to the intensive care unit (ICU) has been increasing over the last decade. It is forecast that in the

European Union 24.4 million people will be older than 85 years in 2040, more than doubling from the 10.4 million seen in 2010. In parallel, the rates admission of very elderly patients to ICU have increased, currently corresponding to 15% of all ICU admissions. Given limitations in ICU bed availability; this poses challenges to the ICU triage decision-making process. The concept of clinical frailty describes a state of reduced physical, physiologic, and cognitive reserve which is associated in ICU patients with increased risk of mortality and adverse outcomes. As many as one-third of adult critically ill patients admitted to the ICU have been shown to be screened as frail, with the prevalence increasing with older age. While the prevalence of frailty may naturally increase with age, it is important to recognize that frailty and ageing are not synonymous. Critical care nurses are faced with quite some challenges when caring for the aging patient. It is important to address the patient-specific needs regarding the systemic changes. Each major body system presents its own unique challenges and a comprehensive understanding of these changes is necessary to effectively care for this patient population. In this presentation we will look at the major challenges critical care nurses face when caring for an elderly frail patient in ICU, including psychological aspects; physical aspects like nutrition, immune changes, respiratory and cardiovascular conditions, immobility, and other relevant conditions.

## **SURVEY AND ANALYSIS ON CORE COMPETENCIES OF INTENSIVE CARE UNIT SPECIALTY NURSES IN CHINA**

**Yongming Tian; Yu Xu**  
**China**

**Introduction:** The rapid development of medical technology and the application of information-based monitoring equipment have placed higher demands on the quality of intensive care unit (ICU) nurses and their core competence. The cultivation and use of ICU specialty nurses has been a hot topic in the nursing field in recent years. The core competence of ICU specialty nurses plays an important role in their personal and professional

development. While the standardization and evaluation system of nurses' core competence in China is still in urgent need of development. How to improve the core competence of ICU specialty nurses in China is imminent. The study aims to investigate the impact of ICU specialist nurse training on their core competencies and to provide the references to the development of training foundation in China. **Materials and Methods:** Nurses who were trained and awarded certification by the ICU training foundation of West China Hospital were asked to answer the self-designed questionnaires which included nine dimensions and 31 items. Convenience sampling was adopted and all data were computer-analyzed using an SPSS for windows 17.0 program. **Results:** 241 nurses from 19 provinces in China were evolved in our study. The average score of each item was ( $3.84 \pm 0.71$  vs  $4.18 \pm 0.69$ ,  $p > 0.05$ ), the score of professional ethics, professional knowledge of critical care, nonverbal communication skills were improved after the ICU specialist nurse training ( $p > 0.05$ ). The score in the management ability, teaching ability, and research ability has no statistically significant ( $p > 0.05$ ). **Conclusion:** The training of ICU specialist nurses has achieved certain results in cultivating their core competencies, especially in improving their knowledge and professional skills. However, there are some problems in the cultivation of other core competences such as their management, teaching and research ability. This may be related to the existing training system in our country. Through this survey, we will enhance the quality and methods of training for ICU specialty nurses in order to improve their core competencies.

## **RELATIONSHIP BETWEEN INDIVIDUALIZED CARE PERCEPTIONS AND MORAL DISTRESS OF INTENSIVE CARE NURSES**

**Işık Meryem Türkan; Gülay Yıldırım**  
**Turkey**

**Objective:** The aim of this study was to evaluate the moral troubles and individualized care perceptions of intensive care nurses and to determine the relationship between them. **Materials and Methods:** This descriptive study was conducted

with 128 nurses working in intensive care units of a university hospital. Data were collected using an "Information Form," "the Moral Distress Scale," and "the Individualized Care Scale-Nurse Version." Data were analyzed with frequency, percentage, mean, standard deviation, Pearson's Chi-square test, and Spearman rank correlation coefficient. **Results:** The average age of the participants was 28.64±5.41, 73.4% of them were female, 78.1% had bachelor's degrees and 64.1% worked in intensive care units readily. Their average duration of professional experience was 6.38±4.69 years, and they worked in their current intensive care units for 3.25±0.28 years on average. Among the nurses, 78.9% said that there was staff shortage, 54.7% said that there was shortage of nurses and caregivers, and 35.9% stated that the physical characteristics were not suitable for care in the intensive care units they worked. Out of the nurses, 83.6% said that they had received training in ethics in nursing and 93% said that they were thinking of resigning. The mean total score of the individualized care scale was 59.55±15.06, and the subscale mean scores of the individualized care scale were 7.64±5.68 for clinical situation, 6.23±2.26 personal life situation and 6.96±1.91 for decisional control. The mean score on the moral distress scale was 77.03±46.96. It was determined that the intensive care nurses' Moral Distress Scale total mean scores were low, and there was no significant relationship between the Individualized Care Scale and subscale items score averages ( $p > 0.05$ ). **Conclusion:** It was determined that the nurses' moral distress was not too high and their individualized care perceptions were good, but there was no relationship between increased moral distress and giving more importance to the individuality of patients in care interventions. **Keywords:** intensive care nurse, Moral Distress Scale, Individualized Care Scale-Nurse Version.

### **SATISFACTION PERCEPTION OF PATIENTS WHO RECEIVE WARFARIN THERAPY TREATMENT**

**Ayşe Uçar; Selda Arslan**

**Turkey**

**Introduction:** Warfarin is used orally for the prevention or treatment of thromboembolic events.

Despite its vital importance and widespread use, its therapeutic range is narrow and treatment efficacy is dependent on many factors; therefore, regular blood tests are required.

**Materials and Methods:** The present study was conducted using descriptive and correlation methodology. Carried out in a university hospital's cardiology and in cardiovascular surgeon polyclinics and clinics in Konya/Turkey, a sample of 192 patients was selected for participation based on the study criteria. A questionnaire consisting of 20 questions and the Duke Anticoagulation Satisfaction Scale (DASS) were used to collect the data. SPSS 22 package software was used to analyse the following data: number, percentage, and mean and independent *t*-test. The Mann Whitney U test and Kruskal-Wallis test was used for dual groups, and one-way variance analysis for triple groups. A multiple regression (backward) analysis evaluated the variables that influenced the satisfactory anticoagulant level. Approval of an ethics committee, permission of the institutions was obtained preceding data collection.

**Results:** The average age of the individuals surveyed was 59.44±13.50 years; 66.1% of the participants were women; 82.8% were married, and 59.9% graduated from primary school. The mean score of the participants in the DASS was 61.71±19.34; 25.27±10.32 for limitations; 22.01±10.65 for burdens and difficulties; and 14.4±6.65 for the positive effects subscales. There was no significant relationship between Time in therapeutic range (TTR) and satisfactory anticoagulant efficacy in patients. Based on multiple regression analysis, gender, educational level, place of living, cohabitants, income status, adverse event experience, use of drugs that increase the effect of warfarin, duration of warfarin use, and the reason for the use of warfarin had significant impacts on the DASS total score and/or subscale scores ( $p < 0.05$ ).

**Conclusions:** The results showed that the satisfaction level of patients related to warfarin use was not low. Establishment of specialized anticoagulation clinics and a multidisciplinary anticoagulation management team composed of physicians, nurses, dieticians, and pharmacists along with periodic

training and follow-up of the patients under the leadership of a nurse and evaluation of treatment arrangements are recommended.

**Keywords:** nurse, perception of satisfaction, treatment, warfarin.

### THE EFFECT OF METHODS USED IN HAIR CARE OF INTENSIVE CARE PATIENTS ON HEMODYNAMIC PARAMETERS

**Gulay Altun Ugras; Meryem Turkan Isik;**

**Hasan Serinol**

**Turkey**

**Introduction:** Although hair care is a routine practice in patients hospitalized in intensive care units (ICU) for a long time, it can cause changes in hemodynamic parameters, especially in patients with mechanical ventilation, depending on the position given during the procedure. **Objective:** The aim of this study was to determine the changes in hemodynamic parameters that may occur due to the position of patients with mechanical ventilation during hair care given by washing hair with shampoo in bed or by using hair bonnets with shampoo, and to determine the reliable method of hair care in patients hospitalized in ICUs. **Methods:** The sample of this randomized controlled interventional study consisted of 60 patients with mechanical ventilation admitted to the Anesthesiology and Reanimation ICU of a state hospital between October 2017 and May 2018. The patients were randomly assigned to groups of hair bonnets (30 patients) and shampoo hair wash (30 patients). The patients' hemodynamic parameters such as systolic blood pressure (SBP), diastolic blood pressure (DBP), heart rate (HR), and peripheral oxygen saturation (SpO<sub>2</sub>) were measured before, during, at the end of hair care and at the fifth, 15th and 30th minutes after hair care. Data were analyzed using descriptive tests, *t*-test for independent groups and repeated measures analysis of variance (ANOVA). **Results:** In both methods of hair care, the patients' SBP, DBP, and HR levels were elevated while SpO<sub>2</sub> value decreased during the hair care given to the patients. The SBP of the patients whose hair was washed with shampoo was significantly higher

than that of the patients given care with hair bonnets during and at the end of hair care. The DPB and HR levels, on the other hand, were significantly higher in patients whose hair was washed with shampoo than in those given care with hair bonnets only during care. Finally, it was found that there was no difference between SpO<sub>2</sub> values in the two methods of hair care.

**Conclusion:** The results revealed that hair bonnets used in hair care had less effect on hemodynamic parameters during care than washing hair with shampoo and they can be safely applied in ICU patients with mechanical ventilation.

**Keywords:** hair care, hair bonnet, nursing, hemodynamic parameters.

### EDUCATION OF NURSES AND PHYSICIANS IN UNIVERSITY HOSPITAL CENTER "SESTRE MILOSRDNICE," ZAGREB ON CARDIOPULMONARY ARREST AND RESUSCITATION

**Sandro Vidmanić; Sabina Babic; Adriano**

**Friganovic; Nikolina Vratan**

**Croatia**

**Introduction:** Healthcare workers education is one of the most important parts in quality improvement and efficiency of caring for critically ill patient or patient with cardiopulmonary arrest. High level of theoretical knowledge is necessary for practical skill training. Healthcare workers with high-quality training and education are important members of resuscitation team and have great influence on quality of resuscitation process and outcome. **Materials and Methods:** Quantitative descriptive multi-centric study has been conducted. The target population has been nurses and physicians from University Hospital Centre "Sestre milosrdnice" Zagreb (Croatia). Data has been collected in the period from January to March 2018. Evaluation of theoretical knowledge has been assessed via questionnaire prepared for this study divided in three parts. **Results:** The sample was 305 nurses and physicians, 255 (83.6%) questionnaires has been used in further research. Sample consists of 199 nurses (48.7%) and 56 physicians (22.0%). Result of the questionnaires in the first part (ABCD approach and airway) was 76.5%, in second

part (resuscitation) was 69.2%, and in third part (defibrillation) 66.4%. Overall results were 70.7%. **Conclusion:** Science of resuscitation has constantly develop and there is need for permanent education in theoretical and in practical ways. Remodeling of healthcare workers education is the key issue in the assurance of good and quality theoretical and practical education in the field of emergency medicine and assurance of safe and quality care.

### **ACUTE RESPIRATORY DISTRESS SYNDROME PATIENTS SURVIVING AND THRIVING: EARLY APPLICATION OF THE EVIDENCE MATTERS**

**Kathleen Vollman**

**USA**

**Introduction:** With the acute respiratory distress syndrome (ARDS) definition changing, clinicians are able to design and use research studies specifically based on the severity of lung injury. Results of these trails on ventilator modalities, fluid management, prone positioning, and pharmacological treatment provide the nurse with targeted care practices to positively impact mortality and functional outcomes. **Methods:** The session begins by outlining the new definition and exploration of the pathophysiologic processes seen in ARDS. A critical analysis of multidisciplinary evidence-based supportive treatments is organized and discussed. **Results:** Using a structured technique of the eight P's; prevention, positive end-expiratory pressure (PEEP), pipes & pump, paralysis, positioning, protein, and protocolized care the major supportive management strategies are outlined. **Conclusion:** The ARDS patient is complicated and nurses need to understand the new evidence and be able to readily move it into practice to ensure the ARDS patient not only survives but is able to return to a meaningful life as soon as possible.

### **TARGET ZERO: EVIDENCE-BASED NURSING CARE TO REDUCE HOSPITAL ACQUIRED INFECTIONS**

**Kathleen Vollman**

**USA**

**Introduction:** Healthcare acquired infections (HAI) are the most frequent result of unsafe

care worldwide and a preventable injury. The rate of device use in the United States is similar in volume to the international community but device related infections are much higher in The International Nosocomial Infection Control Consortium (INICC) which comprises 43 countries in Latin America, Asia, Africa, and Europe. The use of bundle technology has provided direction on how to prevent HAI's and the spread of resistant microorganisms. **Methods:** This session will explore modes of transmission in order to outline a strategy for source control. An in-depth look at evidence-based nursing care practices that impact outcomes including, prevention practices for eliminating catheter-associated urinary tract infection's (CAUTI) and Central Line Associated Blood Stream Infection's (CLA-BSI) as well as ventilator and hospital acquire pneumonia are outlines. **Results:** Numerous studies have shown that education and skill building is not enough to effect long lasting change. Multimodal strategies must be utilized that look specifically at the resources/devices to help deliver the care and the systems or process design around the care to make it easy for the clinician to achieve the practice in a complex working environment. A focus on development of evidence-based care practices and protocols and the examination of resources and systems that support source control and reduce transmission will be discussed. **Conclusion:** We need to take ownership of one of the major roles of a professional registered nurse: prevent the spread of resistant microorganisms and the development of healthcare acquired infections.

### **POSTOPERATIVE NURSING INTERVENTION IN SURGICAL TREATMENT MYASTHENIA GRAVIS**

**Maja Vuckovic; Sanja Jelic**

**Serbia**

Myasthenia Gravis belongs to a group of neuromuscular diseases and the group of autoimmune diseases, where the body itself produces antibodies against receptors on the muscles, preventing the transfer of irritations from nerves to muscles. It leads to a rapid fatigue of muscles at rest and during exertion. A diagnosis is set

on the basis of clinical features, pharmacological tests, electrophysiological tests, blood tests for antibodies, radiography and thoracic scan, and magnetic resonance in order to visualize the thymus. Generalized form of autoimmune myasthenia gravis is now the most common indication for thymus surgery (thymectomy). Surgical treatment of myasthenia gravis is widely accepted only in the last decades of the last century, as the favorable effect of thymectomy on the course of generalized form of this disease. Thymectomy isn't only a superior treatment option, but it avoids the side effects of drug therapy (corticosteroids, cytostatics). The effects of thymectomy are the best if it is carried out within 6 to 12 months from the onset of the disease, when the improvement can be achieved in 90% of the diseased. In recent years a contemporary technique of video-assisted thoracoscopic thymectomy is most frequently applied. This technique occurs as the result of new technical possibilities that accompany the development of endoscopic surgery. Upon receipt of the patient in the Intensive Care Unit, a nurse trained to monitor patients after thoracotomy carries out 24-hour supervision and control of vital parameters with standardized lists of records in intensive care patients. The nurse regularly informs the surgeon on duty on the postoperative condition of the patient and regularly fills in medical records. The nurse monitors the pulse, the blood pressure values and saturation, diuresis. The continuous oxygenation is implemented and venous patency for replacement of fluid is maintained, as well as the antibiotic therapy and hydrocortisone therapy in the postoperative period of treatment. The nurse assesses whether there are signs of complications, including cyanosis, dyspnea, and acute pain. Increase of temperature or leukocytes may indicate an infection, a rapid pulse and pallor may indicate internal bleeding. Operative wound should be controlled in case of accidental bleeding. Monitor the drain position and the amount of drained fluid-blood. Analgesia is needed after the surgery. Patients should start with exercises early in the postoperative period. Remission appears with patients without thymoma in 35% of cases, if it is performed in the

first year of setting the diagnosis. The answer to thymectomy is the maximum within three years from the date of surgery thymectomy. Timely indications, good preoperative preparation, adequate surgery, anesthesia, and postoperative patient monitoring are the measures which are implemented according to standardized protocols. The nurse is an important part of the team in the surgical treatment of myasthenia gravis.

## EFFECT OF MODIFIED TECHNIQUE OF SUBGLOTTIC SECRETION ASPIRATION

**Limei Wang; Xueying Liu; Rong Wang; Han Sheng; Huijie Yu  
China**

**Background:** Subglottic secretion is an important measure to reduce ventilator-associated pneumonia (VAP). Although, the central suction system is continuously sucking to solve this problem, it is difficult to provide stable sucking pressure, which causes secretion hard to remove. Therefore, we improved the technique of subglottic secretion aspiration. **Materials and Methods:** Improvement of suction tool: this design is based on the disposable sputum sampling bottle. 1) change the length of the original suction pipe to 10 cm; 2) the diameter of the suction pipe was increased to 12#; 3) a ventilation hole with diameter of 0.3 cm are added to the suction pipe at 0.1 cm from the top. Improvement of suction mode: intermittent suction on the basis of continuous suction. 86 patients with tracheotomy and mechanical ventilation were involved in this study. Patients are divided into two groups according to the random numbers. Patients in observation group using improved technique and the control group using conventional method, then compare to the incidence of two groups of VAP. **Result:** The amount of secretion suction in the observation group was more than that of the control group, and it has statistical significance ( $p < 0.05$ ). Also, there was a statistically significant difference in the incidence of early onset VAP in the two groups ( $p < 0.05$ ). **Conclusion:** Improved technique of subglottic secretion can increase the amount of secretion suction and reduce the early onset of VAP.



## THE QUALITY IMPROVEMENT OF RESPIRATORY SAFETY RECOVERY IN THE ELDERLY PATIENTS AFTER GENERAL ANESTHESIA

Rong Wang; Limei Wang; Han Sheng; Jianmei Xia; Xueying Liu  
China

**Background:** The respiratory recovery is the key to a successful recovery. Due to the deterioration of organ function and the slow metabolism of anesthetic drugs, even though the endotracheal intubation has been removed according to the standard, there were also breathing forgotten and respiratory depression caused by the effects of anesthetic drugs in the initial stage of removal of tracheal catheter, which may endanger the patient's life. In order to improve the safety of respiratory resuscitation in such patients, the quality improvement was carried out before and after the tracheal tube removing. **Materials and Methods:** Improved method —When the patient is evaluated for pulling the tube standard, we monitored the patient's breath for two to three times (5–10 S) with the carbon dioxide monitoring. And the recorder was used to remind patients to breathe in the first 15 minutes of removal of tracheal catheter. The improved 43 cases were compared with the 45 before the improvement the other recovery measures were the same. **Results:** In the 15 minutes after pulling the tube, the  $SPO_2$  of improved group was higher than the preimprovement group, and the number of respiratory forgetting was lower than the preimprovement group,  $p < 0.05$ . **Conclusions:** When the tracheal tube is removed, add exhalable  $CO_2$  monitoring can be used to evaluate again the degree of respiratory recovery objectively and accurately and the removal of tracheal catheter standards is more accurate. After pulling out the tube, the recorder reminds patients to breathe can reduce the number of respiratory forgetfulness. The improved measures have effectively improved the safety of the respiratory resuscitation of the elderly patients after general anesthesia.

## APPLICATION AND EXPERIENCE OF BEDSIDE ULTRASOUND-GUIDED NASO-ENTERAL TUBE PLACEMENT IN CRITICALLY ILL PATIENTS

Chunyan Wang; Huan Liu; Aiping Du; Yongming Tian  
China

**Introduction:** To explore the safety and feasibility of bedside ultrasound-guided nasoenteral intubation in critically ill patients. **Methods:** 82 patients were included in this research from January 2016 to December 2017. The operation procedure was as follows: fasting for 6–8 hours, intramuscular injection of 10 mg Metoclopramide and orally or tube feeding of 5 mg citric acid Mosapride tablets 30 minutes before the operation, patient of abdominal distension should do the gastrointestinal decompression first and then removal the gastric tube; The Freka intestinal tube was implanted into the intestine under ultrasound guidance. The success was confirmed by X-ray and digestive juice pH. **Results:** 78 cases of 82 cases were successfully inserted, four cases failed, the success rate was 95.1%. All the patients were well tolerated and no complications occurred after enteral nutrition. **Conclusion:** Bedside ultrasound-guided nasoenteral intubation is safe and feasible, it has advantages of low cost, low pain, and high success rate, it is worthy of clinical promotion and application. However, for some patients with special circumstances, the method also needs other ways of assistance.

## IMPACT OF IMPLEMENTING INTENSIVE CARE OUTREACH NURSE IN FOUR UAE HOSPITALS

Ged Williams  
UAE

**Introduction:** The Abu Dhabi Health Service (SEHA, UAE) has an integrated electronic medical record (Cerner) with online MEWS/PEWS/MOEWs and automated alert system. However, the efferent (response) arm of the rapid response system (RRS) has been inadequate. **Study Objectives:** Implement a designated Intensive Care Outreach Nurse (ICON) role to enhance the RRS across four teaching hospitals concurrently.

This role builds on similar roles used elsewhere. **Methods:** A survey was developed to understand the needs of the new ICONs. A four-week induction and training process, informed by the survey, was put in place to prepare the ICONs for the role. The ICONs commenced in four hospitals in April 2016 working 7 pm–7 am × 7 days/week and then extended to 24/7 from April 2017. **Results:** Areas of concern/anxiety for the ICONs were challenging and unfamiliar situations, internal disaster management, managing and prioritizing multiple calls concurrently and cooperation and support from medical staff. Specific learning/skills identified: Care of the pediatric patients, difficult airway management, knowledge and skill in advanced practice generally. Rapid Response calls for the ICON attendance across all four hospitals were approximately 700/month with heart rate (HR), RR, SPaO<sub>2</sub>, and Systolic BP being most common triggers in descending order. 40% of patients were seen by the ICON on more than one occasion. Calls to medical ward were three times more likely than surgical wards. 98% of all calls were responded to within 15 minutes. 23 Physicians and 367 nurses responded to the postimplementation survey providing overwhelming support for the role that allowed extension to a 24/7 cover across all participating hospitals. Early results show improved recognition and response to deteriorating patients on the wards as well as reductions in Code Blue and readmission to intensive care unit (ICU). **Conclusions:** Preparation, careful planning, training, and orientation to build capacity and confidence in the ICON and other staff were essential. The ICON appears to be contributing to an improvement in recognition and management of deteriorating patients as well as improved patient outcomes. Medical and nursing staff have welcomed the initiative across all four hospitals and calling for a 24/7 service.

### REDUCING SERIOUS PATIENT INFECTIONS USING SIMPLE WHO TECHNIQUES

**Ged Williams**

**UAE**

Nosocomial infections are one of the more common preventable deaths in the hospital

setting. Yet hand hygiene practices and aseptic techniques remain below acceptable standards. This presentation demonstrates how one hospital has exceeded national benchmarks for hand hygiene and nosocomial infections by putting in place a structured program that enforced compliance to evidence-based practice and good clinical hygiene. The strategies included: reduced signage and clutter; hand hygiene safety scrub; hand hygiene audits, auditing training, and reporting as well as specific strategies in the intensive care unit (ICU) setting to improve aseptic techniques and vigilance. This presentation demonstrates that high standards of practice can align with evidence-based practice to prevent unnecessary and deadly infections in the hospital setting. Practical tips and tools are available to assist participants in applying these techniques easily in their own setting.

### THE SAFETY OF HIGH FREQUENCY OSCILLATION VENTILATION ON ADULT ARDS: A META ANALYSIS

**Yuchen Wu; Zhigang Zhang; Caiyun Zhang; Jinhui Tian**

**China**

**Objective:** To evaluate the efficacy and safety of High Frequency Oscillation Ventilation (HFOV) for patients with Acute Respiratory Distress Syndrome (ARDS). **Methods:** The randomized studies about the high frequency oscillatory ventilation on patients with ARDS that published in PubMed, Embase, Web of Science, the Cochrane Library, CBM, CNKI, VIP, Wan fang database were analyzed. The meta-analysis was applied using RevMan 5.3 software. **Results:** A total of 10 randomized controlled studies and 2,420 subjects included were analyzed. Meta-analysis showed the mortality rate wasn't statistically significant [RR = 1.09, 95% CI (0.86, 1.39),  $p = 0.47$ ], HFOV did not reduce the mortality of adult ARDS. But it could reduce the incidence of hypoxemia and mechanical ventilation time, and did not increase the incidence of complications such as barotraumas, acidosis, pneumothorax, and hemodynamic disorders. **Conclusion:** The present evidence shows that HFOV does not increase the mortality of ARDS. We still need a larger sample

and high-quality studies to support the result.

**Keywords:** high frequency oscillatory ventilation, conventional mechanical ventilation, acute respiratory distress syndrome, mortality rate, meta-analysis.

## DISCUSSION ON NOSOCOMIAL INFECTION CONTROL AND MANAGEMENT FROM THE POINT OF NASAL PATHOGENIC BACTERIA COLONIZATION AMONG MEDICAL STAFF

Nana Xu; Hao Wang; Min Zhou

China

**Objective:** To investigate the status and risk factors of nasal pathogenic bacteria colonization among medical staff of intensive care unit (ICU), provide guidance for prevention and management of nosocomial infections. **Methods:** From January to June 2017, we recruited the noninfected ICU medical staff with  $\geq 1$  year ICU experience in Qilu Hospital of Shandong University. We collected the general data, blood samples, nasal vestibular swab samples for bacterial culture, and the patient's pathogen results in the same period. Multivariate logistic regression analysis was used to generate the independent risk factors for the nasal pathogenic bacteria colonization. **Results:** 81 doctors and nurses were enrolled and 50 effective cases were included, 25 cases (50%) were identified with nasal pathogenic bacteria colonization. A total of 31 strains were isolated, of which 14 *Staphylococcus aureus* (45.2%), 2 Methicillin-resistant isolates, 5 *Enterobacter aerogenes* (16.1%), 4 *Clebsiella pneumonia* (12.9%), 4 *Citrobacter* strains (12.9%), 2 *Clebsiella oxytoca* (6.5%), 1 *Enterobacter cloacae* (3.2%), 1 *Proteus mirabilis* (3.2%). The above pathogens carried by medical staff were all detected in infected patients at the same time. Compared with those without pathogen colonization, the cases with pathogen colonization had significant shorter working period, longer daily bedside contacting time with patients, more frequent nasopharyngeal discomfort, and worse hand hygiene compliance (all  $p < 0.05$ ). Multivariate analysis revealed that bad hand

hygiene compliance ( $OR = 13.899$ ) and nasopharyngeal discomfort history ( $OR = 14.223$ ) were independent risk factors for nasal pathogenic bacteria colonization ( $p < 0.05$ ). **Conclusions:** The status of nosocomial infection in ICU patients is serious. It should be noticed that near half ICU medical staff had nasal pathogenic bacteria colonization. Improving hand hygiene compliance and early handling of nasopharyngeal symptoms may be beneficial for prevention of nosocomial infection.

## THE ANALYSIS OF CURRENT STATUS AND INFLUENCING FACTORS OF CRITICAL CARE NURSES' ATTITUDE TO NURSING ADVERSE EVENTS REPORTING

Yu Xu; A. Du; Y. Tian

China

**Introduction:** The occurrence of nursing adverse events is often closely related to the quality of nursing care and patients' prognosis. In intensive care unit (ICU), the patients' condition change rapidly, and the occurrence of nursing adverse events is often accompanied by serious consequences, such as prolonged length of stay in hospital and increased medical expenses, which may easily lead to medical disputes. The study aims to investigate the current status and influencing factors of critical care nurses' attitude of nursing adverse events reporting, so as to provide the reference for the management of nursing adverse events. **Materials and Methods:** The Reporting of Clinical Adverse Effects Scale (RoCAES) was used to investigate 200 ICU nurses in tertiary hospitals in Sichuan Province. Convenience sampling was adopted and all data were computer-analyzed using an SPSS for windows 17.0 program. Statistical methods include descriptive analysis and multiple linear regressions. The level of significance was  $\alpha = 0.05$  (bilateral), and  $p < 0.05$  was considered statistically significant. **Results:** The total score of critical care nurses' attitude of nursing adverse events reporting was  $(62.33 \pm 8.43)$ . The scores of four dimensions from low to high in order were the reporting purpose  $(2.02 \pm 0.74)$ , the

reporting environment (2.13±0.78), the reporting influence (2.59±0.76), and the reporting standard (2.92±0.75). Nursing jobs, the adverse events experience and work experience influenced nurses' attitude of nursing adverse events reporting ( $p < 0.05$ ). **Conclusion:** Nurses' attitude of nursing adverse events reporting in ICU was at the medium level, the overall results biased in favor of the negative, and it needed to be further improved. Nurse managers should take further measures to improve nursing safety management to improve the rate of reported adverse events in nursing, ensure the patients' safety, and improve the quality of nursing care.

### **INFORMATIZATION CONSTRUCTION ON NURSING OF CHINA: A VISUALIZATION ANALYSIS**

**Li Yao; Zhi-Gang; Jin-Hui Tian; Cai-Yun Zhang**  
China

**Objective:** To understand the status and trends of nursing information in our country and to provide references for promoting nursing information. **Methods:** Visual analysis was used to study existing nursing information literature in databases including CNKI, Wanfang, and CBM. Analyse year, region, author, cooperation situation, fund support, keywords, and other aspects. **Results:** There were 3,063 documents. The number of literature was increasing every year. However, the proportion of fund literature was relatively low, the cross-disciplinary communication was not enough, literature quality was low, and literature in different areas was not balanced. **Conclusion:** Nursing information was getting more and more attention, but the related research needed to improve the quality, broaden the breadth and pay more attention to the construction of depth and standardization. **Key Words:** nursing, informatization, visualization analysis.

### **COGNITIVE IMPAIRMENT AFTER INTENSIVE CARE UNIT ADMISSION: A SYSTEMATIC REVIEW**

**Li Yao; Nannan Ding; Zhi-Gang Zhang; Jin-Hui Tian; Cai-Yun Zhang**  
China

**Objective:** To investigate the long-term cognitive impairment after intensive care unit (ICU)

admission and provide theoretical basis for prevention and intervention. **Methods:** Pubmed, Embase, Cochrane Library, Web of Science, CNKI, CBM, and Wang Fang database were searched. Meta-analysis was performed on R software. Subgroup analysis was performed for different patients, follow-up time, and diagnostic criteria; Choose descriptive analysis for data that cannot be quantified consolidated. **Results:** A total of 27 articles were included. The sample size was 3,531 patients. The combined incidence of cognitive impairment after ICU admission was 37.52% (95% CI: 32.15–43.22), and the incidence of cognition damage within one year, one to five years, and five years after discharge was 49.31% (95% CI: 39.80–58.86); 31.73% (95% CI: 23.93–40.72); and 18.95% (95% CI: 9.30–34.79) respectively. **Conclusions:** The incidence of cognitive impairment after ICU admission is relatively high and persistent for a long time, but diagnostic criteria of cognitive impairment and follow-up time are quite different. It is necessary to develop consistent evaluation criteria and rigorous design in further original research. **Key words:** intensive care, cognitive impairment, systematic review.

### **"NO BRAINER" NEUROLOGIC EVALUATION**

**Susan Yeager**  
USA

Management of neurologic critical care patients begins with the foundation of high-quality examinations. Having these skills enables nurses to quickly identify patient baseline deficits or decompensation so early notification and intervention can occur. Included in this lecture will be an overview of commonly used neurologic tools including: Glasgow Coma Scale; Four Score coma evaluation; FAST stroke evaluation; NIH Stroke Scale, and hands on demonstration of the cranial nerve assessment that will help you engage with your conference colleagues.

### **POSTINTENSIVE CARE SYNDROME—HOW CAN WE CREATE AN IMPACT?**

**Susan Yeager**  
USA

Since the inception of intensive care unit (ICU)s in the 1960s, care has focused around treatment

of the underlying malady while working to shield the patient from the unpleasant memories of intubation and necessary procedures needed to provide medical intervention. Implemented strategies utilized then to enhance comfort and energy conservation included heavy sedation and prolonged bed rest. Recent findings suggest that this time-honored interventions can actually translate into cognitive, emotional, and physical impairments that begin during or immediately following an ICU hospitalization and can persist beyond discharge. The constellation of symptoms now discovered have been called Post-ICU Syndrome and can occur in both ICU patients and their families. The focus of this talk will be to provide an overview of Post-ICU Syndrome in patients and families as well as interventions to help mitigate the symptoms.

#### **STATUS OF INTENSIVE CARE UNIT NURSING IN CHINA: A CROSS—SECTIONAL SURVEY**

**Meng Yu; D. Huang; P. Yan; Hong Sun; Q. Li**  
China

**Introduction:** To understand the construction of critical care medicine and the present situation of the intensive care unit (ICU) nursing staff and specialist nurse training. It can provide evidence for improving the construction of critical care medicine and promoting the development of ICU nursing science in China.

**Methods:** In this cross-sectional study, Director of nursing department and the head nurse of all provinces and cities filled in the web survey about ICU nursing staff status in China 2016.

**Results:** (1) A total of 1,956 hospitals and 2,747 ICU in 30 provinces and cities of China was participated in this survey. The top of ICU number was Henan province (9.87%), and the ICU number in Grade a hospital was the highest, up to 58.50%. The hospitals were general hospital, accounting for 91.99%; (2) The comprehensive ICU accounted for 68.37%, and there were total 70,517 nurses in different provinces, the top of nurse number was Guangdong province (70.83%); the proportion of ICU male nurses in nursing staff was 9.05%; ICU nurses' turnover accounted

for 8.61%; (3) 3,504 ICU head nurses were surveyed, the age range was 19.0 to 56.0 years old, the mean age was (38.73±5.38), the professional title was mainly nurse-in-charge, accounting for 62.39%, and the proportion of Bachelor's degree head nurses was 82.48%; (4) 4,163 people attended the Chinese nursing association ICU specialty nursing certification and 12,022 people attended the provinces/autonomous regions/-municipalities directly under the central government specialty nursing certification; after participating the ICU specialty nurse training, 36.21% nurses were going to be the group leader, 27.05% be the teaching managers; the teacher of specialist nurse training were mainly nurse-in-charge, and the proportion of nurse-in-charge was 55.10%.

**Conclusions:** The ICU is developing continuously. Building the ICU nursing team and standardization of ICU specialty nurse training need to be improved and perfected in China. **Keywords:** intensive care unit, nurses, specialty nursing certification, specialized training

#### **DIRECTIONS FOR THE DEVELOPMENT OF NURSING AS AN INDEPENDENT HEALTH PROFESSION: NURSE AS THE MANAGER OF HEALTHCARE**

**Samela Zelic**  
Bosnia and Herzegovina

**Introduction:** With increasing demands for quality in healthcare, increasing workload and accountability as well as healthcare reforms, the requirements for determining domains in the nursing profession have grown, as clearly defined in the Munich Declaration (2000). Unfortunately, in the current healthcare system in most of the transition countries of the South East Europe Region, the nursing is still not adequately validated as a independent health profession.

**Aim:** Review of legislation related to the nursing practice in the Bosnia and Herzegovina in the aspects of nursing practice definition, educational standards, licensing, and possibility of workforce mobility. **Methodology:** Qualitative desktop analysis of legislation and strategic documents of the nursing. **Results:** According to the Constitutional Law in the B&H, healthcare system is under the competence of the Entities

(Srpska Republic), divided competencies between Entities and Cantons (Federation of Bosnia and Herzegovina), respectively within the competence of the Brcko District. The Government of the Federation of Bosnia and Herzegovina adopted the Nursing and Obstetrics Act (2013) and clearly defined the nursing practice domains, in line with the European Union (EU) directives. The nursing practice in Srpska Republic and Brcko District has been defined in the healthcare laws. **Conclusions:** In all reviewed legislative acts there are still insufficiently defined domains in the nursing profession. By resolving this legislative incompleteness, the progress of nursing would accelerate, strengthen, and modernize the health system, which would raise the quality of healthcare to a much higher level. **Key words:** nursing, Bosnia and Herzegovina, healthcare, health legislation, nursing practice.

#### DETERMINANTS OF SYMPTOM BURDEN IN OLD PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Na Zhang  
China

**Background and Purpose:** Symptom burden is common and has a negative impact on rehabilitation and survival. However, its pathogenesis and contributing factors remain unclear. The purpose of this study was to identify factors influencing the occurrence of symptom burden and described the symptom frequency, severity, and distress in old patients with chronic obstructive pulmonary disease (COPD). **Methods:** We were enrolled patients at the lung function laboratory, respiratory clinic, and respiratory ward in Henan, China. Data were collected in face-to-face interviews using validated questionnaires and through reviews of medical records. Symptom burden uses the Memorial Symptom Assessment Scale (MSAS). Multivariate linear regression was used to examine symptom burden in relation to sociodemographic, lifestyle, clinical characteristics, self-efficacy, hospital anxiety, and depression. **Results:** The mean number of symptoms in the total sample was 11.1 (*SD* 3.6). Highly prevalent symptoms were shortness of breath

(97.5%), lack of energy (95.4%), worrying (82.1%), cough (80.4%), difficulty sleeping (72.1%), pain (68.8%), feel sad (64.6%), I don't look like myself (53.3%). Correlation was found between the symptom experience and self-care behavior ( $r = -0.233$ ,  $p < 0.01$ ), self-efficacy ( $r = -0.226$ ,  $p < 0.01$ ). Correlation with anxiety and depression  $r$  ( $r = 0.496$ ,  $p < 0.01$ ). Multiple linear regression analysis results showed that the influence factors affecting the symptom experience of the older adults with COPD were staging of disease, work before disease, the way of treatment cost and Hospital Anxiety and Depression Scale (HADS) total score. **Conclusions:** In order to improve their quality of life and satisfy their diversified service needs, the particularity of the influences should be considered, enhance their self-care behavior, self-efficacy, and reduce anxiety and depression more important.

#### IMPACT OF EARLY INTENSIVE REHABILITATION CARE IN PATIENTS UNDERGOING CARDIAC SURGERY IN A SINGLE CENTRE: A QUASI-EXPERIMENTAL STUDY

Lin Zhao; Qing Yin Li; ChunYing Huo; YunXIA Hao; Li Shi; Lin Liu  
China

**Introduction:** Early intensive rehabilitation care is seldom implemented in routine clinical scenario. The present study aims to evaluate the impact of early intensive rehabilitation care on physical capacity, respiratory function, and pulmonary function in adults undergoing cardiac surgery. **Materials and Methods:** This is an assessor-blinding quasi-experimental involving 252 cardiac surgery patients from Fuwai Hospital. Participants were divided into the experimental group and the control group before surgery. The control group received routine rehabilitation care postoperatively. The intervention subjects received, in addition to the above usual care, an earlier intensive exercise and education intervention initiated just at admission. The primary outcome focused on the 6-minute walk test (6MWT), and the secondary outcomes were the changes in the maximal inspiratory pressure (MIP) and pulmonary function tests. Mann-Whitney U tests

were used to test between—group differences. **Results:** On discharge, 6MWT distance was significantly higher in the experimental group than in the control group ( $p < 0.05$ ). Some values of pulmonary function tests such as VT, mechanical ventilation (MV), MMEF 75/25 were statistically significant ( $p < 0.05$ ). Though the scores of MIP were reduced to a similar extent in both groups, the intervention subjects performed significantly better than the control group at discharge ( $p < 0.001$ ). **Conclusions:** Implemented by nursing staff, the early intensive rehabilitation care may have a good discriminatory performance for patients undergoing nonurgent cardiovascular surgery, particularly at the physical and respiratory level.

#### EFFECT OF PERI OPERATIVE CHLORHEXIDINE BATHING ON REDUCING THE INCIDENCE OF INFECTION IN PATIENTS WITH ACUTE AORTIC DISSECTION

**Jun Zhong; Jili Zheng; Yan Xue; Jingyi Zhang  
China**

**Introduction:** Emergency surgery operation is the main treatment for patients with Stanford A aortic dissection. It is reported that infection is the most common complication after aortic dissection, and it is the main cause of prolonged hospitalization and increased mortality. Soapy water or skin disinfectant bath is an important skin preparation for the patients in the elective operation. But most of the patients with aortic dissection are unable to tolerate preoperative bathing. Some patients need urgent operation but there is no effective skin disinfection before

operation. Chlorhexidine bath or bathing can reduce the incidence of intensive care unit (ICU) catheter related blood flow infection and ventilator-associated pneumonia. It is widely used to prevent infection in ICU. Bathing by chlorhexidine wipes is a simple and easy way to clean the skin of patients with acute aortic dissection. The aim of this study is to investigate the effect of peri-chlorhexidine bathing on patients with acute aortic dissection. **Methods:** Patients with acute aortic dissection were selected from a class three hospital in Shanghai. From January 1st to June 30th, the patients were selected as the control group ( $n = 64$ ), and the patients from July 1st to December 31st were treated as intervention group ( $n = 52$ ). Patients in the control group were treated with daily bathing by clean water. In the intervention group, non-rinse skin cleansing with Chlorhexidine gluconate and nasal cavity clean were given on the day before operation and during the ICU stay on the basis of the control group. **Results:** There was no statistical difference between the intervention group and the control group in baseline ( $p > 0.05$ ). The incidence of infection, mortality, length of stay of the intervention group compared with the control group are decreased, but the difference was not statistically significant ( $p > 0.05$ ); invasive mechanical ventilation time, ICU retention time of the intervention group is lower when compared with the control group, the difference was statistically significant ( $p < 0.05$ ). **Conclusion:** Nonrinse skin cleansing with chlorhexidine gluconate and the nasal clean can be used as an effective measure for the skin disinfection of patients with acute aortic dissection.