The intensive care unit is a work environment where superior dedication is crucial for optimizing patients’ outcomes. As this demanding commitment is multidisciplinary in nature, it requires special qualities of health care workers and organizations. Thus research in the field covers a broad spectrum of activities necessary to deliver cutting-edge care. However, given the numerous research articles and education activities available, it is difficult for modern critical care clinicians to keep up with the latest progress and innovation in the field. This article broadly summarizes new developments in multidisciplinary intensive care. It provides elementary information about advanced insights in the field via brief descriptions of selected articles grouped by specific topics. Issues considered include care for heart patients, mechanical ventilation, delirium, nutrition, pressure ulcers, early mobility, infection prevention, transplantation and organ donation, care for caregivers, and family matters. (American Journal of Critical Care. 2015;24:75-86)
Caring for Heart Patients

The five main diagnoses of patients admitted to intensive care units (ICUs) in US hospitals are, in decreasing order: respiratory insufficiency/failure, postoperative management, ischemic heart disorder, sepsis, and heart failure. Patients admitted because of cardiovascular issues therefore represent a substantial portion of the ICU population. Further, more and more patients who are admitted to the ICU for noncardiac reasons have comorbid cardiovascular conditions that are likely to alter clinical management and outcomes.

Crago et al performed a retrospective study to compare the incidence of early cardiac problems between patients who reported using β-blockers and/or angiotensin-converting enzyme inhibitors before aneurysmal subarachnoid hemorrhage and patients who did not. Those authors did not find tangible proof that exposure to adrenergic blockade before aneurysmal subarachnoid hemorrhage provided protection from cardiac injury.

Looking more into additional comorbid conditions associated with cardiovascular issues, which definitely challenge delivery of critical care, Halm discusses the most accurate way of monitoring blood pressure in obese patients. Halm reviews relevant studies and notes that direct intra-arterial measurement of blood pressure should be used instead of auscultatory/oscillometric techniques, which are considered significantly inaccurate in obese patients. A second recommendation includes matching cuffs with the size and shape of the upper arm. Preferably at admission, health care personnel should measure the patient’s arm circumference midway between the shoulder and elbow and assess the shape of the upper arm. Based on anthropometric assessment, an appropriately sized cuff should be selected.

Approximately 30% to 60% of patients with heart failure experience depressive symptoms. Depressive symptoms are clinically relevant when managing these patients because they may affect the relationship between inflammation and physical signs and symptoms in patients with heart failure. Heo et al performed a prospective observational study in which they examined the association between soluble tumor necrosis factor receptor I and physical signs and symptoms and the effects of depressive symptoms on this relationship in patients with heart failure. Results show that both depressive signs and inflammation should be considered along with physical signs and symptoms in patients with heart failure, but further studies are needed to determine the exact relationship between these clinical elements.

Similarly, McGuire et al undertook a secondary analysis of 3 studies on depression and cardiovascular...
patients in the ICU. The goal was to identify symptom clusters associated with clinical depression in patients hospitalized with coronary heart disease. Three symptom clusters (cognitive/affective, somatic/affective, and somatic) were identified. After performing a hierarchical cluster analysis, the authors concluded that, compared with patients without cognitive/affective symptoms, patients with the cognitive/affective symptom cluster (anhedonia, dysphoria, guilt, suicidal symptoms, nervous irritability) had an odds ratio of 1.41 (P < .001; 95% CI, 1.223-1.631) for clinical depression. According to this study’s outcomes, clinicians should watch for clinical depression in hospitalized patients with coronary heart disease who have the cognitive/affective symptom cluster identified.

Ventilation and Sedation

Endotracheal intubation is a traumatic experience yet is often necessary during critical illness. Adequate sedation is pivotal but not always achieved. Smithburger et al assessed characteristics of patients that were associated with effectiveness of sedation by dexmedetomidine, an increasingly used sedative agent. Sedation by dexmedetomidine was prospectively evaluated in 38 patients and judged ineffective in 19 patients (50%), effective in 11 patients (29%), and not assessable because of clinical confounders in 8 patients. A lower severity of disease appeared to be associated with a higher chance of effective sedation.

In order to reduce the time spent intubated and thus reduce the risk of ventilator-associated pneumonia, a strategy of sedation breaks has become standard practice in many ICUs. Tanios et al evaluated whether the sedation strategy had an influence on the rate of unplanned extubations. A total of 92 unplanned extubations occurred in a 36-month study period in a 33-bed ICU. Patients receiving continuous sedation with daily interruption of sedatives had a significantly lower risk of unplanned extubations (1.5 events per 1000 ventilator days) than did patients receiving the intermittent sedation protocol (5 events per 1000 ventilator days) or patients without a sedation protocol (16 events per 1000 ventilator days). As such, the implementation of a straight sedation protocol can be recommended. Yet, based on a scoping review of qualitative studies, Rose et al reported several barriers that influenced weaning and adoption of weaning strategies. The most important factors that may influence weaning and adoption of weaning strategies and tools include balancing of weaning systematization against the needs of individual patients and combining subjective knowledge of the patient with objective clinical criteria.

Airway management includes a variety of practices, including oral care, endotracheal suctioning, and care of endotracheal tubes. An essential component of care of endotracheal tubes is maintaining the endotracheal tube cuff pressure within the target range of 20 to 30 cm H₂O. Avoiding excessive pressure is necessary to prevent tracheal lesions, whereas insufficient cuff pressure results in inadequate sealing of the extraluminal airway and could increase the risk of microaspiration of subglottic secretions. Microaspiration is considered the main pathogenic mechanism for ventilator-associated pneumonia, yet only a few published studies demonstrate this mechanism.

In recent years, detection of pepsin and amylase levels in tracheal aspirates has been used in research as an indicator of microaspiration. Pepsin is a biomarker for gastric aspiration and amylase is an enzyme present in saliva and thus is an indicator of microaspiration of oral secretions. In a pilot study, Sole et al assessed the presence of pepsin and amylase in tracheal secretions in adult patients receiving mechanical ventilation. Of the 13 patients, 9 were intubated with a tube that allowed subglottic secretions to be drained, 10 received synchronized intermittent mandatory ventilation, and 11 received enteral feeding through a tube distally placed in the stomach. Paired samples were taken from oral and tracheal secretions at baseline and after 4 hours. Pepsin was present in oral secretions of 9 patients and in tracheal secretions of 7 patients. As could be expected, amylase was detected in all patients’ oral secretions, but it also was detected in tracheal secretions of 5 patients. These data illustrate that microaspiration remains common in intubated patients. Further research to optimize the sealing capacity of endotracheal tube cuffs is warranted. These studies should focus on absolute sealing capacity of cuffs as well as on solid clinical outcomes (eg, pneumonia) and the time cut-off at which the device becomes clinically advantageous.

The cuff pressure of an endotracheal tube varies according to patient-related factors, environmental circumstances, and therapeutic interventions. Factors leading to increased cuff pressure include positive-pressure ventilation, ventilation with nitrous oxide, altitude (eg, during helicopter transport), and pathologic processes such as bronchospasms. Factors that may decrease cuff pressure include sedation and neuromuscular blockade, decreased core temperature, and loss of intracuff volume over...
changing patients’ position results in significant deviations in endotracheal tube cuff pressures.

Oral care is a clinical challenge in intubated patients. Many nurses find oral hygiene difficult and sometimes even frustrating as they have the impression that oral health worsens despite all the efforts taken. Nonetheless, most nurses are convinced that oral health is integrally linked with overall well-being and recognize the importance of thorough oral hygiene practices. One of the pillars of oral care in intubated patients is the use of antiseptic mouthwashes, although the optimal frequency, contact time, and antiseptic concentrations have yet to be determined.

Another aspect of oral care is optimizing the patient’s oral health status before ICU admission or intubation. In case of elective major surgery, patients can be encouraged to brush teeth and rinse the oral cavity in the weeks preceding the surgical procedure. In a cohort of patients with esophageal cancer, a protocol of brushing teeth 6 times daily resulted in a significant reduction in the incidence of postoperative pneumonia. It remains uncertain, however, whether such an approach could reduce the rate of VAP in surgical patients. Bergan et al tried to reduce the rate of postoperative pneumonia in cardiac surgery patients by implementing a care bundle focused on optimizing oral health before surgery. Patients were taught how to brush teeth and tongue and how to clean their jugal and palatal membranes. Additionally, patients were asked to rinse the mouth with chlorhexidine 0.12% twice daily until surgery. In brief, the protocol succeeded in optimizing oral health in 92% of patients before surgery. The rate of postoperative pneumonia decreased from 32 events per 1000 ventilator days in the preintervention period to 10 events per 1000 ventilator days in the 6 months following the implementation phase. Of note, patients who had pneumonia develop were more likely to have had worse oral health before surgery. These data, although based on a noncontrolled study, call for more attention toward oral care in the preoperative period.

When traditional mechanical ventilation fails to achieve oxygenation goals, extracorporeal membrane oxygenation (ECMO) may offer the last chance for survival. The devastating flu epidemics of the past years have boosted the experience with ECMO in many centers. Guttendorf et al described discharge outcomes in patients receiving ECMO either for respiratory or cardiac indications. The authors had a cohort of 212 patients who received ECMO, 126 for cardiac indications and 86 for respiratory indications. Overall survival was 33%, with 50% survival in patients with a respiratory indication and 28% survival among patients with a cardiac indication. Patients with poor outcomes were generally older, were more likely to require cardiovascular support before ECMO, and had more transfusions and complications. In a study of 6 patients, ECMO combined with use of an intra-aortic balloon pump for acute respiratory distress syndrome might have provoked right ventricular failure. Following use of the balloon pump, inotropic support could be markedly reduced. Four patients survived. As survival figures are still grim, a scoring system to predict mortality in venovenous ECMO has been developed for research and quality control purposes.

Agitation, Confusion, and Delirium

Agitation is often considered a precursor to or the initial phase of delirium. This complication is often associated with intensive care and affects nearly 60% of patients within the first 5 days of ICU admission. Most patients become agitated within the first day following admission, after a mean stay in the unit of barely 12 hours. This observation reflects the overwhelming influence of an acute admission on patients’ emotional equilibrium. Early predictors of agitation include a history of psychiatric diagnosis, organ failure (particularly respiratory failure), many hours with restraints, pain, and presence of a urinary bladder catheter. The noise and the light levels in the ICU contribute to the risk of delirium by disturbing patients’ sleep patterns. In a randomized controlled trial, Lytle and colleagues evaluated the effect of lavender aromatherapy on vital signs and perceived quality of sleep. Patients
Nutrition and Glucose Control

In the past decade, the importance of early enteral nutrition has grown steadily. Failure to administer the caloric needs results in worse outcomes. Furthermore, shortages in nutritional elements such as vitamin D, known to have immunomodulating properties, are also associated with higher mortality in patients with sepsis or critically ill patients in general. In order to minimize the chance of caloric deficits, nutrition support protocols have been developed. Careful implementation of such a protocol shortens time to achieve feeding goals.

Feeding tube verification is considered a standard practice for ICU nurses. Failure to detect respiratory placement of a feeding tube may result in serious harm. The American Association of Critical-Care Nurses developed a practice alert for the verification of feeding tube placement based on 4 practices: (1) use of a variety of bedside methods to predict tube location during insertion, (2) recognizing that auscultatory methods are unreliable, (3) obtaining radiographic confirmation of any blindly inserted tube before initial use, and (4) checking tube location every 4 hours once feeding has started. Bourgault et al assessed the extent of adoption of these practices by 370 ICU nurses. Fifty-five percent of the nurses were aware of the practice alert, and 45% had adopted it in daily practice. However, only 29% of the adopters had also implemented all 4 of the clinical practices on which the practice alert is based. The level of adoption or implementation of the practice alert was closely related to personal and organizational factors.

Dysglycemia puts patients at risk for a variety of postoperative complications such as infection, which itself is associated with deleterious outcomes. Consequently, strict adherence to a protocol for glycemic control is pivotal. The effect of an educational intervention on ICU nurses’ knowledge about glycemic control was assessed by means of a before-after study. Nurses completed a questionnaire to measure their knowledge of glycemic control. They demonstrated a significant increase in knowledge levels but, more importantly, the intervention was associated with an improvement in clinical outcomes: the incidence of hypoglycemia decreased from 2.1% to 0.2%, and 88% of all blood glucose measurements in the postintervention period were below the critical threshold of 180 mg/dL.

The use of arterial catheters for hourly collection of blood samples for glycemic control avoids frequent fingersticks and spares patients some discomfort. Returning the clearing volume may substantially decrease procedure-related blood loss. Raurell-Torredà and colleagues questioned whether arterial catheter setup influenced the rate of mechanical problems and catheter infection, and whether the glycemic values matched those obtained from venous samples. Patients were randomized to either the intervention group (equipped with a nonwaste needleless setup) or the control group (equipped with the nonwaste syringe setup). Two infectious episodes were observed in the control group versus none in the intervention group. Mechanical complications were rare in both groups. Glycemia detected from arterial samples was as effective as with laboratory results (venous samples) except when hematocrit values were less than 25%. The investigators...
concluded that obtaining blood samples from arterial catheters to guide intensive insulin therapy is both safe and effective.

**Pressure Ulcers**

Guidelines for the prevention of ventilator-associated pneumonia generally include the recommendation of semirecumbent positioning, although the body of evidence supporting such positioning is rather moderate.\textsuperscript{60-61} It has been hypothesized, however, that semirecumbent positioning puts patients at risk for pressure ulcers. In an open, prospective, randomized cross-over trial, the interface pressure was measured over distinct body positions by using a pressure-mapping device.\textsuperscript{62} Interface pressure with patients supine at various angles of head-of bed elevation and during reverse Trendelenburg position was measured in 20 healthy volunteers. Four types of mattresses were evaluated as well: 2 different foam mattresses and 2 air suspension beds one of which had low-air-loss technology. Peak sacral interface pressure increased significantly only in the 45° semirecumbent position, whereas use of the reverse Trendelenburg position led to decreased peak pressures for all positions. The mattress with the low-air-loss system provided the lowest peak pressures at all angles. The authors concluded that a 30° head-of-bed elevation appears to be a fine compromise for preventing ventilator-associated pneumonia while preventing skin breakdown. In a controlled study, Behrendt et al\textsuperscript{63} evaluated the effect of a continuous bedside pressure mapping (CBDM) device on rates of pressure ulcers in a medical ICU. In a 2-month period, 442 patients were assigned to beds either equipped with or not equipped with a CBDM device. All patients were turned every 2 hours while patients in the CBDM device group were repositioned to offload high-pressure points when required. Patients in the CBDM device group experienced significantly fewer hospital-acquired pressure ulcers (0.9% vs 4.8%; \( P = .02 \)). A limitation of the study is that patients were not randomized but rather were arbitrarily assigned to a treatment group. Yet, the baseline risk profiles for pressure ulcer development were not different between the groups, although some risk factors were not considered in the risk profile assessment. For example, Hyun et al\textsuperscript{64} demonstrated that the risk for pressure ulcers was substantially higher among underweight patients and extremely obese patients (8.6% and 9.9%, respectively) than among normal weight and obese patients (5.5% and 2.8%, respectively). The Braden score was predictive of development of pressure ulcers, but adding the body mass index to the model did not substantially improve the model’s predictive value.

**Early Mobility**

Besides the prevention of pressure ulcers, early mobility and exercise play an important role in the rehabilitation phase of critically ill patients. Despite its obvious advantages, mobility appears to be difficult to implement in ICUs. Roberts et al\textsuperscript{65} evaluated and compared the efficiency, effectiveness, and safety of a mobility platform with standard equipment. Data collected from 71 patients and 238 activities indicated that a mobility protocol can be safely implemented in an ICU. Yet, standard equipment can be used as well. A favorable side effect of the study was the overall change in attitude and culture in daily practice regarding early mobility. This change is important as there are plenty of obstacles to early mobility in ICU patients. Yet, a case series by Brownback et al\textsuperscript{66} illustrates that mobility interventions are possible even in patients undergoing continuous renal replacement therapy as long as some limitations and points requiring attention are taken into account.

**Infection Prevention and Control**

Despite the distribution of international guidelines and all the efforts invested in prevention,\textsuperscript{67} health care–associated infection continues to pose a threat to patients’ outcomes,\textsuperscript{68-75} not to mention the societal costs associated with this complication.\textsuperscript{71,73-75} Prolonged mechanical ventilation is an obvious risk factor, and a proactive approach to extubate patients as early as possible on basis of daily sedation breaks has been demonstrated to reduce the risk of pneumonia. Trauma, neurologic conditions, cardiovascular failure, and metabolic issues are recognized risk factors for pneumonia in adults, whereas the use of vasoactive drugs and the presence of a nasogastric tube are risk factors in infants and children.\textsuperscript{76-78} In the past few years, researchers in several studies have stressed that the simple distribution of guidelines for pneumonia prevention does not change practice. Nurses’ and clinicians’ knowledge of evidence-based recommendations is moderate to low in most studies.\textsuperscript{60,61,79-81} In addition, implementation of guidelines is a challenge. In a survey among ICU nurses from 8 hospitals, the most consistent facilitator of adherence to guidelines for the prevention of ventilator-associated pneumonia was nurses’ positive attitude toward the guideline.\textsuperscript{82}
A similar observation has been made earlier in a study exploring behavioral determinants of hand hygiene. Hand hygiene is a cornerstone in the prevention of contamination of the work environment and equipment. In turn, contaminated equipment may serve as a vector for bacteria to colonize and infect patients. Addison et al investigated the cleanliness of disposable versus reusable electrocardiography (ECG) lead wires in children. Cardiac surgery patients were randomized to either disposable or reusable ECG lead wires. Levels of contamination were assessed by the evaluation of adenosine triphosphate counts, which correlate with microbial cell counts. On the first day postoperatively, adenosine triphosphate counts on disposable ECG lead wires were significantly lower \((P < .001)\) than on reusable ECG lead wires. On the second day postoperatively, this difference was no longer significant \((P = .06)\). The authors suggested that this observation should encourage the use of disposable ECG lead wires in pediatric cardiac surgery patients in the first 2 days following surgery. However, in the absence of clinical outcomes, this advice should be interpreted with caution. In a large randomized controlled trial encompassing more than 7200 patients, Albert and colleagues could not demonstrate a difference in infection rate between ICU patients with disposable and reusable ECG lead wires.

In a recent systematic review and meta-analysis, the potential of quality improvement interventions to reduce the risk of central catheter–associated bloodstream infection (CLABSI) was assessed. The study clustered 41 before-after trials and demonstrated a significant reduction in the risk of CLABSI (odds ratio, 0.39; 95% confidence interval, 0.33-0.46). Importantly, the effect was bigger when quality improvement initiatives were based on care bundles or checklists. Another important element in quality improvement initiatives is education and training. Gerolemou et al evaluated the effect of simulation-based training for nurses on use of sterile techniques during central venous catheter insertion on rates of CLABSI. After completion of the training intervention, the mean infection rate in the unit decreased from 2.61 to 0.4 per 1000 catheter days.

**Challenges in Transplant and Organ Donation in the ICU**

Solid organ transplant remains a challenge for intensive care practitioners, patients, and patients’ families. On the one hand, some patients and their families who urgently require 1 or more organs to be transplanted are commonly admitted to the ICU needing complex vital support while transplant surgery does not occur. On the other hand, the donation process also involves complex decision making by both patients’ families and clinicians, as organs for transplant may come from donors who are still alive or from donors who have been declared dead for either neurologic (brain death) or cardiopulmonary reasons.

Lustbader explored the practical and ethical challenges that critical care professionals face regarding organ donation from cadaveric donors in the ICU. The author describes the main controversies and opportunities in donation after brain death and donation after circulatory death, concluding that ICU staff members are exceptionally qualified to preserve the opportunity for organ donation for patients and families that wish to do so, within a very complex grieving process.

However, and according to Powell, one of the burning issues may be that a significant number of health professionals do not have a clear grasp of the definition and assessment of brain death and that communication with families of brain-dead patients is far from adequate. The author suggests that clarifying the main concepts of brain death and communication strategies for patients’ families must be included in continuous development and training programs. Similarly, institutions must emphasize the national guidelines for accountability on the brain-death declaration.

While some families and patients struggle with end-of-life decisions regarding organ donation, others have to deal with difficult times while waiting for a transplant. Hansen et al performed a qualitative case analysis of 1 liver transplant patient, describing the experiences of the patient’s family while their relative was on the transplant list. Through evaluation of semistructured interviews, the author pooled family members’ perspectives into 3 phases that correspond to the progression of the patient’s clinical condition: dealing with crisis, confusion and frustration, and back on the road to transplant. These exploratory data are important, as they may provide a starting point for wider studies on how to prepare health care professionals for dealing with families of ICU patients on transplant lists. Bell suggests that there are some benchmarking notions that have to be taken into account when dealing with such complex situations. These notions include clarifying concepts concerning the transplant process with patients’ families, ensuring
adequate alignment between all the members of the health care team, emphasizing family presence as the family and the patient define it, and highlighting the need to provide psychosocial support to patients and families who are undergoing this process.

Care for Caregivers

Caring for critically ill patients can be extremely stressful. The ICU can be a tension-charged environment with many sources of conflicts. Furthermore, ICU nurses’ daily encounters with suffering, grief, and death make them prone to the development of psychological disorders such as depression, anxiety, burnout, and posttraumatic stress disorder. Mealer et al. state that resilience training may be helpful to mitigate the development of maladaptive psychological symptoms, and they tested the feasibility and acceptability of a multimodal program in a randomized controlled 12-week intervention pilot study. In the intervention arm, 13 nurses followed a 2-day educational workshop, written exposure therapy, mindfulness-based stress reduction techniques, aerobic exercises, and event-triggered counseling sessions. No interventions were associated with the control arm. Implementation of the intervention was successful as demonstrated by very high levels of attendance and high acceptability and satisfaction scores. Nurses in the intervention arm had a significant reduction in symptoms of depression \( (P = .03) \), and participants in both treatment and control groups showed a significant decrease in posttraumatic stress disorder symptoms \( (\text{intervention } P = .01; \text{control } P = .02) \) and improved resilience scores \( (\text{intervention } P = .05; \text{control } P = .03) \). The latter finding may be due to a lack of treatment fidelity and intervention contamination as nurses of both groups worked together in the unit. Despite the promising results of this trial, a sufficiently powered randomized controlled trial is needed to determine the effect of a multimodal resilience program on enhancing psychological outcomes and individual nurses’ level of resilience.

In the ICU, timely and accurate completion of procedures is vital in ensuring good outcomes for patients. It is, however, also well known that there is a positive correlation between critical care nurses’ shift length and the rate of medical errors. As in situ simulation has been proposed as an innovative approach to investigate quality of care topics, Calhoun et al. explored its use to study the relationship between critical care nurses’ time spent on the current shift and the efficient, accurate completion of tasks in a pediatric ICU. As such, 28 nurses performed in 3 assessments during a standard 12-hour shift using a high-fidelity pediatric simulator. Assessments took place at the beginning of each participant’s shift, 6 hours into the shift, and immediately after the shift. The mean time needed to complete all tasks was 17.9 minutes before the shift, 13.3 minutes at midshift, and 12.4 minutes at the end of the shift, with a mean total decrease of 5.5 minutes \( (P < .001) \). No significant changes in accuracy were found. The combination of these results suggest that nursing performance of simple tasks may improve during the course of a 12-hour shift.

Working long shifts may, however, influence nurses’ sleep patterns. Long shifts may reduce the time available for responsibilities at home and thus contribute to limiting opportunities for sleep. Sleep deprivation, in turn, may lead to reduced alertness and hamper work performance. Allen et al. recruited a sample of 20 critical care nurses who completed a daily sleep and activity log and wore an actigraph (a wristwatch-like device with a motion sensor that allows differentiation of sleep from wakefulness) for 14 days in order to measure their sleep time objectively. They reported mean sleep times between consecutive work shifts of 6.79 hours between 2 day shifts and 5.68 hours between 2 night shifts. Nurses slept much more between nonworkdays (8.53 hours) and during the night between a day shift and a nonworkday (8.93 hours), strongly supporting the suggestion that nurses catch up on their sleep loss during nonwork periods. Whether the degree of sleep deprivation identified may impair patient safety must be determined by further research.

Family Matters

Worldwide, awareness is growing that families of critically ill patients should no longer be considered as outsiders in the ICU. Within the context of promoting family-centered care, Schnell et al. demonstrated that an open visiting policy in the ICU improved satisfaction among patients’ families. Moreover, opening the ICU was not associated with disturbances in care delivery and yielded a slight increase in perceived workload only. Numerous units, however, still hold on to traditional, restricted visiting policies.

Riley et al. invited patients’ family members, nurses, and physicians from 5 ICUs with restricted visitation policies to participate in focus group meetings in order to explore their perceptions about patient-centered care. As a result, patients’ and their families’ expectations were found to be
directed toward a patient-centered care paradigm. Nurses’ and physicians’ communication, concern, compassion, closeness, and flexibility were identified as facilitators of patient-centeredness, whereas competing roles of control over the patient’s care were recognized as an important barrier. For units planning a change toward a patient-centered ICU culture with open visitation policy, these findings are crucial to guide the implementation process.100

ICU visitation policies in Athens, Greece, are still predominantly restricted.101 As evidence accumulates that flexible and open ICU visitation policies are beneficial for both patients and their families, Athanasiou et al101 surveyed 143 critical care nurses from 6 Athenian public hospitals to investigate their beliefs about the effects of visiting on patients, patients’ families, and staff, as well as their attitudes toward visitation. Strikingly, a large majority of participants were opposed to open visitation, with more than 94% not wanting an open policy in their unit. Despite nurses’ awareness that open ICU visitation is supportive for patients and their families, Greek nurses associate it with hampering of nursing care (75%) and an increased physical and psychological burden (87%). This negative attitude may be influenced by inadequate staffing levels, a high shift rotation, and a limited number of experienced nurses. Optimizing work conditions might help to initiate a change in Greek nurses’ perceptions about open ICU visitation.101

Besides open visitation policies, family presence during resuscitation (FPDR) is an emerging issue in the promotion of family-centered care. Although the evidence for its positive effects on patients’ families continues to increase, the practice is still under debate during resuscitation procedures. More experience highly experienced in resuscitation, specialty certified, or a member of a professional organization. Concerns about family interference during resuscitation, lack of space, lack of support for or trauma to the family members, and performance anxiety were identified as barriers to allowing patients’ families to be present during resuscitation procedures. More experience with FPDR, educational initiatives dealing with its benefits, and the appointment of a designated team member to attend to the patient’s family during resuscitation are required to change current practice and to promote consistent implementation of FPDR.104

In pediatric critical care, family-centered care is largely implemented. However, when the child’s condition becomes unstable and resuscitation is needed, there is less agreement about family presence. To investigate the state of the science concerning family presence during resuscitation and invasive procedures in pediatric critical care, Smith McAlvin et al107 systematically reviewed articles published between 1995 and 2012. Of 113 articles identified, 6 were eligible for inclusion in the review. The authors reported that parents wish to be present during both invasive procedures and resuscitation, would be present again, recommend being present to others, and would not have changed anything about their presence experience. Parents had better coping and better adjustment to the death of their child when present. Parents not present displayed more distress than did parents who were present. Although the generalizability of these findings is hampered by gaps in the methods of the studies included, these results suggest that the presence of patients’ families during resuscitation and invasive procedures increases parents’ satisfaction and coping. Further research is, however, needed.

FINANCIAL DISCLOSURES
None reported.

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