



## Review

# Critical Care Nursing

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### ABSTRACT

Everyday routine jobs, as well as suddenly specific situations, as well as severe medical conditions of a nurse, can be considerably psychophysically exhausted. It is therefore important for nurses to find a model to deal effectively with stress and the severity of working conditions. Higher levels of education and lifelong learning contribute to finding new strategies that facilitate work in the intensive care unit. Qualities that give importance to nurse's are communication skills, emotional stability, empathy, flexibility, interpersonal skills, physical endurance, respect, knowledge and many others. The role of a nurse is to establish a balance between technique and humanity, or to bring humanity in the care of a patient, because no one device will replace the caring and sympathy of the nurse.

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## 1. INTRODUCTION

Critical care is unique among the specialties of medicine [1]. While other specialties narrow the focus of interest to a single body system or a particular therapy, critical care is directed toward patients with a wide spectrum of illnesses. These have the common denominators of marked exacerbation of an existing disease, severe acute new problems, or severe complications from disease or treatment. The range of illnesses seen in a critically ill population necessitates well-rounded and thorough knowledge of the manifestations and mechanisms of disease. Assessing the severity of the patient's problem demands a simultaneously global and focused approach, depends on accumulation of accurate data, and requires integration of these data. Although practitioners of critical care medicine—sometimes called intensivists—are often

specialists in pulmonary medicine, cardiology, nephrology, anesthesiology, surgery, or critical care, the ability to provide critical care depends on the basic principles of internal medicine and surgery. Critical care might be considered not so much a specialty as a “philosophy” of patient care.

Care of the critically ill patient has evolved into a discipline that requires specialized training and skills [2]. The physician in the ICU (intensive care unit) depends on nursing for accurate charting and assessment of the patients during the times when he or she is not at the bedside and for the provision of the full spectrum of nursing care, including psychological and social support and the administration of ordered therapies.

Complex mechanical ventilation devices need appropriate monitoring and adjustment. This expertise and other functions are provided by a professional team of respiratory therapy practitioners. The wide spectrum of the pharmacopeia used in the ICU is greatly enhanced by the

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assistance of our colleagues in pharmacy. Many institutions find it useful to have pharmacists with advanced training participate in rounding to help practitioners in the appropriate pharmacologic management of the critically ill. Additionally, technicians with experience in monitoring equipment may help in obtaining physiologic data and maintaining the associated equipment. Without these additional healthcare professionals, optimal ICU management would not be possible.

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## 2. CRITICAL CARE

One of the most important responsibilities that nurses have is to make correct and safe decisions in a variety of client-care situations [3]. The decisions made by nurses affect the health status, recovery time, and even the survival or death of a client. For example, the critical care nurse must decide when to give certain medications on the basis of changes in the client's condition. The emergency department nurse must decide which clients to treat first by assessing the extent of their injuries. The hospital staff nurse must decide what prn medication to give for which set of symptoms. The home health nurse must decide when to call the physician about a change in a client's condition.

The process by which these decisions are made involves the use of critical thinking. Critical thinking is based on reason and reflection, knowledge, and instinct derived from experience. It has also been defined as "the art of thinking about thinking." It is both an attitude about and an approach to solving problems. Critical thinking helps nurses make decisions about problems for which there are no simple solutions. Often nurses have to make these decisions with less than complete information.

The first objective is, of course, to provide exemplary care [4]. The intensivist must develop and trust in his or her clinical skills. An effective approach to solving clinical dilemmas in the ICU must involve the development of a clinical hypothesis; the dictum 'don't just do something, stand there' is an invaluable lesson in developing and guiding therapy. Frequently, the level of illness in the ICU can be overwhelming and there is an urge to act quickly, but not necessarily in a directed fashion. This may serve only to further confuse interpretation of the underlying pathophysiologic state. The six steps below are a useful tool for guiding physician behavior in the ICU:

- Develop and trust one's clinical skills.
- Formulate clinical hypotheses and test them.
- Liberate patients from interventions so that treatments do not outnumber diagnoses.
- Define therapeutic goals and seek the least intervention in achieving each goal.
- First, do no harm.
- Organize the critical care team.

In the USA, 40% of health expenditure is spent in the last month of the patient's life, which amounts to ~1.5% of the GDP of the USA [5]. At the pinnacle of high tech medicine is the critical care unit. It is hardly news that a limitation of

healthcare expenditure coupled with temporary or permanent demand excess leads to an imbalance between available resources and expenditure. This imbalance has led to providers seeking to 'contain costs' in a wide variety of disciplines in medicine. In the UK, the use of the R word (Rationing) in conjunction with healthcare is politically and sociologically problematical, conjuring up images of the post-war period of austerity and conflicting with the concept of free access from cradle to the grave healthcare. It is, however, self-evident that those resources are not infinite. Coupling this fact with rising expectations amongst patients and increasing costs in critical care leads to a conflict between expressed needs and our ability to meet them. The ensuing balancing act may have untoward consequences; a systematic review of rationing of critical care beds in the UK has shown that people die that otherwise might have lived. For the most part, choosing between competing patients is often a matter of logistics as alternative arrangements can often be made. Notwithstanding that, at the bedrock of rationing and discussion thereof is the question that is health or life itself so special that we should improve its quality or longevity at any cost? This chapter examines the ethical and economic principles behind rationing in critical care.

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## 3. NURSE

Critical care nurses care for patients who are critically ill [6]. They have a great deal of one-on-one contact with the patients and are often the main source of information for the family members. They are responsible for constantly monitoring the patient's condition, as well as recognizing any subtle changes. These nurses use a great amount of technology within their practice, and function as integral members of the multidisciplinary health care team. Critical care nurses must possess the ability to collaborate with other members of the health care team such as physicians, case managers, therapists, and, especially, other nurses. They are responsible for all care given to the patient, from medication administration to tracheotomy and other ventilator care, as well as constant monitoring of the patient for any alterations in status. Responsibilities include monitoring, assessment, vital sign monitoring, ventilatory management, medication administration, intravenous insertion and infusion, central line care, Swan-Ganz catheters, and maintenance of a running record of the patient's status. They must be prepared at all times to perform cardiopulmonary resuscitation and other life-saving techniques.

RN (registered nurse) preparation and advanced cardiac life support certification are required. A Bachelor of Science in Nursing and critical care nurse certification are preferred, and may be required depending on the institution. Most institutions require at least 1 to 2 years of medical-surgical experience, although some hospitals are offering extended preceptorships to selected new graduates. Previous critical care experience is desired. In addition to prior experience,

many institutions require nurses to pass a critical care course, usually offered in the hospital, and to complete 4 to 6 weeks of orientation to the unit. Certification in critical care or cardiac medicine is available from the American Association of Critical Care Nursing Certification Corporation.

The nurse in ICU risks moral distress when she feels that her actions conflict with her commitment to compassionate practice [7]. Her patients are dying and not being cared for as dying. Often, the nurse at the bedside is compelled to perform invasive and painful procedures that she fears may be futile: dressing changes, wound irrigation, debridement, venipunctures, gastric tube insertions, catheterizations, turning, positioning, and restraining patients. Accommodating the demand for ongoing monitoring and bedside interventions, nurses are compelled to deny privacy, modesty, and visitors. The nurse wants to be true to her responsibility to the patient and neither create unnecessary suffering nor omit possible lifesaving treatment. Nurses cause suffering because we believe we are accomplishing a long-term good. Therefore, the expert ICU nurse must continually evaluate the effectiveness of interventions to achieve realistic goals of care.

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#### 4. CHILD

A critically ill child is a child who is in a clinical state which may result in respiratory, cardiac, neurological, gastrointestinal, metabolic, renal and haematological complications [8]. The immediate goal is prompt recognition and aggressive early treatment to prevent initial respiratory and circulatory insufficiency.

This requires rapid and systematic clinical assessment to detect physiological instability so that timely, prompt and effective resuscitation and stabilisation may occur before the onset of organ failure. To achieve the best possible outcomes and enhance patient safety requires interprofessional team working and collaboration, whereby formal decision making and care interventions are informed by the knowledge and skills within each of the professional roles.

A powerful incentive for greater teamwork among professionals is created when there is respect and understanding of the role of each of the team members and recognition of the unique contribution of each individual in a critical care situation. In a well - practised team, each member knows in advance their role and regards the leader as the person who coordinates, directs the assessment, and consults with other members regarding problem identification and subsequent care or management planning. Therefore interprofessional working models require that the level of equality of esteem and power in formal decision making is balanced within the professional roles of doctor and nurse. Effective multidisciplinary team working is at the heart of providing high quality and safe care.

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#### 5. ELDERLY

The elderly are a highly heterogeneous group, and the physical and medical heterogeneity increases with age [9]. Individuals over 65 years of age—with or without chronic diseases—vary widely in their physical, behavioral, and cognitive functions. Any clinician can relate the “Tale of Two Octogenarians” seen in practice on the same day: the end-stage patient afflicted with Alzheimer’s disease seen at the nursing home and the vigorous retiree seen after his golf game for monitoring of his historically well-controlled hypertension.

Physiologic rather than chronological age is a better predictor of the health status of the elderly. An abrupt decline in physical function or any organ system is almost certainly due to disease and not due to “normal aging.” Therefore, symptoms in the geriatric population should not be attributed automatically to old age, and it is important to look for potentially reversible causes of symptoms. Moreover, treatable conditions should not be undertreated for fear of side effects of medication.

Improvement or maintenance of functional status is the major goal of medical care in the geriatric population. Functional disability occurs faster and takes longer to correct in the elderly, necessitating early preventive measures. Active efforts should be made to maintain functional level even during intensive care. Even small changes in function can make large differences in the quality of life. For example, regaining the ability to oppose the thumb to other fingers may enable a geriatric patient to become independent in feeding. Prevention of iatrogenic diseases is also important. For example, close attention should be paid to prevent the development of pressure ulcers. A pressure ulcer can develop in just few hours, and the mortality rate of those who develop the lesions in the first 2 weeks of intensive care has been reported to be as high as 73%. Other iatrogenic problems in the ICU include aspiration pneumonia, sepsis, GI bleeding, delirium, drug toxicity and interactions, and renal insufficiency.

Multiple concurrent illnesses, cognitive and sensory impairments, age-related changes in physiology and pharmacodynamics, increased vulnerability to delirium, and complications from immobility make management of acute illness in the elderly a clinical challenge for all physicians and other health care providers who care for patients in this age group.

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#### 6. PATIENTS

Caring for critically ill patients can engage a range of legal, ethical and practical challenges [10]. This is significant in that over 110,000 patients are admitted to NHS critical care units every year. In England there are currently 3,730 adult critical care beds, 405 paediatric and 1,368 neonatal intensive care cots with occupancy rates of 82 per cent, 73.6 per cent and 70 per cent respectively. In fact, these

figures are likely to underestimate the true prevalence, since critical care is not invariably administered in intensive care or high-dependency units and the location of care will depend upon need.

Delivery of high-quality care to these vulnerable patients can be compromised by ancillary factors such as resource constraints, which may impact negatively upon bed availability and access to specialist staff. The legal framework that governs the care of critically ill patients is potentially extensive and incorporates the civil law (e.g. negligence actions), criminal law (physician-assisted suicide and euthanasia), public law (judicial review) and European law (clinical research). All these aspects are underpinned by human rights and equality jurisprudence. Additional areas of governance include the formal complaints system and professional regulation.

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## 7. LAW ASPECTS

Although many legal issues may arise in the ICU as elsewhere in the hospital, a daily concern is obtaining consent for the many procedures that are required [3]. In order to be considered legally effective, consent to medical treatment must meet three tests:

- It must be voluntary.
- The patient must be adequately informed.
- The obtaining of consent must be by someone with adequate capacity and authority.

It is important to note that physicians rely on family members as surrogate decision-makers for incapacitated patients, even in the absence of a specific statute, advance directive, or court order. In addition, some patients may lack relatives or friends to act as surrogate decision-makers. In such cases, physicians should seek guidance from living wills or other forms of advance directive. Neither a patient nor a family member can demand medical treatment that would be futile, and the physician is not obligated to provide such medical treatment. If the physician and patient or surrogate decision-maker have irreconcilable differences, the physician may help provide alternate care opportunities.

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## 8. FORENSICS

Forensic nurses generally work in roles that involve evidence collection, documentation of medical forensic evidence, expert or fact testimony, consultation, and education of legal professionals [11]. A forensic nurse may be hired by either the prosecution or defense in criminal cases. When considering the role of a forensic legal nurse consultant (LNC), there are some basic educational considerations. As a clinical nurse, the specialties that will best prepare a nurse for working on criminal cases are critical care, trauma, or emergency nursing. Additional foundational knowledge includes training in sexual assault

examination of adults and children, death investigation, and some basic or introductory education on other areas of forensic science. The amount of education and training that will be needed will depend on whether the LNC is being hired as an expert for the purpose of testifying or for the purpose of screening criminal cases for potential forensic evidence.

Experience as a practicing Adult or Pediatric Sexual Assault Nurse Examiner will be extremely helpful but is not absolutely necessary when considering a career as an LNC. Training as Sexual Assault Nurse should also not be the only medical forensic training that is used as the basis for employment as a forensic LNC. In order to expand one's practice and competency as a forensic LNC outside of cases that involve sexual assault reports or medical records, training in analysis of deoxyribonucleic acid (DNA), toxicology, and interpretation of forensic evidence is necessary. With generalized medical and forensic training, a forensic LNC can be involved in reviewing and screening criminal cases such as murder, attempted murder, assault, sexual assault, child abuse, vehicular murders and assaults, and DUI (Driving Under the Influence).

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## 9. CONCLUSION

Intensive medicine deals with the treatment of the most severe patients who are endangered by life and those who are currently stabilizing vital functions, but at any given time they can come to life-threatening conditions. Such patients require continuous monitoring, care and treatment. The person who is spending most time with a critical patient is a nurse, stating that the role of a nurse in a health care unit in an intensive care unit is invaluable to the recovery and emotional state of the patient. Work in the intensive care unit requires not only a continuous presence with the patient, but also possesses special skills in the field of vital function monitoring, mechanical ventilation, intravenous therapy, etc. Additional skills are needed in intensive care units for children. Because of the complexity of procedures and methods of work in intensive care units for children, nurses need to be additionally educated and trained in order to master all the necessary skills which are needed to provide care for pediatric patients.

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