



Critical Thinking *in the* Intensive Care Unit

Skills to Assess, Analyze, and Act

SHELLEY COHEN, RN, BS, CEN

Critical Thinking in the Intensive Care Unit: Skills to Assess, Analyze, and Act

by Shelley Cohen, RN, BS, CEN

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Shelley Cohen, RN, BS, CEN, is the founder and president of Health Resources Unlimited, a Tennessee-based healthcare education and consulting company (www.bru.net). Through her seminars for nursing professionals, Cohen coaches and educates healthcare workers and leaders across the country to provide the very best in patient care. She frequently presents her work on leadership and triage at national conferences.

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When her laptop computer shuts down and her stethoscope comes off, Cohen puts on her child-advocacy hat and, with the help of her husband, Dennis, provides foster care to area children.

Critical thinking in the intensive care unit (ICU)

By Eric Wolak, BSN, RN, CCRN

LEARNING OBJECTIVE

After reading this section, the participant should be able to

- describe the characteristics of the critical care environment that require good critical-thinking skills

Back to basics

After being an intensive care unit (ICU) nurse for quite a while, you get to know how other ICU nurses think. Your first thought may just be to flip directly to the tools and forms in this book—but don't go there yet. To be successful at mentoring and supporting critical thinking, you need to be willing to learn the basic principles behind critical thinking. These fundamental concepts are generic for all nurses, regardless of the specialty they are working in.

To make the most of this book as your resource for critical thinking, consider making time to review all of the content before you implement the helpful tools. It may be tempting to just start using them immediately, but you would not expect a new nurse to understand the relationship between blood loss and delay in blood pressure changes without some foundational knowledge

Introduction

of anatomy and physiology. That same principle applies here. The tools are not the answer: the answer lies in grasping the concepts of critical thinking.

Critical thinking and the ICU setting

The ICU is a place of high patient acuity, complex pathologies, and multiple “unknowns.” These characteristics require nursing staff to display unique qualities and high levels of critical thinking, both as individuals and as part of a team.

The qualities that make the ICU such an interesting place include:

- What kind of admissions will arrive today?
- When will they arrive?
- How acutely ill will they be?
- What signs/symptoms of pathologies will patients present with?
- How many will require immediate life-saving measures?
- What type and how many monitoring devices will the patient require?
- What level of understanding will patients and/or their family possess?

The constantly changing, sometimes chaotic environment is what drives nurses to this specialty. In order to function cohesively, the entire healthcare team must be attuned to one another’s strengths and weaknesses. Due to the high-stress situations that often occur in the ICU, a sense of trust usually develops among the entire healthcare team. In this environment of high patient acuity and rapidly changing patient conditions, the ICU nurse needs to be a critical thinker, and needs to know how to use strategies that aid critical thinking.

Critical care nurses will be faced with patients who present with a variety of pathologies and a limitless number of problems and needs. Often, these critically ill patients are unable to

communicate their symptoms or their needs. Consequently, ICU nurses must be able to make decisions based on physical examinations, patient assessments, and data obtained through monitoring devices. Utilization and critical application of all these data will allow the critical care nurse to provide the best care to his or her patients.

Patient assessment

Perhaps one of the greatest advantages of being a critical care nurse is the luxury of having 2:1 or 1:1 patient-to-nurse assignment. Although patient acuity and need dictates such ratios, it also provides the critical care nurse with the rare opportunity to be attuned to every aspect of the patient, assessment trends, and ever-changing patient status. This includes vital signs, pain assessment, lung sounds, secretions, drainage output, and so on. By having an intimate knowledge of the patient's clinical presentation, the critical care nurse is in the unique position to verbalize patient needs to the healthcare team and to implement interventions necessary for optimal patient care.

Another important component of the assessment process is reassessment. After any intervention, it is paramount that a reassessment be performed. This formula of assessment-intervention-reassessment is a primary component of critical thinking and ensures comprehensive care of critically ill patients.

Attributes of critical thinking with nursing assessments

The following examples demonstrate application of the concepts and approaches of critical thinking as it relates to patient assessment. Strategies and attributes of critical thinking during patient assessments include the following abilities:

Thinker

- Identifies and initiates appropriate standing orders.
- Recognizes when a patient begins to decompensate and notifies the physician before immediate life-saving measures are required.

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Evaluates evidence and facts

- A patient states he did not receive any pain medicine from the previous nurse. However, all records indicate that medication was delivered appropriately.
- Despite the fact that the family claims that the patient is not hurting, the ICU nurse notes that the Non-verbal Adult Pain Score (NAPS) is 7/10.

Explores consequences before making decisions or taking action

- Although a patient has gone into ventricular tachycardia, the critical care nurse realizes that the patient's family has recently made him "Do Not Resuscitate" status.

Evaluates policy

- Recognizes that although the physician has written an order that it is OK to use a new subclavian central catheter, no chest x-ray was done after catheter insertion. The physician is contacted to request a chest x-ray and have it read before the new catheter is utilized.

Confident in decisions

- A physician challenges the ICU nurse about a life-saving medication that was given while the patient was on transport for a procedure. The nurse refers the provider to the written protocols that were followed to come to the decision of administering these medications.

Effective communication

- Communicates to other members of the healthcare team using a concise, organized process of verbalizing the situation, background, assessment, recommendations, and requests for further actions.
- Understands that no assumptions should be made. Every change in patient presentation is related to the appropriate provider.
- Asks physician if the chest tube should be placed to water-seal or suction.

Reassess after interventions

- After a change in ventilator settings based on a baseline arterial blood gas (ABG), the critical care nurse understands the importance of obtaining another ABG to reassess oxygenation and ventilation.

Displays critical analysis

- At end of shift, reviews patient outcomes and determines if delivered therapies or decisions were appropriate.

Intervention

In the intensive care unit, interventions are provided according to patient diagnosis, pathology, and data obtained during assessments. The challenging environment of the ICU presents the critical thinker with the opportunity to demonstrate the ability to make decisions in a fast-paced setting. During treatments and interventions, nurses are more involved as a team of critical thinkers working together, contributing decision-making comments that lead to improved patient outcomes. Collaborative relationships and efforts with the medical staff of the ICU provide opportunities for nurses to gain clinical knowledge that reflects their ability to make good decisions.

Attributes of critical thinking during interventions

Strategies and attributes of critical thinking during administration of therapeutic interventions include the following abilities:

Thinker

- If a nurse has a two-patient assignment, rationalizes which patient needs attention first.
- Recognizes the need to call pharmacy to ensure various medications are compatible through the same access line.

Introduction

Evaluates evidence and facts

- Notes decreased urinary output, notes vital sign trends, bladder scans patient, flushes Foley catheter, and approaches provider with information and request for orders.
- When reviewing laboratory results, notes a patient has dangerously low blood glucose. After re-evaluating the patient, the nurse performs a finger-stick glucose test and finds the patient to have normal range blood glucose. Upon discussion with the lab, it is determined there is an inpatient with the same first and last name of this patient.

Explores consequences before making decisions or taking action

- The critical care nurse understands to take precaution in using a high FiO₂ concentration for the COPD patient, despite evidence of shortness of breath.

Evaluates policy

- Patient requests that the police not be notified of her assault from her spouse. Nurse refers to hospital policy requiring all assaults to be reported and offers patient safety options.

Confident in decisions

- During a resuscitative effort, a physician orders a dose of medication that is twice the dose recommended by the American Heart Association. Despite the urgent needs of the patient, the nurse reads the order back to the physician and questions the dose.

Effective communication

- Communicates to other members of the healthcare team using a concise, organized process of situation, background, assessment, recommendations, and requests for further actions.
- The nurse is comfortable saying, “This patient is concerning me as she may be an atypical presentation. How do you feel about me doing a 12-lead EKG on her?”

Reassess after interventions

- The critical care nurse reassesses the patient's blood pressure and urinary output after giving a bolus of normal saline for low urinary output and blood pressure.

Displays critical analysis

- When caring for a septic shock patient, the nurse approaches the provider and, while updating him or her on the patient's status, inquires, "What do you think about activated protein C for this patient?"

Synergy Model

The Synergy Model serves as the structural framework behind all critical care nurses' practice. The model states that the needs or characteristics of patients and families influence and drive the actions of nurses. The Synergy Model identifies eight patient needs or characteristics and eight nursing competencies. Understanding and utilization of the Synergy Model enhances the critical thinking abilities of the critical care nurse. Subsequently, when these patient needs and nursing competencies are aligned, patient outcomes are optimized.

The eight patient characteristics that are evaluated by nurses include:

- **Stability:** The ability to maintain a steady state, including physiologic, psychological, emotional, and family or social stability
- **Complexity:** The intricate interconnectedness of two or more systems (e.g., body, family, and social systems)
- **Predictability:** The characteristic that allows one to expect an illness to progress in a specific manner
- **Vulnerability:** Susceptibility to a stressor
- **Resiliency:** The ability to return to a normal level of functioning

Introduction

- **Participation in decision-making:** The extent to which the patient and the patient's family engage in decision-making
- **Participation in care:** The extent to which the patient or family engages in aspects of care
- **Resource availability:** The resources that the patient/clinical unit can bring to a situation

Patients and families move along these eight continuums and influence how a nurse approaches and cares for patients. The Synergy Model outlines eight nursing competencies to respond to patient needs in order to enhance outcomes. These dimensions of nursing practice span the continuum from competent to expert and include:

- **Clinical judgment:** Clinical reasoning, which includes clinical decision making, coupled with nursing skills acquired by formal and experiential knowledge
- **Clinical inquiry:** The ongoing process of questioning and evaluating practice
- **Caring practices:** All nursing activities to which the patient and family respond
- **Response to diversity:** The sensitivity to recognize, appreciate, and incorporate differences in the provision of care
- **Advocacy:** Working on another's behalf and representing the concerns of the patient and family
- **Facilitation of learning:** The ability to facilitate patient, family, colleague, and unit learning
- **Collaboration:** Working with others to promote each person's contributions
- **Systems thinking:** Appreciating the care environment that recognizes holistic interrelationships

The Synergy Model outlines that when patients' characteristics and nurses' competencies synergize, optimal patient outcomes are achieved. As the patient and family is the primary focus, optimal outcomes are defined as what patients and families acknowledge as important. Ultimately, the Synergy Model helps to promote nurse-sensitive outcomes. In addition to serving as the organizing framework in critical care, the Synergy Model has also served as a framework for nursing education and a guide for advanced practice nursing.

Nursing research

If ICU nurses are to develop evidence-based practice, then critical analysis of research and incorporation of critiqued research findings into practice is paramount. Critical care nurses can identify problems and read research literature to identify studies that address their clinical outcomes. Furthermore, critical care nurses can utilize these published research findings in developing and editing protocols and procedures specific to their patient population.

Encouraging the development of critical thinking in ICU nurses

Much of critical thinking needed in the ICU setting comes from work experiences and particular patient scenarios that nurses tend to “bookmark” in their minds. All ICU nurses should be actively involved in the orientation and development of both new graduate nurses and experienced nurses who join the ICU setting through relating these learning-rich case studies. Without passing along these bookmarked events, we cannot help others to develop their critical thinking capabilities.

We want ICU nurses who are able to

- recognize a problem
- know what to do
- know when to do it
- know how to do it
- know why they are doing it

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ICU nurses know what outcomes they want for each patient and recognize how they impact these outcomes. Recognizing the role critical thinking plays in achieving these desired outcomes is the first step to creating and achieving an environment that promotes sound judgments.

Furthermore, we must remember that it is a privilege to be at the side of a patient and family during their most vulnerable moments. It takes a special person to be an ICU nurse and with that comes a tremendous responsibility to make the best decisions for the patients entrusting their care to us.

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Defining critical thinking

By Polly Gerber Zimmermann, RN, MS, MBA, CEN

LEARNING OBJECTIVE

After reading this section, the participant should be able to

- identify key aspects of critical thinking
- explain how nurses develop competency in critical thinking

Why critical thinking?

For educators and nurse leaders, critical thinking is like the weather: Everybody is talking about it, but nobody seems to know what to do about it. Passing the NCLEX only validates that new graduates have the *minimal* amount of knowledge needed to provide safe nursing care. Application of clinical critical thinking and judgment is at the heart of what makes a healthcare provider *nurse* (as a verb) compared to being a technician who completes tasks by rote. Critical thinking is at the core of safe nursing practice, and thus encouraging its development in every nurse should be an aim for all educators.

Chapter 1

Becoming a professional nurse

Nursing is a hands-on profession for which clinical experience plays a crucial role in professional development. Nurses have to progress through various levels before they reach proficiency. Managers and educators need to appreciate that new graduate nurses are at a different level, with different needs, than experienced nurses in their professional critical thinking.

Benner's stages of growth

Benner (1984) is well known for identifying and describing the five stages through which nurses proceed in their professional growth. Benner's stages are

Beginner: Has little experience and skills, learning by rote, completing education requirements.

Advanced beginner: Can perform adequately with some judgment, usually at this stage upon graduation.

Competent: Able to foresee long-range goals and are mastering skills. Still lack the experience to make instantaneous decisions based on intuition. Most nurses take up to one year to reach this stage.

Proficient: View situation as a whole, rather than its parts. Able to develop a solution.

Expert: Intuition and decision-making are instantaneous. Most nurses take at least five years in an area of practice to reach this stage.

So how do you take your inexperienced graduates and set them on the road to proficiency? And how do you help your more experienced nurses—who may have been practicing for years, yet you would never label them experts—reach that higher level? This book provides information, strategies, and tools to help you coach nurses at all stages of development as they hone their critical thinking skills, improve their judgment, and become better nurses. Chapter 3 discusses teaching critical thinking in a classroom setting, and other chapters include ongoing strategies for developing critical thinking in the clinical environment.

The goal in encouraging and developing critical thinking is to help nurses progress effectively through the stages of development. No one wants 10-year nurse employees who have the equivalent of one year of experience simply repeated 10 times.

So what is critical thinking?

Alfaro-LeFevre (1999) defines critical thinking as careful, deliberate, outcome-focused (results-oriented) thinking that is mastered for a context. Critical thinking is based on scientific method; the nursing process; a high level of knowledge, skills, and experience; professional standards; a positive attitude toward learning; and a code of ethics. It includes elements of constant reevaluation, self-correction, and continual striving for improvement.

Some of the characteristics of people who display critical thinking include open-mindedness, the ability to see things from more than one perspective, awareness of one's own strengths and weaknesses, and ongoing striving for improvement. The strategies commonly (and often subconsciously) used in critical thinking include reasoning (inductive reasoning, such as specific to general, or deductive reasoning, such as general to specific), pattern recognition, repetitive hypothesizing, mental representation, and intuition.

In the practical world of clinical nursing, critical thinking is the ability of nurses to see patients' needs uniquely and respond appropriately, beyond or in spite of the orders. The ability to think critically is developed through ongoing knowledge gathering, experience, reading the literature, and continuous quality improvement by reviewing one's own patient charts. An example of a nurse who displays critical thinking is when a physician orders acetaminophen (Tylenol) for a patient's fever, and the nurse questions the order because the patient has hepatitis C. A critical thinker goes beyond being a "robo-nurse" who simply does as he or she is told.

In Croskerry's study (2003), 32 types of misperceptions and biases (cognitive disposition to respond) were identified in clinical decision-making. Everyone is influenced by what they see most often, most recently, or most dramatically. Cognitive errors may be avoided by always striving to consider alternatives; by decreasing reliance on memory (instead, use cognitive aids such as reference books); by using cognitive forcing strategies, such as a protocol; by taking time to think; and by having rapid and reliable feedback and follow-up to avoid repeating errors.

Chapter 1

The overarching goal is to help shorten new graduate nurses' on-the-job learning curve, and give directed assistance to all nurses in their critical thinking development.

Del Bueno's definition of critical thinking

There are many definitions of critical thinking, and one of the most helpful is Dorothy Del Bueno's Performance-Based Development System. Del Bueno determined that nursing competency involves three skills: interpersonal skills, technical skills, and critical thinking.

Del Bueno defines critical thinking in a clinical setting with the following four aspects:

- Can the nurse recognize the patient's problem?
- Can the nurse safely and effectively manage the problem?
- Does the nurse have a relative sense of urgency?
- Does the nurse do the right thing for the right reason?

Del Bueno discussed an example from her work on responses to a taped scenario of a one-day postop trauma patient. On the tape shown to nurses, the patient suddenly becomes diaphoretic, pale, short of breath with tachypnea, and holds the right side of the chest, complaining of pain. An ABG result is given showing respiratory alkalosis. The expectation is that nurses will recognize this is a potential pulmonary embolism or pneumothorax (an alteration in respiration), manage the patient with oxygen, assess breath sounds, raise the head of the bed, call the physician, etc. And experienced nurses should anticipate physician orders, such as a portable chest x-ray or an EKG. But Del Bueno found that 75% of inexperienced and 25% of experienced nurses said they would manage the patient's alkalosis by *only* having the patient breathe into a paper bag.

Overall, she found that only 25%–30% of inexperienced nurses (less than one year of clinical experience) had acceptable results. The range of acceptable results was from 12% to 60%, and there was no difference between nurses' performance based on their educational preparation and/or whether they had previous healthcare experience (such as being a technician or an LPN). She found that 65% of experienced nurses had acceptable results, and that the number was higher (85%) in some specialties. Overall, she found that nurses' greatest limitations were in recognition and management of renal and neurological problems.

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