Applying nursing theory to the practice of nurse anesthesia
SUSAN A. MARTIN, CRNA, MSN
Destin, Florida

With the current movement of anesthesia education into graduate programs, changes in curriculum are inevitable. These changes will include advanced nursing theory. How the issues of nursing theory apply to the practice of nurse anesthesia are examined. Applications of Betty Neuman's systems theory are used in specific examples of the anesthesia role. The profession of nurse anesthesia may benefit significantly from the contributions of nursing theory.

Key words: Graduate education, Neuman systems model, nursing, nursing theory.

Introduction
The practice of nurse anesthesia has been historically defined from a functional perspective. This is readily illustrated by reviewing the Scope of Nurse Anesthesia Practice as defined by the American Association of Nurse Anesthetists (AANA). This publication summarizes 11 functions that outline and define the scope of practice of the nurse anesthetist. The majority of functions described are primarily "technical" in orientation, such as item f, which states that the scope of nurse anesthesia practice includes managing a patient's airway and pulmonary status using endotracheal intubation, mechanical ventilation, pharmacological support, respiratory therapy, or extubation.

Other functions addressed by the AANA reflect judgment-related challenges for the nurse anesthetist, such as selecting the appropriate anesthetic technique. When compared with current nursing practice acts, the scope of practice as defined by the AANA in 1992 is devoid of a conceptual or theoretical framework. The AANA has stated in its Standards for Nurse Anesthesia Practice its belief that "Standards, based upon sound philosophy, theory, science and principles, serve to upgrade clinical practice." The goal of this article is to explore existing theoretical principles of nursing and their potential application in nurse anesthesia education and practice. The significance of this goal is accentuated by the Council on Accreditation of Nurse Anesthesia Educational Programs’ Standards for Accreditation, which states that accredited programs must "design a curriculum that will award a master's or higher degree level to students who will enter the program on or after January 1, 1998, and who successfully complete graduation requirements." The National Commission on Nurse Anesthesia Education explains that the AANA has gradually increased the educational requirements in response to the demand for more complex services [which require] expanded knowledge and technological capabilities." This Council further requires that a program must adopt a curriculum plan and/or program design that is within the construct of graduate education. Requirements for graduate nursing education as determined by the
National League for Nursing include a mandate "to expand knowledge of nursing theory as a basis for advanced nursing practice." Subsequently, nursing theory courses are becoming mandatory curriculum in nurse anesthesia programs that are housed in colleges of nursing.

The appropriateness of the medical model traditionally used as a framework in nurse anesthesia programs is now being questioned, just as in the past nursing professionals and educators had questioned the use of the medical model in nursing. The medical model is described by Englehardt as "rejecting philosophical speculation and giving way to rational or logical decision making. Physicians use their clinical experience and observation of patients as a basis for developing reliable diagnoses and treatments. The goal has been in the 'tactik knowing' of medicine." Englehardt goes on to support the notion that medical practice, too, can benefit from a theoretical basis which may add an "analytic regard" to the tacit knowledge.

The question is simple: if the AANA feels that graduate education is important enough to mandate it as a curriculum requirement, should we then consider changes in the framework within which CRNAs practice? Unfortunately, the answer or solution is not so simple because nurse anesthetists must first recognize a theoretical void in their practice (considering one of the problems our profession faces is the notion that we are technicians and further considering that any profession must, by definition, be supported by a conceptual framework) and decide that it may be filled by the inclusion of a theoretical framework. Developing theory is not a simple undertaking. Perhaps the profession of nurse anesthesia would be better served by adopting and adapting theoretical nursing models on which the practice of nursing has been based. To facilitate a better understanding of nursing theory and nursing practice, it is necessary to review nursing theory in practice.

**Review of literature: Nursing theory in practice**

Practice is sometimes viewed as the "down to earth action carried out by the doers," while theory is viewed as somewhat esoteric, in some cases unnecessary or at best, marginal. Nursing theory influences nursing practice in a variety of ways. Fawcett suggests that nursing theory distinguishes nursing from medicine by directing our actions and controlling the clinical environment. This is accomplished through the ability of the theory to define the arena of nursing by defining clinical problems to be considered, settings in which nursing practice occurs, legitimate recipients of nursing care, and nursing process, format, and content.

Nursing models serve as the basis for clinical information systems (admission forms, care plans, and discharge summaries, to name a few). Conceptual models also guide the development of patient classification systems. Fawcett states emphatically that "nursing models were devised to move nursing away from ritualistic and task-oriented care to thoughtful practice." They were created to "shape nursing into what it ought to be." Speedy claims that nursing theory explains our practice by changing the way nursing is understood. This is accomplished through the testing of nursing theory in the clinical arena. Adapting basic scientific knowledge (validated by research) is the primary determinant of nursing practice. "Nursing practice so based in theory and research has a firm foundation far removed from trial and error, guesswork or intuition." Allen asserts that nursing theory empowers nurses to question the status quo. He points out that the aim of critical theory is to expose the contradictions, oppression, and power imbalances that inhibit the freedom and autonomy needed to develop as a profession. This requires the establishment of open, unconstrained communications, which will better assist patients in making informed choices about their care.

Critics of nursing theory argue that the process of incorporating nursing theory into practice may be too difficult to realistically achieve at the bedside. The application of theory may require greater conceptual sophistication of theoretical ideas, theories are often too vague and abstract to apply, the models are limited by the values and beliefs of their originators, and the credibility of nursing models is challenged when the patients see no difference in nursing care when a theoretical framework is used. Although the criticisms may be valid for generalists in nursing whose practice incorporates a wide range of specialties and skills, advanced specialty practitioners may benefit from an easier application of conceptual frames of reference by virtue of the more narrow focus of their practice. Benner defends nursing theory in practice by asserting that nurses are using theory in their daily practice but are unaware of the basis for their competence.

With these arguments and assertions in mind, Betty Neuman's nursing theoretical framework will be applied to the practice of nurse anesthesia. Neuman's theory is only one of several nursing theories that could be appropriately applied to anesthesia. Neuman has been chosen due to her orientation with systems theory, an approach that involves processes and outcomes and, thus, seems most appropriate to the practice of anesthesia.
The Neuman systems model

Neuman's model is based on an individual's relationship to stress, the reaction to it, and reconstitution factors that are dynamic in nature. The aim of this model, called the total person approach, is to provide a unifying focus for approaching varied nursing problems and for understanding the basic phenomenon: man and his environment. Neuman's theory is neatly classified as a systems theory that evaluates processes and outcomes toward greater organization. The person is defined by Neuman as an open, holistic system interacting with and to the environment. The environment is defined as "all that interfaces with the person." The environment is the source of stressors for the person that has the potential of disrupting the person's normal lines of defense (a normal range of responses to stress). Stressors may be beneficial or noxious depending on the strength of the flexible line of defense (an individual's combination of responses to stress). With humans in a constant state of change, interacting with the environment, varying degrees of wellness exist. If a person's total needs are met, that person is in a state of optimal wellness. Conversely, a reduced state of wellness is the result of unmet needs.

Three key concepts in Neuman's theory are stress, homeostasis, and patient perceptions. The nurse's role is to focus on variables affecting the person's response to stressors, allaying risk factors associated with them. The nurse assesses, manages, and evaluates the patient, acting to impede states of disorder. Interventions by the nurse, "can begin at any point at which a stressor is either suspected or identified. One would carry out the intervention of primary prevention since a reaction had not yet occurred, though the degree of risk or hazard was known or present. The intervener would attempt to reduce the possibility of the individual's encounter with the stressor or in some way attempt to strengthen the individual's flexible line of defense to decrease the possible reaction." The impact of multiple stressors can reduce the effectiveness of the person's buffer system allowing a reaction to a stressor to occur.

Discussion: Applying the Neuman systems model to anesthesia

Nurse anesthetists are nurses first, and as such view their role in terms of assessing, planning, implementing, and evaluating the care of the client. The unique scope of practice of the nurse anesthetist differs significantly from the other nursing specialties in that its primary focus includes:

1. Preanesthetic preparation and evaluation.

2. Anesthesia induction, maintenance, and emergence.

3. Postanesthesia care.

4. Perianesthetic and clinical support functions.

These functions of the nurse anesthetist, when considered in light of Neuman's framework, strive to support the normal line of defense of the client by impeding the stressors the client experiences (or remembers). The majority of actions carried out by the nurse anesthetist are directed at decreasing physical and emotional stress from the initial preoperative counseling, through the administration of anxiolytics, vagolytics, and anesthetics, to the postoperative follow-up visit. Neuman's theory also emphasizes the promotion of homeostatic balance in the maintenance of the person's whole system. Homeostasis is a concept that is well integrated in current anesthesia practice as evidenced by the constant vigilance required of the anesthetist during the delivery of anesthesia nursing care.

Neuman believes that although nurses receive training in the natural and behavioral sciences, they are expected to conceptualize it in their own way. She has developed many applications of her theory in order to provide meaningful ways of incorporating conceptual frames of reference into practice. One such way is in her assessment tool. This tool relates to the total person and considers three basic principles:

1. Good assessment requires knowledge of all the factors influencing a patient's perceptual field. (The identification of these factors takes place during the preanesthetic assessment.)

2. The meaning that a stressor has to the patient is validated by the patient as well as by the caregiver. (This is demonstrated in the preoperative classification of anxiety that serves to identify three distinct coping patterns in patients facing surgery. Nurse anesthetists may choose to give special counseling to patients classified with high- or low-level anticipatory anxiety, since these are associated with lack of participation by the patient during the postoperative period.)

3. Factors in the caregiver's perceptual field that influence assessment of the patient's situation should become apparent. (This principle is obviated by the use of the preanesthetic evaluation in developing the perioperative care plan.)

These few examples illustrate the ease and appropriateness of applying nursing theory to the practice of anesthesia.

Summary

Since nurse anesthesia programs have progressed to the realm of graduate education, it is...
fitting that theoretical frames of reference be incorporated into the practice of nurse anesthesia. As demonstrated in this article, this task can be easily accomplished and appropriately applied to the practice of nurse anesthesia. The primary obstacle with using nursing theory is not its complexity but the reluctance of the practitioners to accept nursing theory as a vital part of their professional development. This reluctance seems inconsistent with the usual dialogue of professionalism. A stronger foundation in nursing and a conceptual framework from which to practice are only a couple of the contributions made by nursing theory to nurse anesthesia. Further contributions have yet to be explored in the new marriage of anesthesia and graduate education.

REFERENCES

AUTHOR
Susan A. Martin, CRNA, MSN, is a recent graduate of Southern Illinois University at Edwardsville Nurse Anesthesia Program. She currently practices at Ft. Walton Beach Medical Center and Emerald Coast Surgery Center. She has earned two previous degrees in nursing: A BSN from Abilene Christian University in Abilene, Texas, and an MSN from the University of Texas Health Science Center in Houston, Texas. Her work experience is primarily in intensive care units, including cardiovascular, liver transplant, and pediatric units in Houston and Los Angeles.
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