NURSING CARE of the Critically Ill Surgical Patient

Rebecca G. Hathaway

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Foreword

One of the goals of surgical critical care nursing, in addition to the provision of excellent nursing care, is to expedite and facilitate use of the diverse services needed by people who are ill and who have undergone invasive, stressful surgical procedures. *Nursing Care of the Critically Ill Surgical Patient* provides a framework for addressing and understanding the problems of this specific patient population. Broad in scope and intensive in content, this text is the work of many clinically excellent contributors and includes an in-depth presentation of surgical aspects of adult critical care nursing.

Comprehensive and contemporary, the text integrates a strong foundation in nursing science with nursing process and nursing diagnosis through each phase of perioperative care. An interdisciplinary health care approach is emphasized, as well as psychosocial concepts, teaching, and the nurse/family/physician relationship.

The focus of the book moves from the general to the specific. Parts I, II and III take the practitioner through the preoperative, intraoperative and postoperative phases of care of the adult surgical patient. In each phase, the nursing process format is utilized to present information, with relevant AACN Standards of Care cross-referenced in an appendix, making this book an invaluable resource for the surgical critical care nurse.

Part IV systematically presents, as a reference guide, each major body system with common surgical diagnoses outlined. Each procedure is described, along with rationales for use, and a nursing care plan using nursing diagnoses outlines the specialized nursing care required by patients undergoing each procedure. Again, the integration of theory into practice, with nursing process reinforced, make this text a practical, valuable resource that will be used regularly by critical care nurses.

Parts I through III and Part IV may be used independently or interdependently. The information in Parts I through III is more generic and may be used by both nursing students in advanced medical-surgical courses as well as by experienced nurses in critical care areas. Part IV, with its emphasis on specific surgical procedures and specialized nursing care, should be used daily as a reference guide by the nurse caring for these patients, and should be an excellent tool for both experienced and student nurses for care planning purposes.

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Preface

The initial invitation to write a proposal for a textbook about the care of patients in a surgical intensive care setting soon became a mission. That mission included the goal to produce a textbook that was not only different but that *made a difference* in patient care and patient outcomes. There were the concomitant goals to have the text promote the professional standards of nursing that surround me each day and to present those standards in a manner that would appeal and be read by numerous audiences.

Nursing Care of the Critically Ill Surgical Patient is for you the professional nurse whether you are just beginning a chosen nursing career and starting the educational process or beginning your nursing practice for this first time in a critical care setting, changing your critical care focus by moving into a surgical setting or a seasoned veteran in the field seeking new resources to assist in the delivery of care to the critically ill patient.

We hope that this text will provide the learning and novice practitioner information in Parts I, II and III that will enhance your knowledge of patient care through a perioperative surgical focus. The perioperative approach may also serve as a useful text for the nurse educator and professional nurses caring for patients with multiple surgical diagnosis.

Part IV and Appendix A are unique features available as a reference guide for both the formulation and use of nursing diagnosis in the patient care planning process; and through the utilization of organizational standards.

Rebecca G. Hathaway, RN, MSN
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I would also like to acknowledge some very special individuals without whom the textbook would have never materialized.

First, my parents who supported me and guided me toward a professional nursing career. To them I am deeply grateful.

Secondly, to the professional nursing practiced at UCLA Medical Center. I would like to acknowledge the nursing leaders there who care about patient outcomes, research, the teaching mission and who are committed to professionalism needed to accomplish these three goals.

Lastly, but certainly not least, my husband Jim; who has taught me over the last five and one half years the meaning of both patience and perseverance. He has brought a true balance to my life. To him this book is dedicated. . . .

R.G.H.

Table of Contents

Part I

Preoperative Phase

Chapter 1

Preoperative Phase: Intervention

Suzanne Clark

The surgical intensive care unit (SICU) is a complicated, technical environment in which nurses must have a high degree of skill to monitor sophisticated equipment and medical therapy and to assess the patient's response to therapy. This is a vital part of nursing the critically ill surgical patient, but nurses may focus on equipment and tasks, foregoing a patient-centered approach. In this environment, nurses must plan interventions within a framework that promotes a broader approach to patient care. In this way, nurses can function independently and contribute a nursing perspective to the plan of care for the patient.

INTERVENTION AND THE NURSING PROCESS

Intervention is the action phase of the nursing process and follows the assessment, problem identification, planning, and goal-setting phases of the nursing process. It precedes the evaluation process in which patient outcomes are assessed in relation to identified goals. If the goals have been attained, interventions have been successful and the process is complete. If the goals have not been attained, the process must begin again. Interventions include intellectual, interpersonal, and technical activities.[1]

For interventions to be successful the following factors must be present: (1) A complete assessment, including data from the physiologic, psychologic, and social areas; (2) nursing diagnoses that are consistent with the data; and (3) goals that are specific and have been formulated with input from the patient. Further, the interventions must be (1) sound scientifically, based on theory from the basic sciences and current nursing research; (2) acceptable to and feasible for the patient and family; and (3) practical within the existing system for provision of care. If, for example, SICU nurses identify a need for a preoperative teaching program but the system does not support this in either time or money, this intervention is not feasible. Nurses must either give up that goal or, more importantly, find a way to achieve it.

FRAMEWORK FOR INTERVENTION IN THE PREOPERATIVE PHASE—PSYCHOPHYSIOLOGIC STRESS

Nursing interventions take on new meaning when they are planned and implemented within a framework that promotes the therapeutic role of the professional nurse. Although there is not a consensus among nurses on one specific approach to nursing practice, there is general agreement that the unique role of nurses is to care for and

about the patient as a whole person. Nurses are concerned with the person's positive adaptation to stress, illness, and hospitalization. All interactions with patients need to be planned with this basic premise in mind; that is, patients cannot be compartmentalized into diseases or systems. Rather, their responses to illness are complex, involving biologic and psychologic adaptations and requiring an adaptive response from those in their social system.

Nurses in the SICU must find a way to integrate this approach with the task-laden environment in which they work. The theory related to psychophysiologic stress provides a research-based framework for nursing interventions directed toward caring for the whole patient in this setting.[2–4]

Physiologic Response

Stress is the response of the body to internal or external stimuli. It is a neural-humoral response that involves activation of the sympathetic nervous and endocrine systems. Selye[5] described this response to a disturbance in homeostasis as occurring in stages. In the "alarm" stage—a preparation for "flight or fight" for survival of the organism—the pituitary gland excretes adrenocorticotropic hormone, which, in turn, stimulates the adrenal cortex to produce mineralocorticoids and glucocorticoids. The adrenal medulla is stimulated to produce epinephrine and norepinephrine. As a result blood supply increases to the brain, heart, and skeletal muscles; oxygen supply increases through increased respirations; glucose increases through gluconeogenesis to supply needed energy; and blood clotting is enhanced to speed repair if injury occurs. If exposure to a stressor continues, a stage of "resistance" follows in which glucocorticoids and other hormones are no longer secreted. Finally, if adaptation is not achieved, the stage of "exhaustion" ensues and, if this phase is not interrupted, death may occur.

Although the stress response is the defense mechanism of the body, in the critically ill patient problems arise from this response, especially if prolonged or if several sources of stress exist simultaneously. For instance, patients with compromised pulmonary or cardiovascular systems may be unable to meet the increased demands for oxygen and circulation dictated by the hypermetabolic state. Other problems include:

1. Depletion of fat stores and muscle wasting occurs as fat and protein are catabolized to meet energy demands.
2. Decrease in circulation to kidneys, as blood is shunted to vital organs, activates the renin-angiotensin system leading to further vasoconstriction.
3. Increase in lactic acid production results from decreased oxygen supply to nonessential organs.
4. Increase in blood clotting factors raises the risk of thrombus formation.
5. Retention of sodium and water to increase intravascular volume creates a potential for fluid overload.[6,7]
6. Disturbance in the immune response which increases susceptibility to infection.[8]

Elevated cortisol levels can affect wound healing in several important ways: (1) Inflammation—an important function in healing—can be blocked; (2) peripheral