THIRD EDITION

AACN'S

CLINICAL REFERENCE FOR CRITICAL-CARE NURSING

Marguerite R. Kinney
Donna R. Packa
Sandra B. Dunbar

AACN's Clinical Reference for Critical-Care Nursing

Marguerite Rodgers Kinney, RN, DNSc, FAAN
Professor of Nursing
School of Nursing
University of Alabama at Birmingham
Birmingham, Alabama

Donna Rogers Packa, RN, DSN
Professor of Nursing and
Associate Dean for Academic Affairs
University of Mississippi School of Nursing
Jackson, Mississippi

Sandra Byars Dunbar, RN, DSN, FAAN
Associate Professor and
Coordinator of Critical Care Nursing
Nell Hodgson Woodruff School of Nursing
Emory University
Atlanta, Georgia

Third edition

Mosby

St. Louis Baltimore Boston Chicago London Philadelphia Sydney Toronto

Mosby
Dedicated to Publishing Excellence

Publisher: Alison Miller
Editor: Theresa Van Schaik
Developmental Editor: Jeanne Rowland
Project Supervisor: Barbara Bowes Merritt
Editing and Production: The Bookmakers, Incorporated
Designer: David Zielinski

Notice

As new medical and nursing research and clinical experience broaden our knowledge, changes in treatment and drug therapy are required. The editors and the publisher of this work have made every effort to ensure that the drug dosage schedules herein are accurate and in accord with the standards accepted at the time of publication. Readers are advised, however, to check the product information sheet included in the package of each drug they plan to administer to be certain that changes have not been made in the recommended dose or in the contraindications for administration. This recommendation is of particular importance in regard to new or infrequently used drugs.

THIRD EDITION

Printed in the United States of America

Mosby–Year Book, Inc.
11830 Westline Industrial Drive
St. Louis, Missouri 63146

Library of Congress Cataloging-in-Publication Data

AACN's clinical reference for critical-care nursing / [edited by]
Marguerite Rodgers Kinney, Donna R. Packa, Sandra Byars Dunbar—
3rd ed.
p. cm.
Includes bibliographical references and index.
ISBN 0-8016-6452-7
1. Intensive care nursing. I. Kinney, Marguerite Rodgers.
II. Packa, Donna Rogers. III. Dunbar, Sandra Byars.
[DNLM: 1. Critical Care—nurses' instruction. WY 154 A112 1993]
RT120.I5A18 1993
610.73'61—dc20
DNLM/DLC
for Library of Congress 92-48549
CIP

93 94 95 96 97 GW/VH 9 8 7 6 5 4 3 2 1

About the Editors

MARGUERITE KINNEY is professor and coordinator of cardiovascular nursing at the University of Alabama at Birmingham. She is a former president of the American Association of Critical-Care Nurses and is a fellow of the American Academy of Nursing and a member of Sigma Theta Tau, the international honor society in nursing.

Dr. Kinney was born in Tuscaloosa, Alabama, and has lived all her life in the South. She received both the bachelor of science and the master of science in nursing from the University of Alabama and the doctor of nursing science from the Catholic University of America. Her research has been in the area of patient teaching, energy expenditure, nursing diagnosis, and quality of life.

DONNA PACKA is professor of nursing and Associate Dean for Academic Affairs at The University of Mississippi School of Nursing. Dr. Packa received her bachelor of science in nursing from Murray State University in Murray, Kentucky. She received the master of science in nursing and doctor of science in nursing degrees from the University of Alabama at Birmingham. Dr. Packa has served as a reviewer for *Focus on Critical Care* and was a member of the editorial board for *Heart & Lung*. She currently serves as a reviewer for the *American Journal of Critical Care*. Her research has examined quality of life in patients with chronic cardiac disease, caring behaviors of critical care nurses, and caring and noncaring behaviors of nurse managers.

SANDRA DUNBAR is associate professor and coordinator of critical care nursing in the Adult Health Program, Nell Hodgson Woodruff School of Nursing, Emory University in Atlanta, Georgia. She received the bachelor of science in nursing from the Florida State University in Tallahassee, master of nursing from the University of Florida, Gainesville, and was awarded the doctor of science in nursing from the University of Alabama at Birmingham. Her research has examined the effects of patient education after acute myocardial infarction, needs of families of critically ill patients, patient and family coping with treatment for life-threatening dysrhythmias, and chronobiological applications in nursing. Dr. Dunbar is a fellow of the American Academy of Nursing and has served as president of the American Association of Critical-Care Nurses.

Contributors

Thomas S. Ahrens, RN, DNSc, CCRN
Clinical Specialist, Critical Care
Barnes Hospital
St. Louis, Missouri
Chapters 27-30

Charold L. Baer, RN, PhD, FCCM, CCRN
Professor and Chair
Department of Adult Health and Illness
School of Nursing
Oregon Health Sciences University
Portland, Oregon
Chapters 8, 9, 34-36

Anne E. Belcher, RN, PhD
Associate Professor
School of Nursing
University of Maryland
Baltimore, Maryland
Chapter 16

Mary-Michael Brown, RN, MS, CCRN
Nursing Coordinator Cardiovascular Surgical Unit
Georgetown University Hospital
Washington, D.C.
Chapter 26

Alice E. Davis, RN, PhD, CCRN, CNRN
Assistant Professor, Adult Critical Care
Nell Hodgson Woodruff School of Nursing
Emory University
Atlanta, Georgia
Chapter 55

Mary Ann DiMola, RN, MA
Director of Corporate Education
St. Vincent's Health Group
Jacksonville, Florida
Chapter 53

Jeanne E. Doyle, RN, BSN
Executive Director of the Society of Peripheral Vascular Nursing
Boston University Medical Center
The University Hospital
Boston, Massachusetts
Chapter 25

Janice A. Drass, RN, BSN, CDE*
Senior Clinical Nurse
National Institutes of Health
Clinical Center Nursing Department
Bethesda, Maryland
Chapter 39

Sandra B. Dunbar, RN, DSN, FAAN
Associate Professor and Coordinator of Critical Care Nursing
Nell Hodgson Woodruff School of Nursing
Emory University
Atlanta, Georgia
Chapters 1, 17

Janet S. Eagan, RN, MSN
Clinical Instructor
Boston University Medical Center
The University Hospital
Boston, Massachusetts
Chapter 21

Dorrie K. Fontaine, RN, DNSc, CCRN
Associate Professor and Coordinator
Trauma/Critical Care Nursing
School of Nursing
University of Maryland
Baltimore, Maryland
Chapter 13

Maurene A. Harvey, RN, MPH, CCRN, FCCM
Nurse Educator
Consultants in Critical Care, Inc.
Glendale, California
Chapter 56

*The opinions expressed herein are those of the authors and do not necessarily reflect those of the National Institutes of Health, USPHS, U.S. Department of Health and Human Services, or Veterans Administrations.

Barbara J. Holtzclaw, RN, PhD, FAAN
Director of Research
Hugh Roy Cullen Professor of Nursing
School of Nursing
The University of Texas Health Science Center at San Antonio
San Antonio, Texas
Chapter 14

Mary Ann House-Fancher, RN, MSN, CCRN
Associate Professor
School of Nursing
University of Florida
Gainesville, Florida
Chapter 59

Molly Johantgen, RN, MSN
Critical Care Specialist
The Christ Hospital
Cincinnati, Ohio
Chapters 23, 25

Marguerite Rodgers Kinney, RN, DNSc, FAAN
Professor of Nursing
School of Nursing
University of Alabama at Birmingham
Birmingham, Alabama
Chapter 1

Karin T. Kirchhoff, RN, PhD, FAAN
Professor, College of Nursing
University of Utah
Director of Nursing Research
Department of Nursing
University of Utah Hospital
Salt Lake City, Utah
Chapter 3

Catherine Nuss Kotecki, RN, MS
Staff Nurse
Our Lady of Lourdes
Camden, New Jersey
Chapter 15

Joanne M. Krumberger, RN, MSN, CCRN
Critical Care Clinical Nurse Specialist
Milwaukee Veterans Administration Medical Center
Milwaukee, Wisconsin
Chapters 49, 50, 51

Diane Panton Lapsley, RN, MS, CS
Cardiovascular Clinical Nurse Specialist
West Roxbury Veterans Administration Medical Center
West Roxbury, Massachusetts
Chapter 24

Beverley J. Leyerle, RN, MPH, CCRN
Department of Surgery
Cedars-Sinai Medical Center
Los Angeles, California
Chapter 4

Teresa Choate Loriaux, RN, MSN, CDE
Managing Editor, *The Endocrinologist*
Portland, Oregon
Chapters 37-39

Anne M. McCoy, RN, MSN, CCRN
Critical Care Specialist
H. Lee Moffitt Cancer Center and Research Institute
Tampa, Florida
Chapter 48

Rhonda M. McLain, RN, MN, CCRN
Clinical Nurse Specialist, Critical Care/Emergency Services
Northlake Regional Medical Center
Atlanta, Georgia
Chapter 17

Aline Mierzejewski, RN, BSN, CCRN
Critical Care Patient Care Manager
H. Lee Moffitt Cancer Center and Research Institute
Tampa, Florida
Chapter 48

Pamela H. Mitchell, RN, PhD, ARNP, CNRN, FAAN
Professor of Physiological Nursing
University of Washington
Seattle, Washington
Chapters 18, 31-33

Anne M. Morrissey, BSN, MS, CCRN
Nurse Manager
Cardiac Catheterization Laboratory
Boston University Medical Center
The University Hospital
Boston, Massachusetts
Chapter 22

Glenda Nelson, RN, BSN
Staff Development Coordinator
DePaul Health Center
Bridgeton, Missouri
Chapter 27

Cynthia O'Sullivan, RN, MSN
Nurse Manager
Surgical Intensive Care Unit
Boston University Medical Center
The University Hospital
Boston, Massachusetts
Chapter 26

Donna Rogers Packa, RN, DSN
Professor of Nursing and
Associate Dean for Academic Affairs
University of Mississippi School of Nursing
Jackson, Mississippi
Chapter 1

Suzanne S. Prevost, RN, MSN, CCRN
Assistant Professor
Northwestern State University
Shreveport, Louisiana
Chapter 19

Kathleen A. Puntillo, RN, DNSc
Associate Professor of Nursing
Sonoma State University
Rohnert Park, California
Chapter 12

Julia Ann Purcell, RN, MN, CCRN
Clinical Nurse Specialist, Cardiology
Emory University Hospital
Atlanta, Georgia
Chapter 10

Juanita Reigle, RN, MSN, CCRN
Practitioner-Teacher
University of Virginia Health Sciences Center
Charlottesville, Virginia
Chapter 2

Cindy Hylton Rushton, RNC, MSN, FAAN
Clinical Nurse Specialist in Ethics
The Johns Hopkins Children's Center
Baltimore, Maryland
Chapter 2

Deborah L. Scherger, RN, CSPI
Charge Nurse
Rocky Mountain Poison and Drug Center
Denver, Colorado
Chapter 58

M. Michael Shabot, MD, FACS
Department of Surgery
Cedars-Sinai Medical Center
Los Angeles, California
Chapter 4

Claire E. Sommargren, RN, BSN, CCRN
Critical Care Staff Nurse
Instructor, Nursing Education Department
Dominican Santa Cruz Hospital
Santa Cruz, California
Chapter 5

Rae Nadine Smith, RN, MS
Clinical Nurse Specialist
President, Medical Communications and Associates
Salt Lake City, Utah
Chapter 4

Susan L. Smith, RN, MN
Clinical Nurse Specialist (Liver Transplantation)
Emory University Hospital
Atlanta, Georgia
Chapter 57

Ruth Stanley, PharmD
Clinical Pharmacy Specialist
Department of Veterans Affairs
Birmingham Veterans Administration Medical Center
Birmingham, Alabama
Drug Appendix

Susan L. Stewart, RN, MS, CCRN
Staff Nurse
Ellis Hospital
Schenectady, New York
Chapter 26

Nancy A. Stotts, MN, EdD
Associate Professor
University of California, San Francisco
San Francisco, California
Chapters 52, 54

Debra Tribett, RN, MS, CCRN
Critical Care Nurse Consultant
Edgewater, Maryland
Chapters 40-47

Nancie Urban, RN, MSN, CCRN
Cardiovascular Clinical Nurse Specialist
Waukesha Memorial Hospital
Waukesha, Wisconsin
Chapter 6

Carolyn D. Viall, RN, MSN, CNSN
Clinical Specialist
Caremark, Inc.
Cleveland, Ohio
Chapter 11

Joan Vitello-Cicciu, RN, MSN, CCRN, CS
Surgical Critical Care Clinical Specialist
Boston University Medical Center
The University Hospital
Boston, Massachusetts
Chapters 20-26

Gayle R. Whitman, RN, MSN
Director, Cardiothoracic Nursing
Cleveland Clinic Hospital
Cleveland, Ohio
Chapter 7

James B. Winkler, RN, MA
The Matrix Group
Jacksonville, Florida
Chapter 53

Jill A. Wooten, RN, BSN
Quality Assurance Coordinator
Home Health Agency of Chapel Hill
Chapel Hill, North Carolina
Chapter 53

Kathleen M. Wruk, RN, MHS
Managing Director
Rocky Mountain Poison and Drug Center
Denver, Colorado
Chapter 58

Reviewers

June C. Abbey, RN, PhD, FAAN
Vanderbilt University School of Nursing
Nashville, Tennessee

David S. Castelan, RN, BS, CCRN
Temple City, California

John Clochesy, RN, MS, CN, FCCM
Case Western Reserve University
Cleveland, Ohio

Pam Davis, RN, MN, CCRN
Emory University
Atlanta, Georgia

Margaret Doherty, RN, MS
Marin General Hospital
Kentfield, California

Maryellen K. Dye, RN, MSN
Hershey Medical Center
Hershey, Pennsylvania

Richard Eastman, MD
National Institutes of Health
Bethesda, Maryland

Roberta S. Erickson, RN, PhD
Oregon Health Sciences University
Portland, Oregon

Marcus Foreman, RN, PhD
University of Illinois, Chicago
Chicago, Illinois

Jan Foster, RN, MSN, CCRN
The University of Texas
M.D. Anderson Cancer Center
Houston, Texas

Dyrie M. Francis, RN, MSN, CCRN
Mercy Hospital
Miramar, Florida

Divina Grossman, RN, PhD
Florida International University
Miami, Florida

Marge Hamilton, RN, MSN
Camden County College
Blackwood, New Jersey

Mairead Hickey, RN, EdD
Brigham and Women's Hospital
Boston, Massachusetts

Ann Hoher, RN, MSN, CCRN, CS
St. Mary's Hospital
Rochester, Minnesota

Rosemary Lee, RN, MSN, CCRN, CNS
Cedars Medical Center
Miami, Florida

D. Lynn Loriaux, MD, PhD
Oregon Health Sciences University
Portland, Oregon

Susan McMillan, RN, PhD
University of South Florida
Tampa, Florida

Lorna Schumann, RN, PhD, CCRN
Post Falls, Idaho

Sharon A. Siegelski, RN, MS
H. Lee Moffitt Cancer Center and Research Institute
Tampa, Florida

Allen Spanier, MD, FRCS(C), CSPQ
McGill University
Montreal, Quebec

Mary Tesler, RN, MS
University of California, San Francisco
San Francisco, California

Ann B. Townsend, RN, BSN
Cardiology Associates
Cherry Hill, New Jersey

Rita Vargo, RN, MSN, CCRN
Cleveland Clinic Foundation
Cleveland, Ohio

Cheryl L. Wooten, RN, MSN
Scripps Memorial Hospital
LaJolla, California

Foreword

As we enter the twenty-first century, the needs of critically ill patients will be more complex and the critical care environment more technologically sophisticated than ever before. Preparing for the future will require commitment from practitioners to acquire the knowledge and develop the competencies to assure their ability to optimally contribute to a health care system that is driven by the needs of patients

Critical Care Patient of the Future

As life expectancy increases, there will be more demand for care of the elderly with critical illnesses. The impact of immunological and genetic advances in the treatment of disease will present new issues and challenges when caring for patients. The acuity level of critically ill patients will be higher, requiring a 25% increase in the required hours of professional nursing care over the next decade. Patient and family involvement in health care decisions and the knowledge required to make those decisions will be greater than ever.

Critical Care Environment of the Future

The complexity of the critical care environment in the future will continue to increase. Technological advances will push the limits of how we currently support patients. New cardiac, pulmonary, and renal assist devices will provide vital support when organs fail, allowing patients to survive previously fatal illnesses. Noninvasive methods for assessment and monitoring of critically ill patients will significantly reduce iatrogenic complications which are prevalent today.

The interface of bedside technologies with clinical information systems will expand the automated control of cardiopulmonary function. Cardiopulmonary stability and optimal organ functioning will be enhanced as continuous physiological data (e.g., arterial blood gases, potassium and glucose levels) are interpreted by computers and sophisticated algorithms will guide pharmacological and mechanical ventilator inverventions automatically.

Critical Care Practitioners of the Future

Critical care practitioners of the future will have greater autonomy, decision making capabilities, and more responsibility for the coordination of the patient experience. These changes, coupled with the environmental changes in critical care, will require integrated thinking. As practitioners care for patients and their families, the ability to consider various perspectives—physiological, psychological, emotional, social, organizational—will be pivotal to achieving optimal patient outcomes. Practitioners working in an interdependent manner, with a patient needs–driven framework, will be able to make their optimal contribution.

Preparing for the Future

High levels of knowledge acquisition will be required to meet the increasingly complex needs of the critically ill patient across the life span. Knowledge is a fundamental component of competent, caring nursing practice. It is essential to understand the phenomenon of the critical illness experience if practitioners are to make their optimal contribution to patient care. *AACN's Clinical Reference for Critical-Care Nursing,* 3rd ed., provides an in-depth, knowledge source for critical care nurses as they prepare for the future. Each edition of the text has updated and expanded information and issues of importance to critical care practitioners. The authors have succeeded in providing current, essential information about the disease entities which lead to critical illness, and the therapeutic management and technologies associated with critical care. The emphasis on research-based nursing interventions abounds throughout the text. Most importantly, the authors have shared with the reader a sense of how the illness experience impacts the patient and family and the profound impact that humanistic nursing care can have on meeting the needs of the critically ill.

Marianne Chulay, RN, DNSc
Clinical Nurse Specialist
Critical Care Nursing
Clinical Center, National Institutes of Health
Bethesda, Maryland
President, American Association of Critical-Care Nurses (1992-1993)

Preface

The publication of the third edition of this text provides an opportunity to reflect on the evolution of the specialty since 1981 when the first edition became available. Many of the maladies that affect the lives of human beings so profoundly are still with us, e.g., trauma, acute myocardial infarction, adult respiratory distress syndrome, and many others. What has changed significantly is the approach to managing patients with these maladies. A classic example is circulatory assist devices. In the first edition, many pages were devoted to the intraaortic balloon pump with only brief mention of left heart assist devices. Today, an impressive array of technology is available to support the left ventricle, the right ventricle, or both ventricles. And these devices are now being used for months rather than days as was true in the early 1980s.

In the Preface to the First Edition, we espoused several values underpinning the care of the critically ill and these remain significant to critical care nursing today: holism, collaboration, and the right of patients to receive care from a knowledgeable, skillful, and caring nurse. Perhaps these values will never change if they are truly fundamental to nursing practice.

In the second edition, we spoke of evolution and expansion. Because of an evolution in the conception of what critical care nursing is all about, the second edition included a section on phenomena of concern to nursing, for example, pain, nutrition, sleep, and others for which nursing care plays a large role in a satisfactory patient outcome. We said then that additional important phenomena would likely emerge as the evolution continues, and indeed they have; in this edition we have added the concepts of family care and adaptive capacity to the list. In addition, what we know about these phenomena and patients' responses to them has continuously grown as nurse investigators have worked to gain understanding.

In this third edition, state-of-the-art information has been contributed by colleagues who are at the forefront of knowledge in their areas of expertise. To the instrumentation chapter we added a section on computers in critical care. Occupational hazards, the number one on-the-job concern of critical care nurses, is a new addition to the text. Reflecting the major public health problem of our times, an entire chapter is devoted to AIDS. A new chapter has also been added focusing on chemical dependency, another contemporary health problem in American society. In light of the growing number of elders, a chapter has been added that discusses the special needs of this group in critical care. Finally, the Appendix on drugs frequently used in critical care incorporates easy-to-use tables that place important information at the nurse's fingertips.

The first edition includes this quote from the writings of Aldous Huxley:

> Man is a multiple amphibian living in many worlds at once; he lives in the world of the individual and the world of society; he lives in the world of symbols and in the world of given heredity and of acquired cultural values; and everything that happens to so complex a human being must necessarily have multiple causes.

As the specialty of critical care continues to evolve, we work to understand more about this complex human being and his individual and shared worlds. We also seek understanding of the influences of heredity and acquired cultural values on human responses to health problems and therapeutic interventions. We know that the quest for understanding will never end.

As always in a comprehensive work there are many to whom we express our gratitude: the contributors who share their knowledge so freely; our friends at Mosby–Year Book, especially Jeanne Rowland, Terry Van Schaik, Jane Petrash, and Don Ladig; David Umla at The Bookmakers; our editorial assistants June McKaig, Muriel Wright, and Claudia Osa; our reviewers Pete Stribling, Kathy Thaggard, Cathy Chambleiss, and Lee Craft; and, in some cases, previous authors whose work provided an important foundation, specifically Catherine A. Acres, Judith L. Albright, Rochelle L. Boggs, Sheila M. Campbell, Elizabeth A. Chaney, Diane M. Cooper, Susan B. Christoph, Anne J. Davis, Richard A. deAsla, Reba Felks-McVay, Sister Mary Rebecca Fidler, Marsha D. M. Fowler, Sheila A. Glennon, Jonathan Gottlieb, Doris S. Greiner, Eileen Griffin, Jeanette Hartshorn, Cynthia A. Horvath, Brenda S. Jackson, Mary Brown Jones, Patricia Kallweit Kaldor, Mary Frances Keen,

Ruth Kelleker, Jane S. Martin, Vickie White Matus, Linda J. Miers, Marjorie S. Morgan, Beverly McKenna, Sarah J. Sanford, Sister Maurita Soukup, June Stark, Susan Stewart, Elizabeth A. Trought, and Robert F. and Jacqueline A. Wilson.

Finally, we wish to acknowledge those close to us whose lives are also affected by a project of this magnitude. To Bob and Meredith, Joe, Sherri and Susie, and David and Lindsay we simply say thank you and hope these two words convey all that we cannot adequately express.

Marguerite Rodgers Kinney
Donna Rogers Packa
Sandra Byars Dunbar

Contents

PART ONE

Conceptual Foundations for Critical Care Nursing Practice

1

Introduction to Critical Care Nursing

Marguerite R. Kinney

Donna R. Packa

Sandra B. Dunbar

The evolution of critical care units in the general hospitals of the United States is a contemporary phenomenon, but the concept of critical care nursing is not new. Florence Nightingale recognized the importance of placing wounded soldiers who were the sickest in locations where they would receive careful surveillance from the attending nurses.[1] Louisa May Alcott wrote that during the Civil War she held her watch over the sickest and most helpless soldiers.[2] And so it seems that vigilance has played an important role in shaping our view of critical care nursing. But is vigilance sufficient to describe critical care nursing and to differentiate it from other nursing practice specialties?

Hawken[3] analyzed definitions of critical care nursing found in current texts and concluded that none of the proposed definitions clearly differentiated critical care nursing from other specialties. She asked: Does critical care encompass a concept, population, group of services, or environment? What is the role, scope, and focus of critical care?

Documents from the American Association of Critical-Care Nurses (AACN) address critical care nursing as a concept. Building on the American Nurses' Association's (ANA) definition of nursing,[4] the AACN defines critical care nursing as that specialty within nursing which deals with human responses to life-threatening problems.[5] A federal panel emphasizes a population group by stating that "critical care encompassed all patients whose conditions were totally unstable, totally nursing dependent, requiring sophisticated technologies and thus requiring many hours of care per patient."[6] A definition emerging from a forum sponsored by the Foundation for Critical Care encompasses services and environment as well as population group. Participants in the forum defined critical care as "the immediate care of patients with either illness or injury that threatens life or significant disability. It also includes care of patients, at high risk of critical events, who require monitoring in an intensive care (ICU) setting. Quality critical care is that which maximizes the possibility of full recovery or, alternatively, minimizes pain and suffering."[7] A final definition, also emerging from a national conference, emphasizes concept and services. Pioneers in the field of critical care proposed that critical care is directed toward acute, life-threatening illnesses or injuries that are reversible by medical intervention and require minute-to-minute observation and diagnosis as well as rapid therapy to reverse physiological derangements.[8]

SCOPE OF CRITICAL CARE NURSING PRACTICE

Recognizing the limitations inherent in any brief and concise definition of critical care nursing, AACN elaborates on its definition through a description of the scope of critical care nursing practice.[9] The scope is defined by the dynamic interaction of the critically ill patient, the critical care nurse, and the critical care environment (Figure 1-1). Critical care nursing is goal directed and endeavors to ensure effective interaction of these three requisite elements to bring about competent nursing practice and optimal patient outcomes within an environment supportive of both. The framework within which critical care nursing is practiced is based on a scientific body of knowledge, the application of that knowledge through the nursing process, and multidisciplinary collaboration in the care of the patient.

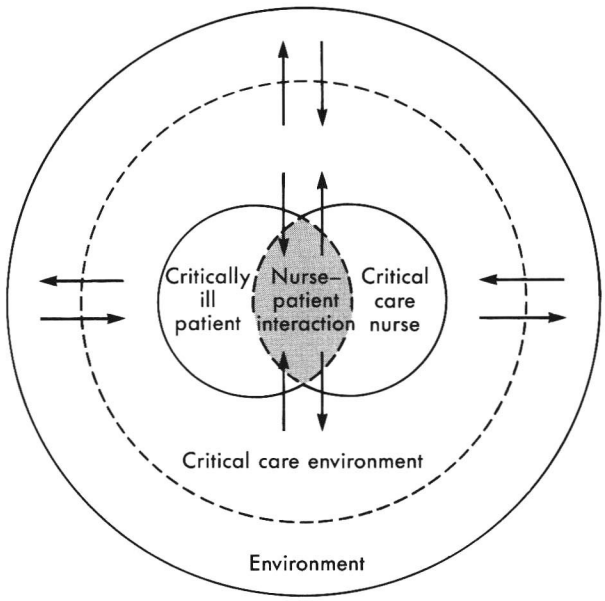

Figure 1-1 The scope of critical care nursing.
From American Association of Critical-Care Nurses. (1986). *AACN scope of practice*. Newport Beach, CA: Author.

The Critically Ill Patient

The scope of critical care nursing recognizes the centrality of the critically ill patient who has life-threatening problems or is at high risk for developing such problems. Because of the illness, the patient requires constant and intensive multidisciplinary assessment and intervention to restore stability, prevent complications, and achieve and maintain optimal responses.

In recognition of critically ill patients' primary need for restoration of physiological stability, the critical care nurse coordinates interventions directed at resolving life-threatening problems. Nursing activities also focus on support of the patient's adaptation, restoration of health, and preservation of the patient's rights, including the right to refuse treatment to the extent permitted by law, or to die. Inherent in the patient's response to critical illness is the need to maintain psychological, emotional, and social integrity. The familiarity, comfort, and support provided by social relationships can enhance effective coping. Therefore, the concept of the critically ill patient includes the interaction and influence of the patient's family or significant other(s).

The Critical Care Nurse

The critical care nurse is a licensed professional who is responsible for ensuring that all critically ill patients receive optimal care. Basic to accomplishing this goal is individual professional accountability through adherence to standards of nursing care of the critically ill and through a commitment to act in accordance with ethical principles.

Critical care nursing practice encompasses the diagnosis and treatment of a patient's responses to life-threatening health problems. The critical care nurse is the one constant in the critical care environment and is responsible for coordination of the care delivered by many different health care providers. With the nursing process as a framework, the critical care nurse uses independent and collaborative interventions to restore stability, prevent complications, and achieve and maintain optimal patient responses. Independent nursing interventions are those actions which are in the unique realm of nursing and include manipulation of the environment, teaching, counseling, and initiating referrals. Collaborative nursing interventions are actions determined through multidisciplinary collaboration. Underlying the application of these interventions is a holistic approach that expresses human warmth and caring. This art, in conjunction with the science of critical care nursing, is essential to the interaction between the critical care nurse and critically ill patient in attaining optimal outcomes.

Because the critical care environment is constantly changing, the critical care nurse must respond effectively to the demands created by this environment for the broad application of knowledge. Essential for maintaining competency in critical care nursing is a commitment to ongoing education concurrent with an expanding base of experience.

Education and preparation for critical care nursing should be consistent with standards for critical care nursing education and practice. The AACN's *Education Standards for Critical-Care Nursing*[10] specify goals for providing high-quality critical care education. The text includes structure standards, which identify those features that must be in place for a successful educational program or activity to occur, as well as process standards, which include all stages of an educational program.

The Critical Care Environment

The critical care environment can be viewed from three perspectives. On one level the critical care environment is defined by those conditions and circumstances surrounding the direct interaction between the critical care nurse and the critically ill patient. The immediate environment must constantly support this interaction to achieve desired patient outcomes. Adequate resources, in the form of readily available emergency equipment, needed supplies, effective support systems for managing emergent patient situations, and measures for ensuring the patient's safety,