GLOBAL EDITION

Maternal & Child Nursing Care

FOURTH EDITION

Marcia L. London • Patricia A. Weiland Ladewig • Michele R. Davidson
Jane W. Ball • Ruth C. McGillis Bindler • Kay J. Cowen

ALWAYS LEARNING

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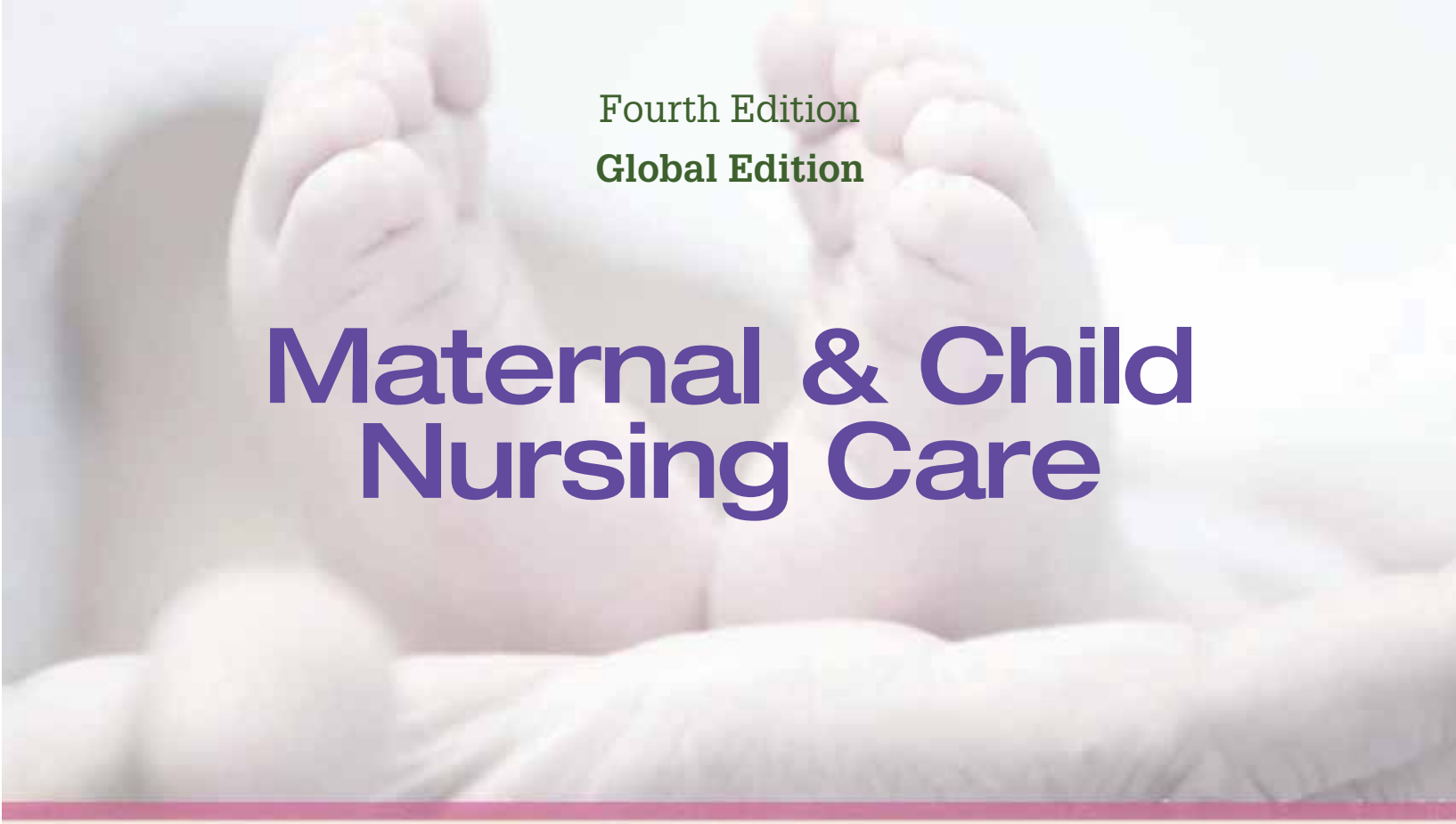
Brief Contents



Fourth Edition

Global Edition

Maternal & Child Nursing Care

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About the Authors

MARCIA L. LONDON Marcia L. London received her BSN and School Nurse Certificate from Plattsburgh State University in Plattsburgh, New York, and her MSN in pediatrics as a clinical nurse specialist from the University of Pittsburgh in Pennsylvania. She worked as a pediatric nurse and began her teaching career at Pittsburgh Children's Hospital Affiliate Program. Mrs. London began teaching at Beth-El School of Nursing and Health Science in 1974 (now part of the University of Colorado, Colorado Springs) after opening the first intensive care nursery at Memorial Hospital of Colorado Springs. She has served in many faculty positions at Beth-El, including assistant director of the School of Nursing. Mrs. London obtained her postmaster's Neonatal Nurse Practitioner certificate in 1983 and subsequently developed the Neonatal Nurse Practitioner (NNP) certificate and the master's NNP program at Beth-El. She is active nationally in neonatal nursing and was involved in the development of National Neonatal Nurse Practitioner educational program guidelines. Mrs. London pursued her interest in college student learning by taking doctoral classes in higher education administration and adult learning at the University of Denver in Colorado. She feels fortunate to be involved in the education of her future colleagues and teaches undergraduate education. Mrs. London and her husband, David, enjoy reading, travel, and hockey games. They have two sons. Craig, who lives in Florida with his wife, Jennifer, works with Internet companies. Matthew works in computer teleresearch. Both are more than willing to give Mom helpful hints about computers.

PATRICIA A. WIELAND LADEWIG Patricia A. Wieland Ladewig received her BS from the College of Saint Teresa in Winona, Minnesota; her MSN from Catholic University of America in Washington, D.C.; and her PhD in higher education administration from the University of Denver in Colorado. She served as an Air Force nurse and discovered her passion for teaching as a faculty member at Florida State University. Over the years, she taught at several schools of nursing. In addition, she became a women's health nurse practitioner and maintained a part-time clinical practice for many years. In 1988, Dr. Ladewig became the first director of the nursing program at Regis College in Denver. In 1991, when the college became Regis University, she became academic dean of the Rueckert-Hartman College for Health Professions. Under her guidance, the School of Nursing has added a graduate program. In addition, the college has added a School of Physical Therapy and a School of Pharmacy. In 2009 Dr. Ladewig became Vice President for Academic Affairs, and in 2012 she became Provost at Regis University. She and her husband, Tim, enjoy skiing, baseball games, and traveling. However, their greatest pleasure comes from their family: son Ryan, his wife Amanda, and grandchildren Reed and Addison Grace; and son Erik, his wife Kedri, and grandchildren Emma and Camden.

MICHELE R. DAVIDSON Michele R. Davidson completed her ADN degree from Marymount University and worked in multiple women's health specialty areas including postpartum, newborn nursery, high-risk nursery, labor and delivery, reproductive endocrinology, gynecology medical-surgical, and oncology units as a registered nurse while obtaining a BSN from George Mason University. Dr. Davidson earned her MSN and a nurse-midwifery certificate at Case Western Reserve University and continued to work as a full-scope nurse-midwife for 16 years. She has delivered over 1,000 babies during her career as a nurse-midwife. She completed her PhD in nursing administration and healthcare policy at George Mason University (GMU) and began teaching at GMU in 1999 while continuing in her role as a nurse-midwife. Dr. Davidson serves as the Coordinator for the PhD program in the School of Nursing. She has an interest in women's mental health and focuses her research on perinatal and postpartum mood and anxiety disorders. Dr. Davidson also has an interest in the care of individuals with disabilities and serves as a member of the Loudoun County Disability Advisory Committee and is a disability advocate in her community. She was a member of the American College of Nurse-Midwives Certification Council, the body that writes the national certification examination for certified nurse-midwives. She is a member of numerous editorial and advisory boards and has a passion for writing. In 2000, Dr. Davidson developed an immersion clinical experience for GMU students on a remote island in the Chesapeake Bay. In 2003, she founded the Smith Island Foundation, a nonprofit organization in which she served as executive director for eight years. Dr. Davidson has also completed certifications in lactation consulting, forensic nursing, and surgical first assistant. In 2012, her book, *A Nurse's Guide to Women's Mental Health*, won an American Journal of Nursing Book Award. In her free time, she enjoys spending time with her mother, writing, gardening, Internet surfing, and spending time on Smith Island with her nurse-practitioner husband, Nathan, and their four active children, Hayden, Chloe, Caroline, and Grant. Dr. Davidson and her family love the Eastern Shore of Maryland and continue to be part-time residents of Smith Island.

JANE W. BALL Jane W. Ball graduated from The Johns Hopkins Hospital School of Nursing, and subsequently received a BS from The Johns Hopkins University. She worked in the surgical, emergency, and outpatient units of the Johns Hopkins Children's Medical and Surgical Center, first as a staff nurse and then as a pediatric nurse practitioner. Thus began her career as a pediatric nurse and advocate for children's health needs. Jane obtained both a master of public health and doctor of public health degree from the Johns Hopkins University Bloomberg School of Public Health with a focus on maternal and child health. After graduation she became the chief of child health services for the Commonwealth of Pennsylvania Department of Health. In this capacity she oversaw the state-funded well-child clinics and explored ways to improve education for the state's community health nurses. After relocating to Texas, she joined the faculty at the University of Texas at Arlington School of Nursing to teach community pediatrics to registered nurses returning to school for a BSN. During this time she became involved in writing her first textbook, *Mosby's Guide to Physical Examination,* which is currently in its eighth edition. After relocating to the Washington, D.C., area, she joined the Children's National Medical Center to manage a federal project to teach instructors of emergency medical technicians from all states about the special care children need during an emergency. Exposure to the shortcomings of the emergency medical services system in the late 1980s with regard to pediatric care was a career-changing event. With federal funding, she developed educational curricula for emergency medical technicians and emergency nurses to help them provide improved care for children. A textbook entitled *Pediatric Emergencies, A Manual for Prehospital Providers* was developed from these educational ventures. She served as the executive director of the federally funded Emergency Medical Services for Children National Resource Center for 15 years, providing consultation and resource development for state health agencies, health professionals, families, and advocates to improve the emergency healthcare system for children. Dr. Ball is a consultant for the American College of Surgeons, assisting states to develop and enhance their trauma systems. She is also the managing investigator on an Emergency Medical Services for Children grant to evaluate the implementation of an emergency department recognition program for pediatric care in Delaware.

RUTH C. MCGILLIS BINDLER Ruth Bindler received her BSN from Cornell University–New York Hospital School of Nursing in New York. She worked in oncology nursing at Memorial–Sloan Kettering Cancer Center in New York, and then moved to Wisconsin and became a public health nurse in Dane County. Thus began her commitment to work with children as she visited children and their families at home, and served as a school nurse for several elementary, middle, and high schools. As a result of this interest in child healthcare needs, she earned her MS in child development from the University of Wisconsin. A move to Washington State was accompanied by a new job as a faculty member at the Intercollegiate Center for Nursing Education in Spokane, Washington, now the WSU College of Nursing. Dr. Bindler has been fortunate to be involved for 38 years in the growth of this nursing education consortium, which is a combination of public and private universities and offers undergraduate and graduate nursing degrees. She has taught theory and clinical courses in child health nursing, cultural diversity, graduate research, pharmacology, and assessment; served as lead faculty for child health nursing; was the first director of the PhD program; and most recently served as Associate Dean for Graduate Programs, which includes Master of Nursing, Post-Masters certificates, and PhD and Doctor of Nursing Practice (DNP) programs. She recently retired from this position and serves the college and profession as a professor emeritus, continuing work with graduate students and research. Her first professional book, *Pediatric Medications*, was published in 1981, and she has continued to publish articles and books in the areas of pediatric medications and pediatric health. Her research was focused in the area of childhood obesity, type 2 diabetes, and cardiovascular risk factors in children. Ethnic diversity and interprofessional collaboration have been other themes in her work. Dr. Bindler believes that her role as a faculty member and administrator has enabled her to learn continually, to foster the development of students in nursing, and to participate fully in the profession of nursing. In addition to teaching, research, publication, and leadership, she enhances her life by service in several professional and community activities, and by outdoor activities with her family.

KAY J. COWEN Kay Cowen received her BSN degree from East Carolina University in Greenville, North Carolina, and began her career as a staff nurse on the pediatric unit of North Carolina Baptist Hospital in Winston Salem. She developed a special interest in the psychosocial needs of hospitalized children and preparing them for hospitalization. This led to the focus of her master's thesis at the University of North Carolina at Greensboro (UNCG) where she received a Master of Science in Nursing Education degree with a focus in maternal child nursing. Mrs. Cowen began her teaching career in 1984 at UNCG, where she continues today as Clinical Professor in the Parent & Child Nursing Department. Her primary responsibilities include coordination of the pediatric nursing course, teaching classroom content, and supervising a clinical group of students. Mrs. Cowen shared her passion for the psychosocial care of children and the needs of their families through her first experience as an author of the chapter "Hospital Care for Children" in *Child Health Nursing: A Comprehensive Approach to the Care of Children and Their Families*, published in 1993. In the classroom Mrs. Cowen realized that students learn through a variety of teaching strategies, and she became especially interested in the strategy of gaming. She led a research study to evaluate the effectiveness of gaming in the classroom and subsequently continues to incorporate gaming in her teaching. In the clinical setting Mrs. Cowen teaches her students the skills needed to care for patients and the importance of family-centered care, focusing on not only the physical needs of the child but also the psychosocial needs of the child and family. During her teaching career, Mrs. Cowen has continued to work part time as a staff nurse, first on the pediatric unit of Moses Cone Hospital in Greensboro and then at Brenner Children's Hospital in Winston Salem. In 2006 she became the part-time pediatric nurse educator in Brenner's Family Resource Center. Through this role she is able to extend her love of teaching to children and families. Through her role as an author, Mrs. Cowen is able to extend her dedication to pediatric nursing and nursing education. She is married and the mother of twin sons.

Thank You!

We are grateful to all the nurses, both clinicians and educators, who reviewed the manuscript of this text. Their insights, suggestions, and eye for detail helped us prepare a more relevant and useful book, one that focuses on the essential components of learning in the fields of maternal, newborn, and child health nursing.

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Dedication

Throughout the ages, nurses have cared for families, fathers, mothers, and their children—treating, healing, soothing, educating, and advocating.

And so we dedicate this book to nurses—

For their wisdom, expertise, and compassion
For their willingness to challenge the system when necessary
For their ability to remain strong during times of difficulty and stress
And for their unfailing commitment to the families they assist.

And to nursing students everywhere—

For seeking to serve others when so many have become self-serving
For committing their minds and talents to a proud profession
For accepting the challenges posed by the changes in health care
And for daring to envision a brighter tomorrow.

Then, too, as always, we honor our beloved families—

David London, Craig, Jennifer, and Matthew
Tim Ladewig, Ryan, Amanda, Reed and Addison Grace; Erik, Kedri, Emma, and Camden
Nathan Davidson, Hayden, Chloe, Caroline, and Grant
Ronald Ball
Julian Bindler, Dana and Brady, Ross and Cami
Fred Cowen III, Benjamin and Marcia, Michael and Caroline

Preface

Faculty and students in today's maternity and pediatric nursing courses face a wide variety of issues and challenges. Courses are increasingly shortened, clinical experiences are more limited, and patients in hospitals are often more seriously ill. Time is precious for both students and faculty, and competence in nursing practice is essential. Changes in healthcare delivery stem from the Affordable Care Act, and new regulations offer challenges to the student and faculty member. The primary goal in this edition is to present key content in an accurate, readable format that helps students and faculty focus on what is important. This textbook helps students develop the skills and abilities they need now and in the future in an ever-changing healthcare environment. This is done through the Learning Outcomes and the Critical Concept Review feature at the end of each chapter, through the illustrations and photographs that clarify concepts more efficiently than words can do, and through the electronic resources at www.pearsonglobaleditions.com/London, which depicts clinical situations and requires students to engage in critical thinking. In its structure, format, and delivery, this text provides a concise look at maternal–newborn, women's health, and pediatric nursing.

ORGANIZATION

The organization of the text also reflects a time-saving approach. As educators and nurses, we know how difficult it is to teach everything that students need to learn in so little time. Consequently, we sought to reduce duplication in the text by carefully integrating maternity and pediatric nursing topics. For example, two introductory chapters address concepts important for maternal, newborn, and child nursing. Chapter 1 discusses introductory concepts of family-centered care, health promotion, community and home care, evidence-based practice, legal issues, as well as the complex ethical considerations related to reproductive decisions, cord blood banking, stem cell research, terminating life-sustaining treatment, and organ transplantation issues. Chapter 2 addresses concepts that are important for culturally appropriate care for the entire family, such as cultural norms related to childbearing and childrearing, cultural assessment, and complementary and alternative therapies. Throughout the text we cross-reference to other chapters to avoid the duplication of content, and we have worked to eliminate potentially conflicting information.

Subsequent chapters focus on reproductive issues and women's health, pregnancy, birth processes, postpartum care, and newborn management. The maternal–newborn chapters begin with basic theory followed by nursing assessment and nursing care for essentially healthy women or infants. Complications of a specific period appear in the last chapter or chapters of each section. The second half of the text transitions into the pediatric care chapters. The pediatric chapters begin with introductory concepts, such as growth and development, nutrition, assessment, health promotion for children ranging from newborn to adolescents, and care of the child in the community and hospital settings. Chapters 45 through 58 cover the nursing care of children with various disorders, organized by body system.

IMPORTANT THEMES IN THIS EDITION

Central to this edition are several key themes that are increasingly evident in nursing care of childbearing and childrearing families.

Family-Centered Nursing Care

Nursing care for pregnant women and children is a family-centered process, and it is essential to providing culturally competent care. The underlying philosophy of *Maternal & Child Nursing Care* is simple: We believe that family members are co-participants in care during pregnancy and childbirth. Parents must be integrated into the care of an infant or child at any stage of development, as they are the central influence on the child's life. Families experience the excitement and exhilaration of welcoming a healthy infant into their home, but they also experience sorrow and concern when a health problem occurs. Nurses play a pivotal role in helping families celebrate the normal life processes associated with birth, in promoting the health of the family and child, in fostering the child's growth and development from infancy through adolescence, and in caring for the child with any health condition. We are committed to providing a text that integrates the needs of families across the continuum from conception through adolescence.

Health Promotion

As nurses and educators, we are supportive of the goals and objectives of *Healthy People 2020*. This science-based effort provides a 10-year agenda for improving the health and well-being of the nation. Throughout the text, we have incorporated content reflecting the objectives of the project as they relate to childbearing families, infants, children, and adolescents.

We also subscribe to the paradigm that all childbearing and childrearing families and children need health promotion and health maintenance interventions, no matter where they seek health care or what health conditions they may be experiencing. Families may visit offices or other community settings specifically to obtain health supervision care. Nurses may also integrate health promotion and health maintenance into the care for childbearing and childrearing families and for children with acute and chronic illness in a variety of inpatient and outpatient settings. The inclusion of *Healthy People 2020* initiatives throughout the text integrates the national public health efforts to improve healthcare outcomes and assists nursing students and nurses with integrating healthcare policy into practice. This textbook provides health promotion and health maintenance content throughout, most visibly in four chapters: Chapter 5, *Promoting Healthcare for Women*; Chapter 35, *Health Promotion and Maintenance: General Concepts, the Newborn, and the Infant*; Chapter 36, *Health Promotion and Maintenance: The Toddler, the Preschooler, and the School-Age Child*; and Chapter 37, *Health Promotion and Maintenance: The Adolescent*.

In addition, a feature entitled **Health Promotion** summarizes the needs of women from preconception to postpartum, newborns, and children with specific chronic conditions, such as asthma or diabetes. These overviews teach the student to look at the child with a chronic illness like any other child, with health maintenance needs for prevention, education, and basic care.

Nursing Care in the Community

Most maternity and pediatric nursing care occurs in the community setting, especially since most children and pregnant women are healthy and have only episodic acute health conditions. Even women with high-risk pregnancies and children with serious chronic health conditions are receiving more care in their homes and in the community. This textbook integrates community and home care throughout, including information on long-term management of complex health conditions, which are especially challenging to manage in community settings.

Five chapters provide a theoretical perspective and important tools in caring for childbearing and childrearing families in the community setting: Chapter 10, *Nursing Assessment: Antepartum Period*; Chapter 11, *Understanding the Needs and Care of the Expectant Family*; Chapter 30, *Understanding the Early Care Needs, and Home Care of the Postpartum Family*; Chapter 38, *Family Assessment and Concepts of Nursing Care in the Community*; and Chapter 39, *Dealing with a Chronic Condition: Nursing Care for the Child and Family*. In addition, Community-Based Nursing Care is a special heading used throughout this text.

Patient and Family Education

Patient and family education remains a critical element of effective nursing care, one that we emphasize in this text. Nurses teach their patients during all stages of pregnancy and the childbearing process, during the child's health visits, and while providing care for specific conditions. Throughout the book, we include **Teaching Highlights** that present a special healthcare issue or problem and the related key teaching points for the family.

Clinical Reasoning

Nurses are faced with the responsibility to manage care for multiple families with diverse healthcare needs, and to work collaboratively with other health professionals to enhance care. Thus, nurses must be able to think critically, communicate well, and problem solve effectively.

To promote the development of clinical reasoning skills that will support nurses in challenging situations, **Clinical Reasoning** boxes provide brief scenarios that ask students to determine the appropriate response. Students can test their own decision-making skills by submitting answers to these questions on the text's website, where the feature also appears. The instructor can then grade their answers using the suggested answers provided in the Instructor's Manual, which is replicated on the website. Students can access a variety of critical thinking exercises and case studies on the textbook's website at www.pearsonglobaleditions.com/London.

Another feature that emphasizes these skills is the **Clinical Reasoning in Action** feature. This case study at the end of each chapter introduces a patient situation along with questions to enable the student to decide which nursing actions are appropriate. Answers are provided at www.pearsonglobaleditions.com/London. In addition, some of the exercises tied to the patient situation ask the student to create a **Concept Map** using the interactive template found on the text's website. The use of concept maps is an exciting trend in nursing care management. Concept maps are visual depictions of the relationships that exist among a variety of concepts and ideas related to a patient's specific health problems. The relationship "picture" created by the map allows the nurse to plan interventions that can address multiple problems more effectively. To help students understand how concept maps can influence care planning, we have included a sample concept map in Chapter 1.

The Instructor's Resource Manual has more suggestions for clinical reasoning exercises for both the classroom and the clinical setting.

Evidence-Based Practice

Healthcare professionals are increasingly aware of the importance of using evidence-based practice approaches as the foundation for planning and providing skilled, effective care. The approach of evidence-based practice draws on information from a variety of sources, including nursing research. To help nurses become more comfortable integrating new knowledge into their nursing practice, a brief discussion of evidence-based practice is included in Chapter 1.

A feature entitled **Evidence-Based Practice** further enhances the approach of using research to determine nursing actions. It describes a particular problem or clinical question and investigates the evidence that suggests solutions to the problem. In these features, we provide an interpretation explaining the implications of the studies and then invite the student to apply clinical reasoning skills to further identify nursing care approaches.

Developing Cultural Competence

The influence of a family's culture on health beliefs and healthcare practices cannot be underestimated. Chapter 1 briefly introduces cultural issues relevant to maternity and child nursing

care. Additionally, we include Chapter 2, *Culture and the Family,* to directly and specifically address cultural issues.

We also emphasize cultural competence throughout the text. We highlight specific cultural issues and their application to nursing care in the **Developing Cultural Competence** features.

Other New or Expanded Concepts in This Edition

Many other important concepts are emphasized throughout this text:

- *Assessment* is an essential and core role in nursing management. Several chapters are dedicated to helping the student perform an assessment during the pregnancy continuum, including the fetus and newborn, and later through the stages of childhood. In addition, body system assessment guidelines are provided in many of the pediatric chapters.
- *Communication* is one of the most important skills that students need to learn. Effective communication is the very fiber of nursing practice. This book integrates communication skills in an applied manner where students can most benefit. It is an essential part of the **Clinical Tip** and **Teaching Highlights** boxes. The importance of communication with families and other health professionals underscores the Collaborative Care sections of this text.
- *Ensuring appropriate nutrition* during pregnancy, the newborn period, infancy, and childhood is important to promote growth, development, and health. A growing national focus on healthy nutrition patterns underscores the importance of this information. Chapters 12, 26, 29, and 33 address nutrition for pregnant women, newborns, and children.
- *Patient safety* is an essential element of effective patient care. It is the focus of the Joint Commission and one of the key elements of the Quality and Safety Education for Nurses (QSEN) project, which is discussed in Chapter 1. To help keep safety in the forefront, a new feature called **SAFETY ALERT!** has been added. This feature calls attention to issues that could place a patient (or a nurse) at risk. Another feature, **Clinical Tip**, relates to patient safety and many other nursing concepts by providing readers with concrete suggestions for safe, effective practice.
- *Pain* is now considered the fifth vital sign, and pain management is a priority in healthcare settings. All of the chapters in Part 4, *Birth and the Family*, address pain assessment and management, and it is the primary focus in Chapter 20, *Managing Pain Using Pharmacologic Agents*. Pain assessment and management is also a focus in five chapters (Chapters 24, 26, 27, 30, and 31) of Part 5, *The Postpartum Family and the Newborn*. In Part 6, Chapter 40 addresses pain assessment and management in the nursing care plan, and it is the primary subject of Chapter 41, *Assessing and Managing Pain in Children*. We discuss applicable pain management when appropriate in other chapters, including each of the chapters in Part 7, *Caring for Children with Alterations in Health Status*. Current research is used as the basis for pain discussions and nursing management throughout the text.
- *End-of-life care* has rightfully gained prominence as a critical component of nursing care. Expanded focus on the care of the family and the child who is dying has been added to Chapter 42, *The Child with a Life-Threatening Condition and Hospice Care*. Grief and loss associated with miscarriage are addressed in Chapter 16, *Pregnancy at Risk: Gestational Onset*. Care of the family experiencing perinatal loss is presented in Chapter 22, *Childbirth at Risk: Labor-Related Complications*.

TOOLS THAT FOCUS STUDENT REVIEW TO MAXIMIZE TIME

Both instructors and students value learning aids that unify the objectives and concepts of a chapter as well as reinforce the overall themes in a text. In keeping with our theme of family-centered care, each chapter begins with a **Family Quote** that helps personalize and set the stage for content that follows from the family's perspective. This is followed by a list of **Learning Outcomes** and **Key Terms** with page numbers to identify the place where the term first appears in the chapter. An **Audio Glossary** of these terms commonly used in the field of maternal–newborn and child nursing can be found on the book's website, with audio pronunciations of the terms as well as printed definitions.

Critical Concept Review

This feature is a direct response to instructors' and students' requests that the text provide more opportunities for review. Each chapter ends with a **Critical Concept Review**, a feature designed to help students retain the most important concepts from a chapter in a short period of time. This visual tool isolates the essential content in a chapter by means of a flowchart that links **Learning Outcomes** to their corresponding **Concepts**. Students save time by having the important concepts identified for them, allowing them to use more of their study time for reviewing the concepts themselves.

Explore Pearson Nursing Student Resources

The last section of each chapter includes a list of references and an invitation to visit www.pearsonglobaleditions.com/London. This encourages students to use the additional chapter-specific NCLEX-RN® review questions and other interactive exercises that appear on the website. These online offerings will further enhance the student's learning experience, build on knowledge gained from this textbook, prepare students for the NCLEX-RN®, and foster clinical reasoning. In addition, throughout the chapters themselves, thumbtabs appear along the edges of the pages that point the reader to supplements on www.pearsonglobaleditions.com/London that relate to a topic discussed near the thumbtab. The thumbtabs cross-reference specific animations, case studies, activities, and other materials that will assist students in understanding key concepts.

APPLICATION OF THE NURSING PROCESS

NURSING MANAGEMENT

The nursing process is emphasized throughout the nursing care chapters. The heading **Nursing Management** highlights nursing assessment, actions, and evaluation. In chapters with frequently seen or high-risk health issues or conditions, the expanded section on nursing management helps students understand and apply care principles more completely. The expanded section includes the headings Nursing Assessment and Diagnosis, Planning and Implementation, and Evaluation.

In keeping with changing approaches to nursing care management, we feature **Nursing Care Plans** throughout the text. The Nursing Care Plans address nursing care for patients who have complications, such as a woman with preeclampsia or a child with otitis media. We designed this feature to help students approach care from the nursing management perspective. Care plans integrate nursing diagnoses, Nursing Intervention Classifications (NIC), and Nursing Outcome Classifications (NOC).

VISUALS THAT TEACH

The conviction that art can teach is evident throughout the book. There are hundreds of contemporary photographs of childbearing and childrearing families and children in healthcare and related settings throughout the textbook, as well as illustrations, all of which serve to display conditions, compare developmental stages, and depict concepts.

Pathophysiology Illustrated

In particular, **Pathophysiology Illustrated** figures allow the student to see into the body and to visualize the causes and effects of conditions on childbearing women, newborns, and children. Each Pathophysiology Illustrated feature box begins with a head like the one shown here.

As Children Grow

As Children Grow illustrations help the student visualize the important anatomic and physiologic differences between a child and an adult. These features illustrate how the child progresses through developmental stages and the important ways in which a child's development influences healthcare needs and how the child progresses through developmental stages. Each As Children Grow feature box begins with a head like the one shown here.

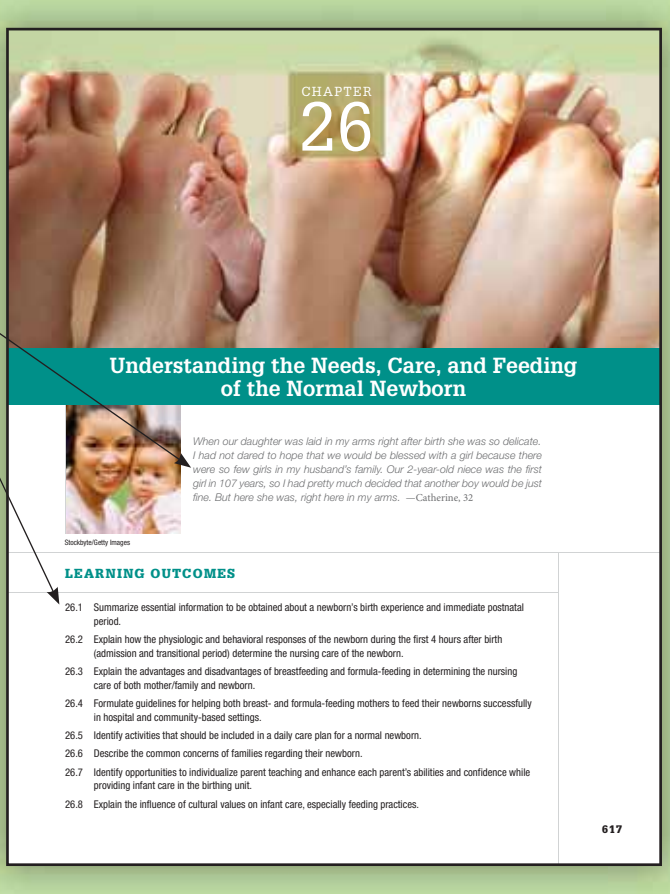
Nursing is facing many new challenges: an ongoing nursing shortage, dramatic advances in healthcare knowledge, implementation of the Affordable Care Act, revisioning of nursing education needs and approaches, and natural and human-made disasters that create a critical need for skilled nurses. We believe that nursing is becoming reenergized and is facing these issues and challenges with enthusiasm and commitment. Many people feel a strong desire to choose professions that make a difference—professions such as nursing. We, like you, know that expert nurses can have a tremendous impact on the lives of childbearing and childrearing families. Our goal in writing this text is to help prepare nurses with the skills and knowledge to make a difference—one family at a time.

Marcia L. London
Patricia W. Ladewig
Michele R. Davidson
Jane W. Ball
Ruth C. Bindler
Kay J. Cowen

Features That Help You Use This Textbook Successfully

Instructors and students alike value the in-text learning aids that we include in our textbooks. The following guide will help you use the features and resources from *Maternal & Child Nursing Care*, Fourth Edition, to be successful in the classroom, in the clinical setting, on the NCLEX-RN® examination, and in nursing practice.

Each chapter begins with **Learning Outcomes** and a chapter opening **Quote.** These personal stories illustrate the diversity of cultures, parental concerns, and family situations that nurses will encounter throughout the course of their careers.



CHAPTER 26

Understanding the Needs, Care, and Feeding of the Normal Newborn

Stockbyte/Getty Images

When our daughter was laid in my arms right after birth she was so delicate. I had not dared to hope that we would be blessed with a girl because there were so few girls in my husband's family. Our 2-year-old niece was the first girl in 107 years, so I had pretty much decided that another boy would be just fine. But here she was, right here in my arms. —Catherine, 32

LEARNING OUTCOMES

26.1 Summarize essential information to be obtained about a newborn's birth experience and immediate postnatal period.

26.2 Explain how the physiologic and behavioral responses of the newborn during the first 4 hours after birth (admission and transitional period) determine the nursing care of the newborn.

26.3 Explain the advantages and disadvantages of breastfeeding and formula-feeding in determining the nursing care of both mother/family and newborn.

26.4 Formulate guidelines for helping both breast- and formula-feeding mothers to feed their newborns successfully in hospital and community-based settings.

26.5 Identify activities that should be included in a daily care plan for a normal newborn.

26.6 Describe the common concerns of families regarding their newborn.

26.7 Identify opportunities to individualize parent teaching and enhance each parent's abilities and confidence while providing infant care in the birthing unit.

26.8 Explain the influence of cultural values on infant care, especially feeding practices.

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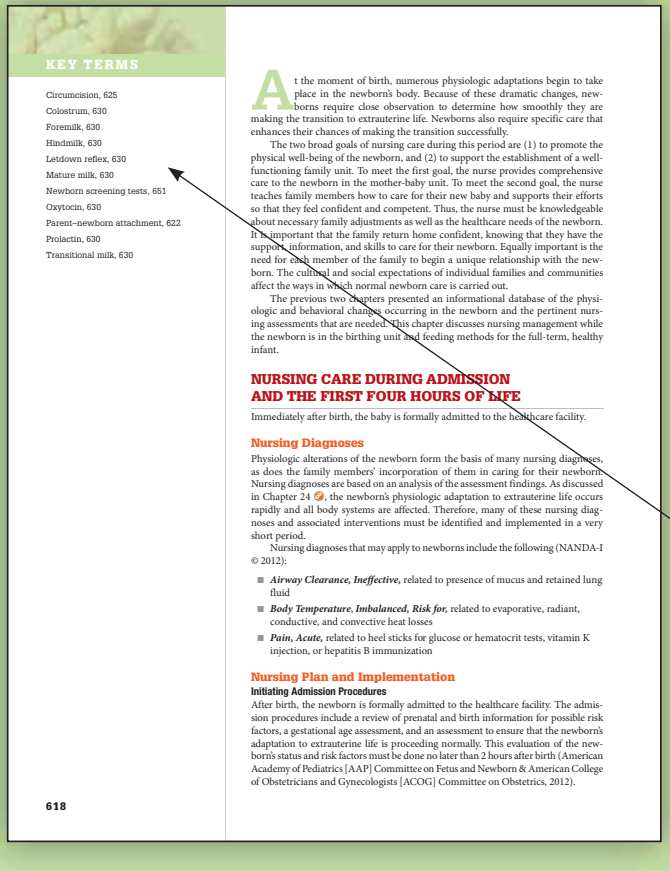

KEY TERMS

Circumcision, 625
Colostrum, 630
Foremilk, 630
Hindmilk, 630
Letdown reflex, 630
Mature milk, 630
Newborn screening tests, 651
Oxytocin, 630
Parent–newborn attachment, 622
Prolactin, 630
Transitional milk, 630

At the moment of birth, numerous physiologic adaptations begin to take place in the newborn's body. Because of these dramatic changes, newborns require close observation to determine how smoothly they are making the transition to extrauterine life. Newborns also require specific care that enhances their chances of making the transition successfully.

The two broad goals of nursing care during this period are (1) to promote the physical well-being of the newborn, and (2) to support the establishment of a well-functioning family unit. To meet the first goal, the nurse provides comprehensive care to the newborn in the mother-baby unit. To meet the second goal, the nurse teaches family members how to care for their new baby and supports their efforts so that they feel confident and competent. Thus, the nurse must be knowledgeable about necessary family adjustments as well as the healthcare needs of the newborn. It is important that the family return home confident, knowing that they have the support, information, and skills to care for their newborn. Equally important is the need for each member of the family to begin a unique relationship with the newborn. The cultural and social expectations of individual families and communities affect the ways in which normal newborn care is carried out.

The previous two chapters presented an informational database of the physiologic and behavioral changes occurring in the newborn and the pertinent nursing assessments that are needed. This chapter discusses nursing management while the newborn is in the birthing unit and feeding methods for the full-term, healthy infant.

NURSING CARE DURING ADMISSION AND THE FIRST FOUR HOURS OF LIFE

Immediately after birth, the baby is formally admitted to the healthcare facility.

Nursing Diagnoses

Physiologic alterations of the newborn form the basis of many nursing diagnoses, as does the family members' incorporation of them in caring for their newborn. Nursing diagnoses are based on an analysis of the assessment findings. As discussed in Chapter 24, the newborn's physiologic adaptation to extrauterine life occurs rapidly and all body systems are affected. Therefore, many of these nursing diagnoses and associated interventions must be identified and implemented in a very short period.

Nursing diagnoses that may apply to newborns include the following (NANDA-I © 2012):

- ***Airway Clearance, Ineffective,*** related to presence of mucus and retained lung fluid
- ***Body Temperature, Imbalanced, Risk for,*** related to evaporative, radiant, conductive, and convective heat losses
- ***Pain, Acute,*** related to heel sticks for glucose or hematocrit tests, vitamin K injection, or hepatitis B immunization

Nursing Plan and Implementation

Initiating Admission Procedures

After birth, the newborn is formally admitted to the healthcare facility. The admission procedures include a review of prenatal and birth information for possible risk factors, a gestational age assessment, and an assessment to ensure that the newborn's adaptation to extrauterine life is proceeding normally. This evaluation of the newborn's status and risk factors must be done no later than 2 hours after birth (American Academy of Pediatrics [AAP] Committee on Fetus and Newborn & American College of Obstetricians and Gynecologists [ACOG] Committee on Obstetrics, 2012).

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On the second page of each chapter is a list of **Key Terms** that will be introduced in the chapter. Page numbers are included with each key term to identify the place where the term first appears in the chapter.

630 Part 5 Chapter 26 Understanding the Needs, Care, and Feeding of the Normal Newborn

Nursing in Action: Breastfeeding

Video

at birth, progesterone levels fall and the inhibition is removed, triggering milk production. This occurs whether the mother has breast stimulation or not. However, if by the third or fourth day breast stimulation is not occurring, prolactin levels begin to drop.

Initially, lactation is under endocrine control. The hormone **prolactin** is released from the anterior pituitary in response to breast stimulation from suckling or the use of a breast pump. Prolactin levels double each time the infant suckles at the breast, regardless of the age of the infant or duration of lactation. Prolactin stimulates the milk-secreting cells in the alveoli to produce milk, then rapidly drops back to baseline. If more than approximately 3 hours occur between stimulation, prolactin levels begin to drop below baseline. To reverse the overall decline in prolactin level, the mother can be encouraged to stimulate her breasts more frequently (e.g., every 1.5 to 2 hours). Mothers should be strongly encouraged to stimulate their breasts frequently if their infants are not effective feeders or if they are separated from their infants. Prolactin receptors are established during the first 2 weeks postpartum in response to frequency of breast stimulation (Human Milk Banking Association of North America [HMBANA], 2011). Inadequate development of prolactin receptors during this time is likely to negatively impact the mother's long-term milk volume. By 2 weeks postpartum, prolactin levels will be back to prepregnancy levels and milk production will cease if stimulation of the breasts by breastfeeding or pumping does not occur (Lawrence & Lawrence, 2011).

The milk that flows from the breast at the start of a feeding or pumping session is called **foremilk**. The foremilk is watery milk high in protein and low in fat (1% to 2%). This milk has trickled down from the alveoli between feedings to fill the lactiferous ducts. It is low-fat milk because the fat globules made in the alveoli stick to each other and to the walls of the alveoli and do not trickle down.

In addition to prolactin release, stretching of the nipple and compression of the areola signal the hypothalamus to trigger the posterior pituitary gland to release oxytocin. **Oxytocin** acts on the myoepithelial cells surrounding the alveoli in the breast tissue to contract, ejecting milk, including the fat globules present, into the ducts. This process is called the *milk ejection reflex*, better known in lay terms as the **letdown reflex** or *letdown response*. The average initial letdown response occurs about 2 minutes after an infant begins to suckle, and there will be 4 to 10 letdown responses during a feeding session. The milk that flows during letdown is called hindmilk. **Hindmilk** is rich in fat (can exceed 10%) and therefore high in calories. In a sample of expressed breast milk, the average total fat concentration is about 4% and the total caloric content is about 20 calories/ounce.

By 6 months of breastfeeding, prolactin levels are only 5 to 10 ng/mL, yet milk production continues. A whey protein called feedback inhibitor of lactation (FIL) has been identified as influencing milk production through a negative feedback loop. FIL is present in breast milk and functions to decrease milk production. The more milk that remains in the breast for a longer period of time, the more milk production is decreased. On the other hand, the more often the breasts are emptied, the lower the level of FIL and the faster milk is produced. This mechanism of regulating milk at the local level is called autocrine control. This process is key to understanding how a mother maintains or loses her milk supply (Blackburn, 2013).

A number of factors can delay or impair lactogenesis. Maternal factors include cesarean birth, primiparity, long duration of stage 1 or stage 2 of labor, postpartum hemorrhage, type 1 diabetes, untreated hypothyroidism, obesity, polycystic ovary syndrome, retained placenta fragments, vitamin B_1 deficiency, history of previous breast surgery, insufficient glandular breast tissue, and significant stress (Riordan & Wambach, 2010). Other factors that can interfere with breastfeeding include smoking and use of alcohol, as well as some prescription and over-the-counter medications (e.g., antihistamines, combined birth control pills).

Stages of Human Milk

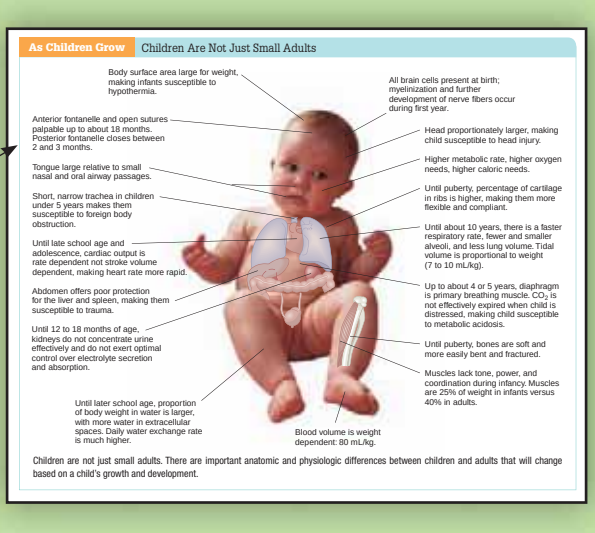
During the establishment of lactation there are three stages of human milk: colostrum, transitional milk, and mature milk.

Colostrum is the initial milk that begins to be secreted during midpregnancy and is immediately available to the baby at birth. Colostrum is a thick, creamy yellowish fluid with concentrated amounts of protein, fat-soluble vitamins, and minerals, and it has lower amounts of fat and lactose compared with mature milk. It also contains antioxidants and high levels of lactoferrin and secretory IgA. It promotes the establishment of *Lactobacillus bifidus* flora in the digestive tract, which helps to protect the infant from disease and illness. Colostrum also has a laxative effect on the infant, which helps the baby pass meconium stools, which in turn helps decrease hyperbilirubinemia. Although the volume of colostrum is small, it encourages the newborn to nurse frequently, helping to stimulate milk production. No supplementation with other fluids is necessary unless there is a medical condition.

The onset of copious milk secretion begins between 32 and 96 hours postpartum. For most women this is observed on day 3. Laypeople refer to this as the milk "coming in," and it is called **transitional milk**. Transitional milk has qualities intermediate to colostrum and mature milk but may look indistinguishable from colostrum. It is still light yellow in color but is more copious than colostrum and contains more fat, lactose, water-soluble vitamins, and calories. See Figure 26–11 ● to view a picture of transitional milk. By day 5, most mothers are producing about 16 oz/day (Riordan & Wambach, 2010).

Mature milk is white or slightly blue-tinged in color. It is present by 2 weeks postpartum and continues thereafter until lactation ceases. Mature milk contains about 13% solids (carbohydrates, proteins, and fats) and 87% water. Although mature human milk appears similar to skim cow's milk and may cause mothers to question whether their milk is "rich enough," mothers should be reassured that this is the normal appearance of mature human milk and that it provides the infant with all the necessary nutrients. Although gradual changes in composition do occur continuously over periods of weeks to accommodate the needs of the growing newborn, in general the composition of mature milk is fairly consistent with the exception of the fat content as noted previously. Milk production continues to increase slowly over the first month. By 6 months postpartum a mother produces about 27 oz (800 mL) per day (Blackburn, 2013).

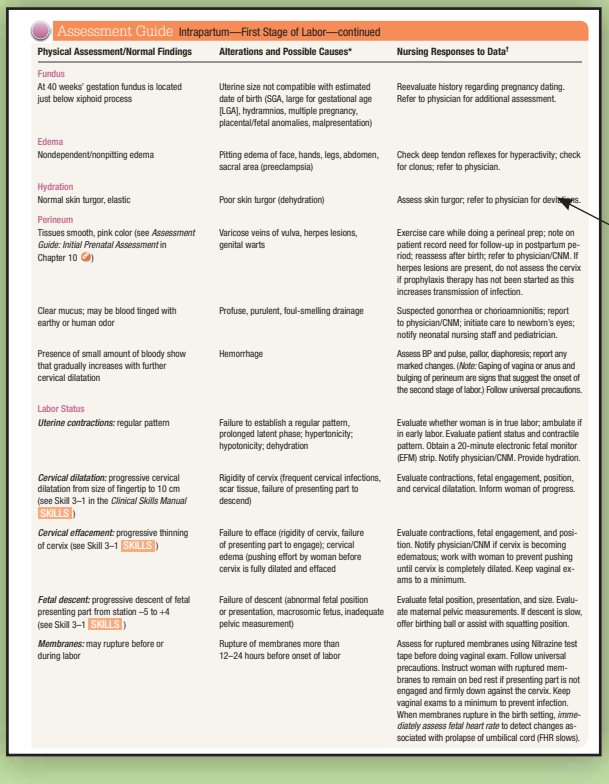
Media thumbtabs in each chapter remind you to use the accompanying supplemental materials found on the text's companion website, www.pearsonglobaleditions.com/London. These thumbtabs cross-reference additional information or specific activities related to the concepts introduced on that page in the textbook. These resources enhance learning and provide an application beyond the textbook experience. For example, you can see a video of breastfeeding in Chapter 26.



As Children Grow Children Are Not Just Small Adults

Children are not just small adults. There are important anatomic and physiologic differences between children and adults that will change based on a child's growth and development.

As Children Grow boxes illustrate the anatomic and physiologic differences between children and adults. These features illustrate how the child progresses through developmental stages and the important ways in which a child's development influences healthcare needs.



Assessment Guide Intrapartum—First Stage of Labor—continued

Physical Assessment/Normal Findings	Alterations and Possible Causes*	Nursing Responses to Data†
Fundus		
At 40 weeks' gestation fundus is located just below xiphoid process	Uterine size not compatible with estimated date of birth (SGA, large for gestational age [LGA], hydramnios, multiple pregnancy, placental/fetal anomalies, malpresentation)	Reevaluate history regarding pregnancy dating. Refer to physician for additional assessment.
Edema		
Nondependent/nonpitting edema	Pitting edema of face, hands, legs, abdomen, sacral area (preeclampsia)	Check deep tendon reflexes for hyperactivity; check for clonus; refer to physician.
Hydration		
Normal skin turgor, elastic	Poor skin turgor (dehydration)	Assess skin turgor; refer to physician for deviations.
Perineum		
Tissues smooth, pink color (see *Assessment Guide: Initial Prenatal Assessment* in Chapter 10)	Varicose veins of vulva, herpes lesions, genital warts	Exercise care while doing a perineal prep; note on patient record need for follow-up in postpartum period; reassess after birth; refer to physician/CNM. If herpes lesions are present, do not assess the cervix if prophylaxis therapy has not been started as this increases transmission of infection.
Clear mucus; may be blood tinged with earthy or human odor	Profuse, purulent, foul-smelling drainage	Suspected gonorrhea or chorioamnionitis; report to physician/CNM; initiate care to newborn's eyes; notify neonatal nursing staff and pediatrician.
Presence of small amount of bloody show that gradually increases with further cervical dilatation	Hemorrhage	Assess BP and pulse, pallor, diaphoresis; report any marked changes. (*Note:* Gaping of vagina or anus and bulging of perineum are signs that suggest the onset of the second stage of labor.) Follow universal precautions.
Labor Status		
Uterine contractions: regular pattern	Failure to establish a regular pattern, prolonged latent phase; hypertonicity; hypotonicity; dehydration	Evaluate whether woman is in true labor; ambulate if in early labor. Evaluate patient status and contractile pattern. Obtain a 20-minute electronic fetal monitor (EFM) strip. Notify physician/CNM. Provide hydration.
Cervical dilatation: progressive cervical dilatation from size of fingertip to 10 cm (see Skill 3–1 in the *Clinical Skills Manual* SKILLS)	Rigidity of cervix (frequent cervical infections, scar tissue, failure of presenting part to descend)	Evaluate contractions, fetal engagement, position, and cervical dilatation. Inform woman of progress.
Cervical effacement: progressive thinning of cervix (see Skill 3–1 SKILLS)	Failure to efface (rigidity of cervix, failure of presenting part to engage); cervical edema (pushing effort by woman before cervix is fully dilated and effaced	Evaluate contractions, fetal engagement, and position. Notify physician/CNM if cervix is becoming edematous; work with woman to prevent pushing until cervix is completely dilated. Keep vaginal exams to a minimum.
Fetal descent: progressive descent of fetal presenting part from station –5 to +4 (see Skill 3–1 SKILLS)	Failure of descent (abnormal fetal position or presentation, macrosomic fetus, inadequate pelvic measurement)	Evaluate fetal position, presentation, and size. Evaluate maternal pelvic measurements. If descent is slow, offer birthing ball or assist with squatting position.
Membranes: may rupture before or during labor	Rupture of membranes more than 12–24 hours before onset of labor	Assess for ruptured membranes using Nitrazine test tape before doing vaginal exam. Follow universal precautions. Instruct woman with ruptured membranes to remain on bed rest if presenting part is not engaged and firmly down against the cervix. Keep vaginal exams to a minimum to prevent infection. When membranes rupture in the birth setting, *immediately assess fetal heart rate* to detect changes associated with prolapse of umbilical cord (FHR slows).

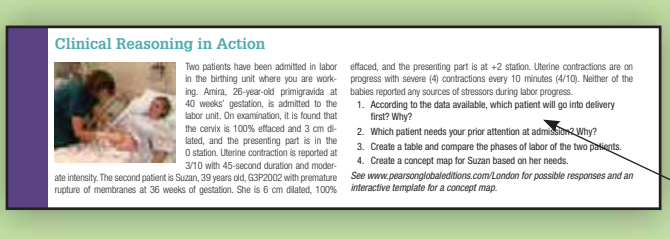
Assessment Guides, found in the maternal–newborn chapters, assist you with diagnoses by incorporating physical assessment and normal findings, alterations and possible causes, and guidelines for nursing interventions. Assessment guides within several chapters of Part 7, *Caring for Children with Alterations in Health Status*, provide a system-oriented approach to assessing the child's health condition.

Clinical Reasoning boxes provide brief case scenarios that ask students to determine the appropriate response.

Clinical Reasoning Glucose Intolerance

Patti Chang, a 35-year-old G3P2, is a well-educated, active Chinese American woman with no history of glucose intolerance. Her two children were born healthy at 36 weeks' gestation. She receives the usual 50-g glucose tolerance test at 26 weeks' gestation, and her plasma level is 160 mg/dL. She seems irritated and frustrated when her obstetrician tells her that it would be best to perform a 3-hour fasting glucose tolerance test. After the physician leaves the room, Patti asks you the following questions: "Will the glucose hurt my baby? What will the treatment be?" How will you answer the questions? Why does Patti seem so upset?

See www.pearsonglobaleditions.com/London for possible responses.


Clinical Reasoning in Action

Two patients have been admitted in labor in the birthing unit where you are working. Amira, 26-year-old primigravida at 40 weeks' gestation, is admitted to the labor unit. On examination, it is found that the cervix is 100% effaced and 3 cm dilated, and the presenting part is in the 0 station. Uterine contraction is reported at 3/10 with 45-second duration and moderate intensity. The second patient is Suzan, 39 years old, G3P2002 with premature rupture of membranes at 36 weeks of gestation. She is 6 cm dilated, 100% effaced, and the presenting part is at +2 station. Uterine contractions are on progress with severe (4) contractions every 10 minutes (4/10). Neither of the babies reported any sources of stressors during labor progress.

1. According to the data available, which patient will go into delivery first? Why?
2. Which patient needs your prior attention at admission? Why?
3. Create a table and compare the phases of labor of the two patients.
4. Create a concept map for Suzan based on her needs.

See www.pearsonglobaleditions.com/London for possible responses and an interactive template for a concept map.

Clinical Reasoning in Action features at the end of each chapter propose a real-life scenario and a series of clinical reasoning questions so that you can apply to the clinical setting what you learned in class.

Clinical Tip features offer hands-on suggestions and clinical tips. These are placed at locations in the text that will help you apply them. They include topics such as legal and ethical considerations, nursing alerts, and home and community care considerations.

Clinical Tip

With a sleepy baby, unwrap the baby, encourage lots of skin-to-skin contact between the mother and baby, and have the mother rest with her baby near her breast so that the baby can feel and smell the breast. Encourage the mother to watch for feeding cues, such as hand-to-mouth activity, fluttering eyelids, vocalization (but not necessarily crying), and mouthing activities.

Complementary Care Acupressure During Labor

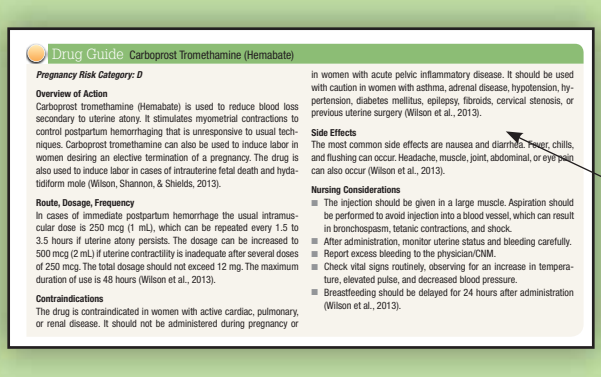
Acupressure is an ancient Chinese medical treatment that involves using the fingers to press key pressure points on the surface of the skin. This pressure ultimately stimulates the immune system to promote healing by triggering the release of endorphins, reducing stress through muscle relaxation, and promoting circulation. The specific acupressure point used in laboring women is the San Yin-Jiao (SP-6) acupressure point. The SP-6 acupressure point is located on the medial side of the leg, in the calf region, approximately 3 cm (1.2 in.) superior to the prominence of the inner malleus. The use of acupressure in labor has been associated with shorter labors and lower subjective and objective pain scores. Women who receive acupressure typically use less pain medication than those who do not receive acupressure (Simpkin, Bolding, Keppler, et al., 2010).

Complementary Care boxes present information and critiques research about commonly used alternative and complementary measures to treat or provide comfort for various conditions.

Developing Cultural Competence
Birth Choices

Sometimes nurses make the mistake of assuming that a pregnant woman will make the same decisions about the birth experience as the nurse would have. However, the choices a woman and her family make are influenced by many factors, including ethnic background, culture, and religious beliefs. These factors may profoundly influence decisions such as care provider (male or female), birth setting, labor support person(s), use of medications for analgesia, position during birth, saving the placenta, dietary practices immediately postpartum, and a host of other issues. There is no one right way to give birth.

Developing Cultural Competence boxes highlight specific cultural issues and their application to nursing care.



Drug Guide Carboprost Tromethamine (Hemabate)

Pregnancy Risk Category: D

Overview of Action

Carboprost tromethamine (Hemabate) is used to reduce blood loss secondary to uterine atony. It stimulates myometrial contractions to control postpartum hemorrhaging that is unresponsive to usual techniques. Carboprost tromethamine can also be used to induce labor in women desiring an elective termination of a pregnancy. The drug is also used to induce labor in cases of intrauterine fetal death and hydatidiform mole (Wilson, Shannon, & Shields, 2013).

Route, Dosage, Frequency

In cases of immediate postpartum hemorrhage the usual intramuscular dose is 250 mcg (1 mL), which can be repeated every 1.5 to 3.5 hours if uterine atony persists. The dosage can be increased to 500 mcg (2 mL) if uterine contractility is inadequate after several doses of 250 mcg. The total dosage should not exceed 12 mg. The maximum duration of use is 48 hours (Wilson et al., 2013).

Contraindications

The drug is contraindicated in women with active cardiac, pulmonary, or renal disease. It should not be administered during pregnancy or in women with acute pelvic inflammatory disease. It should be used with caution in women with asthma, adrenal disease, hypotension, hypertension, diabetes mellitus, epilepsy, fibroids, cervical stenosis, or previous uterine surgery (Wilson et al., 2013).

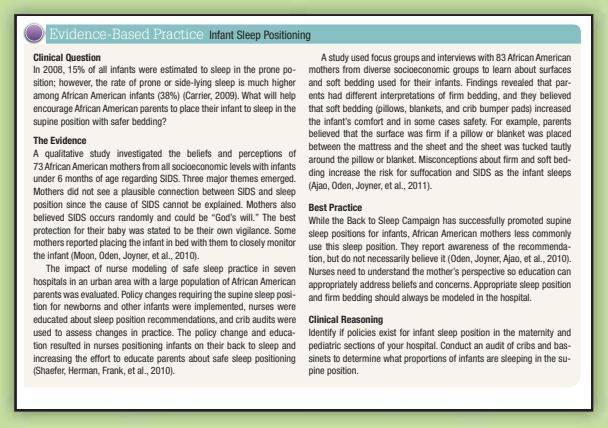
Side Effects

The most common side effects are nausea and diarrhea. Fever, chills, and flushing can occur. Headache, muscle, joint, abdominal, or eye pain can also occur (Wilson et al., 2013).

Nursing Considerations

- The injection should be given in a large muscle. Aspiration should be performed to avoid injection into a blood vessel, which can result in bronchospasm, tetanic contractions, and shock.
- After administration, monitor uterine status and bleeding carefully.
- Report excess bleeding to the physician/CNM.
- Check vital signs routinely, observing for an increase in temperature, elevated pulse, and decreased blood pressure.
- Breastfeeding should be delayed for 24 hours after administration (Wilson et al., 2013).

Drug Guides for selected medications commonly used in maternal–newborn and child nursing aid you in correctly administering the medications and evaluating their actions.



Evidence-Based Practice Infant Sleep Positioning

Clinical Question

In 2008, 15% of all infants were estimated to sleep in the prone position; however, the rate of prone or side-lying sleep is much higher among African American infants (38%) (Carrier, 2009). What will help encourage African American parents to place their infant to sleep in the supine position with safer bedding?

The Evidence

A qualitative study investigated the beliefs and perceptions of 73 African American mothers from all socioeconomic levels with infants under 6 months of age regarding SIDS. Three major themes emerged. Mothers did not see a plausible connection between SIDS and sleep position since the cause of SIDS cannot be explained. Mothers also believed SIDS occurs randomly and could be "God's will." The best protection for their baby was stated to be their own vigilance. Some mothers reported placing the infant in bed with them to closely monitor the infant (Moon, Oden, Joyner, et al., 2010).

The impact of nurse modeling of safe sleep practice in seven hospitals in an urban area with a large population of African American parents was evaluated. Policy changes requiring the supine sleep position for newborns and other infants were implemented, nurses were educated about sleep position recommendations, and crib audits were used to assess changes in practice. The policy change and education resulted in nurses positioning infants on their back to sleep and increasing the effort to educate parents about safe sleep positioning (Shaefer, Herman, Frank, et al., 2010).

A study used focus groups and interviews with 83 African American mothers from diverse socioeconomic groups to learn about surfaces and soft bedding used for their infants. Findings revealed that parents had different interpretations of firm bedding, and they believed that soft bedding (pillows, blankets, and crib bumper pads) increased the infant's comfort and in some cases safety. For example, parents believed that the surface was firm if a pillow or blanket was placed between the mattress and the sheet and the sheet was tucked tautly around the pillow or blanket. Misconceptions about firm and soft bedding increase the risk for suffocation and SIDS as the infant sleeps (Ajao, Oden, Joyner, et al., 2011).

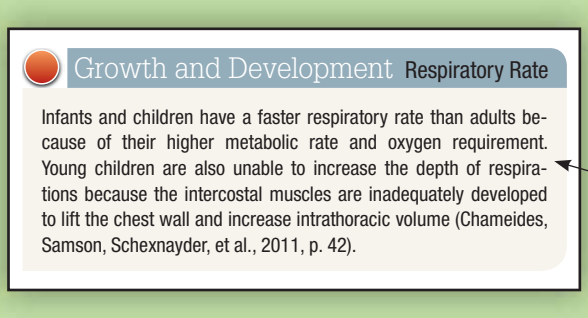
Best Practice

While the Back to Sleep Campaign has successfully promoted supine sleep positions for infants, African American mothers less commonly use this sleep position. They report awareness of the recommendation, but do not necessarily believe it (Oden, Joyner, Ajao, et al., 2010). Nurses need to understand the mother's perspective so education can appropriately address beliefs and concerns. Appropriate sleep position and firm bedding should always be modeled in the hospital.

Clinical Reasoning

Identify if policies exist for infant sleep position in the maternity and pediatric sections of your hospital. Conduct an audit of cribs and bassinets to determine what proportions of infants are sleeping in the supine position.

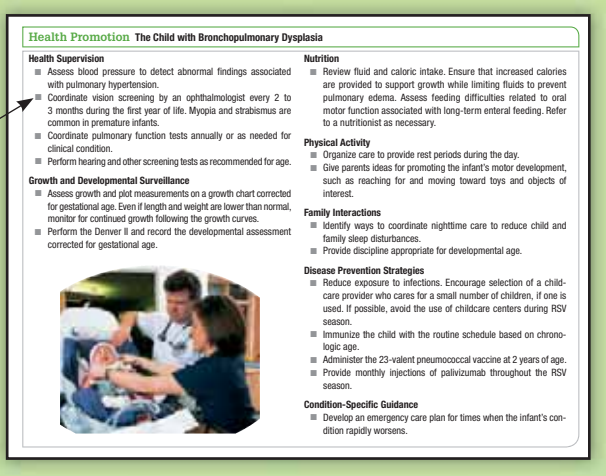
Evidence-Based Practice boxes present recent nursing research, discuss implications, and challenge you to incorporate this information into your nursing practice through nursing actions.



Growth and Development Respiratory Rate

Infants and children have a faster respiratory rate than adults because of their higher metabolic rate and oxygen requirement. Young children are also unable to increase the depth of respirations because the intercostal muscles are inadequately developed to lift the chest wall and increase intrathoracic volume (Chameides, Samson, Schexnayder, et al., 2011, p. 42).

Growth and Development boxes, found exclusively in the pediatric chapters, provide information about the different responses of children at various ages to health conditions.



Health Promotion The Child with Bronchopulmonary Dysplasia

Health Supervision

- Assess blood pressure to detect abnormal findings associated with pulmonary hypertension.
- Coordinate vision screening by an ophthalmologist every 2 to 3 months during the first year of life. Myopia and strabismus are common in premature infants.
- Coordinate pulmonary function tests annually or as needed for clinical condition.
- Perform hearing and other screening tests as recommended for age.

Growth and Developmental Surveillance

- Assess growth and plot measurements on a growth chart corrected for gestational age. Even if length and weight are lower than normal, monitor for continued growth following the growth curves.
- Perform the Denver II and record the developmental assessment corrected for gestational age.

Nutrition

- Review fluid and caloric intake. Ensure that increased calories are provided to support growth while limiting fluids to prevent pulmonary edema. Assess feeding difficulties related to oral motor function associated with long-term enteral feeding. Refer to a nutritionist as necessary.

Physical Activity

- Organize care to provide rest periods during the day.
- Give parents ideas for promoting the infant's motor development, such as reaching for and moving toward toys and objects of interest.

Family Interactions

- Identify ways to coordinate nighttime care to reduce child and family sleep disturbances.
- Provide discipline appropriate for developmental age.

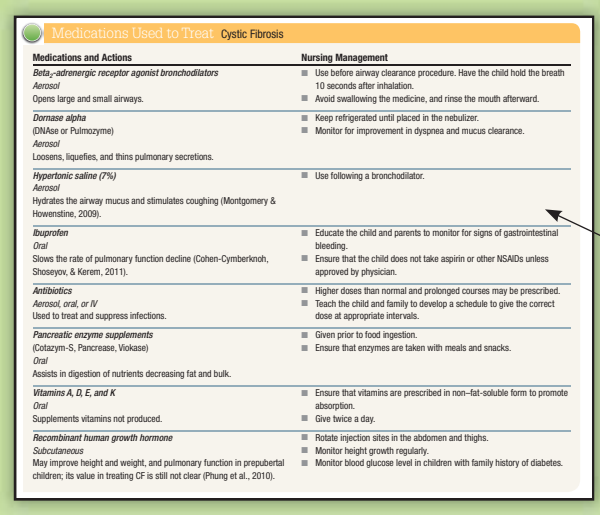
Disease Prevention Strategies

- Reduce exposure to infections. Encourage selection of a child-care provider who cares for a small number of children, if one is used. If possible, avoid the use of childcare centers during RSV season.
- Immunize the child with the routine schedule based on chronologic age.
- Administer the 23-valent pneumococcal vaccine at 2 years of age.
- Provide monthly injections of palivizumab throughout the RSV season.

Condition-Specific Guidance

- Develop an emergency care plan for times when the infant's condition rapidly worsens.

A feature entitled **Health Promotion** summarizes the needs of children with specific chronic conditions, such as asthma or diabetes. These overviews teach you to look at the child with a chronic illness like all children, with health maintenance needs for prevention, education, and basic care.



Medications Used to Treat Cystic Fibrosis

Medications and Actions	Nursing Management
Beta$_2$-adrenergic receptor agonist bronchodilators *Aerosol* Opens large and small airways.	■ Use before airway clearance procedure. Have the child hold the breath 10 seconds after inhalation. ■ Avoid swallowing the medicine, and rinse the mouth afterward.
Dornase alpha (DNAse or Pulmozyme) *Aerosol* Loosens, liquefies, and thins pulmonary secretions.	■ Keep refrigerated until placed in the nebulizer. ■ Monitor for improvement in dyspnea and mucus clearance.
Hypertonic saline (7%) *Aerosol* Hydrates the airway mucus and stimulates coughing (Montgomery & Howenstine, 2009).	■ Use following a bronchodilator.
Ibuprofen *Oral* Slows the rate of pulmonary function decline (Cohen-Cymberknoh, Shoseyov, & Kerem, 2011).	■ Educate the child and parents to monitor for signs of gastrointestinal bleeding. ■ Ensure that the child does not take aspirin or other NSAIDs unless approved by physician.
Antibiotics *Aerosol, oral, or IV* Used to treat and suppress infections.	■ Higher doses than normal and prolonged courses may be prescribed. ■ Teach the child and family to develop a schedule to give the correct dose at appropriate intervals.
Pancreatic enzyme supplements (Cotazym-S, Pancrease, Viokase) *Oral* Assists in digestion of nutrients decreasing fat and bulk.	■ Given prior to food ingestion. ■ Ensure that enzymes are taken with meals and snacks.
Vitamins A, D, E, and K *Oral* Supplements vitamins not produced.	■ Ensure that vitamins are prescribed in non–fat-soluble form to promote absorption. ■ Give twice a day.
Recombinant human growth hormone *Subcutaneous* May improve height and weight, and pulmonary function in prepubertal children; its value in treating CF is still not clear (Phung et al., 2010).	■ Rotate injection sites in the abdomen and thighs. ■ Monitor height growth regularly. ■ Monitor blood glucose level in children with family history of diabetes.

A **Medications Used to Treat** feature in tabular format provides an overview of the types of medications that can be used for a specific condition and nursing considerations associated with their use.

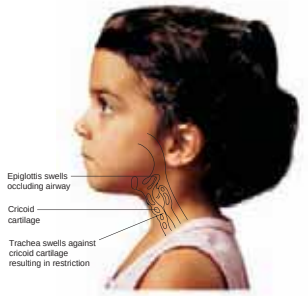
Also provided are **Nursing Care Plans** that address nursing care for women who have complications such as preeclampsia or diabetes mellitus, as well as for high-risk newborns and children. We designed this information to enhance your preparation for the clinical setting.

Nursing Care Plan The Child with Bronchiolitis

Intervention	Rationale	Expected Outcome
1. Nursing Diagnosis: *Breathing Pattern, Ineffective,* **related to increased work of breathing (NANDA-I © 2012)**		
NIC Priority Intervention: *Respiratory monitoring:* Collection and analysis of patient data to ensure airway patency and adequate gas exchange		**NOC Suggested Outcome:** *Vital signs status:* Temperature, pulse, respiration, and blood pressure within expected range for the child's age
Goal: The child will return to respiratory baseline and will not experience respiratory failure.		
■ Assess respiratory status (see *Assessment Guide*) when child is calm and not crying at least every 2–4 hours, or more often as indicated for an increasing or decreasing respiratory rate and episodes of apnea.	■ Changes in breathing pattern may occur quickly as the child's energy reserves are depleted. Baseline and subsequent assessments help detect changes in the respiratory rate and respiratory effort.	■ Child will return to respiratory baseline within 48–72 hours.
■ Attach a cardiorespiratory monitor and pulse oximeter with alarms set. Record and report changes promptly to physician.	■ The alarm can alert the nurse to any sudden respiratory changes and lead to more rapid interventions.	
Goal: The child's oxygenation status will return to baseline.		
■ Administer humidified oxygen via mask, nasal cannula, hood, or tent.	■ Humidified oxygen loosens secretions, helps maintain oxygenation status, and eases respiratory distress.	■ Child's respiratory effort will ease. The SpO_2 level will remain at 95% or higher during treatment.
■ Assess and compare the child's SpO_2 level on room air and when on supplemental oxygen.	■ Comparison of SpO_2 levels provides information about improvement status.	
■ Note child's response to ordered medications.	■ Medications act systemically to improve oxygenation and decrease inflammation.	■ Child will tolerate therapeutic measures with no adverse effects.
■ Position head of bed up or place child in position of comfort on parent's lap, if crying or struggling in crib or bed.	■ Position facilitates improved aeration and promotes decrease in anxiety (especially in toddlers) and energy expenditure.	■ Child will rest quietly in position of comfort.
■ Assess tolerance to feeding and activities.	■ Provides an assessment of condition improvement.	
2. Nursing Diagnosis: *Fluid Volume: Deficient, Risk for,* **related to inability to meet body requirements and increased metabolic demand (NANDA-I © 2012)**		
NIC Priority Intervention: *Fluid management:* Promotion of fluid balance and prevention of complications resulting from abnormal or undesired fluid levels		**NOC Suggested Outcome:** *Hydration:* Amount of water in intracellular and extracellular compartments of body
Goal: The child's immediate fluid deficit will be corrected.		
■ Evaluate need for intravenous fluids. Maintain IV, if ordered.	■ Previous fluid loss may require immediate replacement.	■ Child's hydration status will be maintained during acute phase of illness as demonstrated by appropriate urine output and moist mucous membranes.
Goal: The child will be adequately hydrated, be able to tolerate oral fluids, and progress to normal diet.		
■ Calculate maintenance fluid requirements and give oral fluids, IV fluids, or both.	■ Assessment of fluid requirements enables the child to maintain hydration while transitioning to oral fluids.	■ Child will take adequate oral fluids after 24–48 hours to maintain hydration.
■ Offer clear fluids and incorporate parent in care. Offer fluid choice when tolerated.	■ Choice of fluid offered by parent gains the child's cooperation.	■ Child will accept beverage of choice from parent or nursing staff.
■ Maintain strict intake and output monitoring and evaluate specific gravity at least every 8 hours.	■ Monitoring provides objective evidence of fluid loss and ongoing hydration status.	
■ Perform daily weight measurement on the same scale at the same time of day. Evaluate skin turgor.	■ Further evidence of improvement of hydration status.	■ Child's weight will stabilize after 24–48 hours; skin turgor will be supple.
■ Assess mucous membranes and presence of tears.	■ Moist mucous membranes and tears are signs of adequate hydration.	■ Child will show evidence of improved hydration.

Pathophysiology Illustrated Airway Changes with Croup

Two important changes occur in the upper airway with croup: The epiglottis swells, occluding the airway, and the trachea swells against the cricoid cartilage, causing restriction.



Pathophysiology Illustrated boxes feature unique drawings that illustrate conditions on a cellular or organ level, and may also portray the step-by-step process of a disease. These images visually explain the pathophysiology of certain conditions to increase your understanding of the condition and its treatment.

The ***SAFETY ALERT!*** features present essential information that calls attention to issues that could place a patient or a nurse at risk and provide guidance on maintaining a safe environment for all patients and healthcare providers.

SAFETY ALERT!

Observe the child continuously for inability to swallow, absence of voice sounds, increasing degree of respiratory distress, and acute onset of drooling. A change in the child's level of consciousness—from anxiety to lethargy to stupor—occurs as hypoxia increases. If any of these signs occur, get medical assistance immediately. The quieter the child, the greater the cause for concern.

Teaching Highlights Discharge Teaching for Bronchiolitis

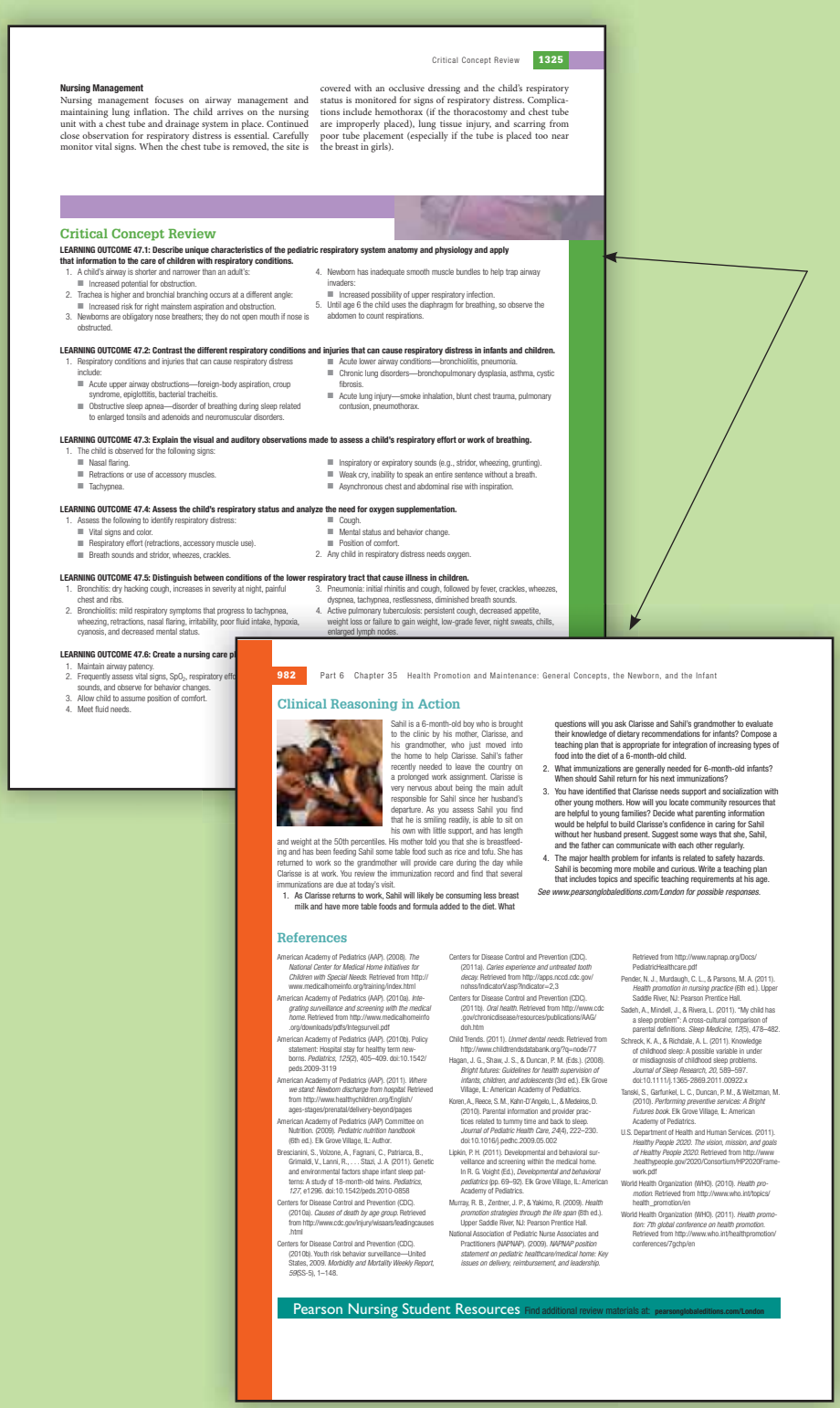
General care instructions:

- Use the bulb syringe to suction the nares of an infant under 1 year of age.
- Give fluids to help thin secretions and provide calories for energy.
- Encourage active toddlers to rest and take naps during recovery.

Advise parents to call the physician if:

- Respiratory symptoms interfere with sleeping or eating.
- Breathing is rapid or difficult.
- Symptoms persist in a child who is less than 1 year old, has heart or lung disease, or was premature and had lung disease after birth.
- The child acts sicker—appears tired, less playful, and less interested in food (parents just "feel" the child is not improving).

Teaching Highlights present special healthcare issues or problems and the related key teaching points to address with the family.



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Nursing Management

Nursing management focuses on airway management and maintaining lung inflation. The child arrives on the nursing unit with a chest tube and drainage system in place. Continued close observation for respiratory distress is essential. Carefully monitor vital signs. When the chest tube is removed, the site is covered with an occlusive dressing and the child's respiratory status is monitored for signs of respiratory distress. Complications include hemothorax (if the thoracostomy and chest tube are improperly placed), lung tissue injury, and scarring from poor tube placement (especially if the tube is placed too near the breast in girls).

Critical Concept Review

LEARNING OUTCOME 47.1: Describe unique characteristics of the pediatric respiratory system anatomy and physiology and apply that information to the care of children with respiratory conditions.

1. A child's airway is shorter and narrower than an adult's:
   - Increased potential for obstruction.
2. Trachea is higher and bronchial branching occurs at a different angle:
   - Increased risk for right mainstem aspiration and obstruction.
3. Newborns are obligatory nose breathers; they do not open mouth if nose is obstructed.
4. Newborn has inadequate smooth muscle bundles to help trap airway invaders:
   - Increased possibility of upper respiratory infection.
5. Until age 6 the child uses the diaphragm for breathing, so observe the abdomen to count respirations.

LEARNING OUTCOME 47.2: Contrast the different respiratory conditions and injuries that can cause respiratory distress in infants and children.

1. Respiratory conditions and injuries that can cause respiratory distress include:
   - Acute upper airway obstructions—foreign-body aspiration, croup syndrome, epiglottitis, bacterial tracheitis.
   - Obstructive sleep apnea—disorder of breathing during sleep related to enlarged tonsils and adenoids and neuromuscular disorders.
   - Acute lower airway conditions—bronchiolitis, pneumonia.
   - Chronic lung disorders—bronchopulmonary dysplasia, asthma, cystic fibrosis.
   - Acute lung injury—smoke inhalation, blunt chest trauma, pulmonary contusion, pneumothorax.

LEARNING OUTCOME 47.3: Explain the visual and auditory observations made to assess a child's respiratory effort or work of breathing.

1. The child is observed for the following signs:
   - Nasal flaring.
   - Retractions or use of accessory muscles.
   - Tachypnea.
   - Inspiratory or expiratory sounds (e.g., stridor, wheezing, grunting).
   - Weak cry, inability to speak an entire sentence without a breath.
   - Asynchronous chest and abdominal rise with inspiration.

LEARNING OUTCOME 47.4: Assess the child's respiratory status and analyze the need for oxygen supplementation.

1. Assess the following to identify respiratory distress:
   - Vital signs and color.
   - Respiratory effort (retractions, accessory muscle use).
   - Breath sounds and stridor, wheezes, crackles.
   - Cough.
   - Mental status and behavior change.
   - Position of comfort.
2. Any child in respiratory distress needs oxygen.

LEARNING OUTCOME 47.5: Distinguish between conditions of the lower respiratory tract that cause illness in children.

1. Bronchitis: dry hacking cough, increases in severity at night, painful chest and ribs.
2. Bronchiolitis: mild respiratory symptoms that progress to tachypnea, wheezing, retractions, nasal flaring, irritability, poor fluid intake, hypoxia, cyanosis, and decreased mental status.
3. Pneumonia: initial rhinitis and cough, followed by fever, crackles, wheezes, dyspnea, tachypnea, restlessness, diminished breath sounds.
4. Active pulmonary tuberculosis: persistent cough, decreased appetite, weight loss or failure to gain weight, low-grade fever, night sweats, chills, enlarged lymph nodes.

LEARNING OUTCOME 47.6: Create a nursing care pl

1. Maintain airway patency.
2. Frequently assess vital signs, SpO_2, respiratory effo sounds, and observe for behavior changes.
3. Allow child to assume position of comfort.
4. Meet fluid needs.

982 Part 6 Chapter 35 Health Promotion and Maintenance: General Concepts, the Newborn, and the Infant

Clinical Reasoning in Action

Sahil is a 6-month-old boy who is brought to the clinic by his mother, Clarisse, and his grandmother, who just moved into the home to help Clarisse. Sahil's father recently needed to leave the country on a prolonged work assignment. Clarisse is very nervous about being the main adult responsible for Sahil since her husband's departure. As you assess Sahil you find that he is smiling readily, is able to sit on his own with little support, and has length and weight at the 50th percentiles. His mother told you that she is breastfeeding and has been feeding Sahil some table food such as rice and tofu. She has returned to work so the grandmother will provide care during the day while Clarisse is at work. You review the immunization record and find that several immunizations are due at today's visit.

1. As Clarisse returns to work, Sahil will likely be consuming less breast milk and have more table foods and formula added to the diet. What questions will you ask Clarisse and Sahil's grandmother to evaluate their knowledge of dietary recommendations for infants? Compose a teaching plan that is appropriate for integration of increasing types of food into the diet of a 6-month-old child.
2. What immunizations are generally needed for 6-month-old infants? When should Sahil return for his next immunizations?
3. You have identified that Clarisse needs support and socialization with other young mothers. How will you locate community resources that are helpful to young families? Decide what parenting information would be helpful to build Clarisse's confidence in caring for Sahil without her husband present. Suggest some ways that she, Sahil, and the father can communicate with each other regularly.
4. The major health problem for infants is related to safety hazards. Sahil is becoming more mobile and curious. Write a teaching plan that includes topics and specific teaching requirements at his age.

See www.pearsonglobaleditions.com/London for possible responses.

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Each chapter ends with a **Critical Concept Review** that outlines the main points of the chapter as they relate to each Learning Outcome, a list of **References**, and directions to link to www.pearsonglobaleditions.com/London for additional resources.

In addition, **cross-reference** icons help you to easily locate related information in other chapters. Important **laboratory values** are highlighted in a different color as a tool for you to assess your patients' conditions. Where relevant, SKILLS found in the companion book, *Clinical Skills Manual for Maternal & Child Nursing Care* (ISBN 0133145824), are cited.

Acknowledgments

Nursing is a dynamic, exciting healthcare profession. As curricula develop, many nursing programs have begun to teach nursing of childbearing families and nursing of children together in a single course. This combined format requires that faculty approach these two fields with a similar framework and philosophy, and with similar teaching methods, so that students can maximize learning. With this fourth edition, we have created a tool that will enable students to master these two critical areas of nursing—the care of childbearing families and the care of children. Creating a dynamic and integrated text would not be possible without the skill and dedication of a host of people.

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