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11TH EDITION

WONG'S

Nursing Care of
Infants and Children

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We dedicate the eleventh edition of this book to David Wilson, who passed away on March 7, 2015, after a long battle with cancer. David had been coauthor of the Wong nursing textbooks for over 15 years. He was known as an expert clinical nurse and nurse educator. His last clinical position was at St. Francis Health Services in Tulsa, Oklahoma, where he worked in the Children's Day Hospital as the coordinator for Pediatric Advanced Life Support (PALS). Students and faculty have recognized David's contributions to the Wong textbooks for many years. He was known as an outstanding educator and supporter of nursing students; his attention to clinical excellence was evident in all his work. Those who contributed to the books and had the opportunity to work with David realize the important role he played as a leader in nursing education for students and faculty. His clinical expertise provided a critical foundation for ensuring that relevant and evidence-based content was used in all the Wong textbooks. David led by example in exemplifying excellence in clinical nursing practice.

Those who knew David well will miss his humor, loyalty to friends and colleagues, and his never-ending support. He is missed greatly by those who worked closely with him on the Wong textbook over the years. Most important, we miss his friendship; he was always there to support and to encourage. We have lost an amazing nurse who worked effortlessly over the years to improve the care of children and families in need. David will not be forgotten.

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It is with great sadness that we announce the passing of Dr. Cheryl Rodgers on July 7th, 2018, following a tragic accident. Cheryl was an exemplary nurse practitioner, educator, and leader in the field of pediatric nursing. Cheryl was an Associate Professor in the Duke University School of Nursing, and she held national leadership positions in the Children's Oncology Group Nursing Discipline and the Association of Pediatric Hematology Nurses. She served on the Journal of Pediatric Oncology Nursing Editorial Board, led several funded research studies, authored numerous impactful publications, and had just been selected for induction as a Fellow in the American Academy of Nursing, the profession's highest honor. Her devotion to pediatric nursing education served her well as a Wong textbook editor and she will be greatly missed. Most importantly, Cheryl was an outstanding role model and treasured mentor to so many pediatric nurses; her loss will be felt broadly and deeply throughout the profession.

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With this eleventh edition of *Wong's Nursing Care of Infants and Children*, we welcome Cheryl Rodgers, who joins Marilyn Hockenberry as coeditor. We would like to take a moment to reflect on the legacy of this textbook. The first edition, published in 1979, was the first of its kind to integrate important principles from the biologic, physical, and behavioral sciences into a pediatric nursing textbook (Whaley & Wong, 1979). With the first edition, the principles and concepts of nursing practice were conceptualized to allow both beginning students and experienced nurses an opportunity to expand and refine nursing care; this proves true with this eleventh edition.

The first edition, compared with the eleventh edition, clearly reflects 21st-century changes in pediatric nursing and demonstrates how scientific evidence has had a significant impact on the specialty. In the first edition, there is no mention of the human genome project, human immunodeficiency virus, autism disorders, respiratory syncytial virus, acute respiratory distress syndrome, acute lung injury, and cystic-fibrosis–related diabetes mellitus; they had yet to be discovered or named. The first edition of this text was perhaps the first pediatric nursing text to recognize the impact of illness and hospitalization on the child and her or his family. It was also first to introduce the concept of family-centered care in an era when the focus of care was centered on the diagnosis and treatment of the disease process.

Although the differences in content between the first *Nursing Care of Infants and Children* textbook and this eleventh edition are evident, the founding principles on which the first edition was established hold true today. This eleventh edition continues to be about families with children, and it emphasizes the philosophy of family-centered care. This book has retained the theme that Donna Wong so passionately advocated: providing atraumatic care—care that minimizes the psychologic and physical stress that health promotion and illness can inflict. The first edition's preface stated, "This book truly embodies the concept of [family-centered] care." We are proud to note that with this new edition, this foundation remains true. Features such as Family-Centered Care, Community Focus, and Atraumatic Care boxes bring these philosophies to life throughout the text. We believe strongly that children and families need consistent caregivers. Establishing therapeutic relationships with the child and family is explored as the essential foundation for providing quality nursing care.

This eleventh edition has been revised to keep pace with new innovations in pediatric nursing care. We feel a unique accountability and responsibility to continue to strive to provide students with the latest information they need to become competent critical thinkers and to attain the sensitivity necessary to become caring pediatric nurses. As editors for the Wong textbooks, we have developed an expert panel of more than 60 nurses and multidisciplinary specialists who assisted in reviewing, revising, rewriting, and authoring portions of the text on areas undergoing rapid and complex change, such as immunizations, genetics, high-risk newborn care, adolescent health issues, and numerous diseases. We have carefully preserved aspects of the book that have met with such universal acceptance—its state-of-the-art evidence-based information; strong, integrated focus on the family and community; logical and user-friendly organization; and easy reading style. We have placed additional emphasis on research with concise reviews of important evidence in Research Focus boxes. With this eleventh edition we emphasize the importance of care evaluation and have added quality indicator boxes throughout the book to demonstrate how quality of care can be assessed among the pediatric population. This format allows students to review new evidence and quality indicators on important topics in a concise way.

Throughout the chapters the reader will find quality patient outcomes that focus on serious health problems. Because nurses are the principal

caregivers within health care institutions, quality patient outcomes are used as an assessment of the ability to provide excellence in patient care. Pathophysiology review figures throughout the text provide a concise evaluation of major health care diseases in children. With an understanding of the pathophysiologic process, the nurse is better prepared to develop evidence-based nursing interventions for patient care. In addition, more than 130 figures are color enhanced to focus on the importance on visual learning. This provides the visual learner with a tangible connection to the content of the text for application to clinical practice.

We have tried to meet the increasing demands of faculty and students to teach and to learn in an environment characterized by rapid change, enormous amounts of information, fewer traditional clinical facilities, and less time to teach. To help students quickly locate essential information, most of the features used in the previous edition have been retained. We continue to use Evidence-Based Practice boxes incorporating the PICOT approach and GRADE evidence quality assessment criteria. Most important, this text continues to encourage students to *think critically*.

This text serves as a reference manual for the practicing nurse. The latest recommendations have been included from authoritative organizations such as the American Academy of Pediatrics, Centers for Disease Control and Prevention, Agency for Healthcare Research and Quality, American Pain Society, American Nurses Association, and National Association of Pediatric Nurse Associates and Practitioners. To expand the universe of available information, websites and e-mail addresses have been included for hundreds of organizations and other educational resources.

ORGANIZATION OF THE BOOK

The same general approach to the presentation of content has been preserved from previous editions, although much content has been added, condensed, and rearranged within this framework to improve flow, minimize duplication, and emphasize health care trends, such as home and community care. This edition has been revised and refined to minimize content duplication, resulting in 34 chapters. The book continues to be divided into two broad parts. The first part of the book, sometimes called the "age and stage" approach, considers infancy, childhood, and adolescence from a developmental context. It emphasizes the importance of the nurse's role in health promotion and maintenance and in considering the family as the focus of care. From a developmental perspective, the care of common health problems is presented, giving readers a sense of what normal problems can be expected in otherwise healthy children and demonstrating when during childhood these problems are most likely to occur. The second part of the book presents the more serious health problems not specific to any particular age-group but that frequently require hospitalization or major medical and nursing interventions.

Unit I (Chapters 1 to 3) provides an overview of the multitude of influences on a child who is developing as a member of a family unit and maturing within a culture, community, and society. **Chapter 1** includes a discussion of morbidity and mortality in infancy and childhood and examines child health care from a historical perspective. Because unintentional injury is one of the leading causes of death in children, an overview of this topic is included. The chapter presents the nursing process, with an emphasis on nursing diagnosis and outcomes and the importance of developing critical thinking skills. The critical components of evidence-based practice provide the template for exploring the latest

pediatric nursing research and practice guidelines throughout the entire book. Discussion of quality patient outcomes and their importance in evaluating the quality of nursing care has been added.

Chapter 2 provides the opportunity to expand the discussion of social, cultural, religious, and family influences on child development and health promotion, including socioeconomic factors, customs, and health beliefs and practices. The content clearly describes the role of the nurse, with such content as guidelines for culturally sensitive interactions and a table discussing religious beliefs that affect nursing care. **Chapter 3** has been revised by a leading genetics nursing expert, who focuses on heredity as it relates to health promotion and the influence of the Human Genome Project on future treatment strategies for inherited diseases.

Unit II (Chapters 4 to 6) is concerned with the principles of critical nursing assessment by keeping pace with the newest evaluation strategies in nursing. **Chapter 4** contains guidelines for communicating with children, adolescents, and their families; telephone triage; and a detailed description of a health assessment, including an extensive discussion of family assessment and nutritional assessment. This chapter provides a comprehensive approach to physical examination and developmental assessment, using the latest literature on temperature measurement and the latest growth charts on how to assess a child's body mass index (BMI).

In this edition, an important chapter with new contributors is devoted to critical assessment and management of pain in children. Although the literature on pain assessment and management in children has grown considerably, this knowledge has not been widely applied in practice. **Chapter 5** addresses this concern by presenting detailed pain assessment and management strategies, including discussion of common pain states in children. **Chapter 6** is a newly developed chapter for the eleventh edition that focuses on infection control and the various infectious diseases encountered in childhood. In addition, it details hospital-acquired infections, childhood communicable diseases, and childhood immunizations.

Unit III (Chapters 7 to 9) stresses the importance of the neonatal period, the time of greatest risk to a child's survival, and discusses several health concerns encountered in the vulnerable first month of life. **Chapter 7** has been updated and revised to include the latest information on the benefits of breastfeeding and dietary intake of vitamin D. Atraumatic care sections have been revised to include the latest evidence-based recommendations for pain management in newborns. This chapter also discusses the impact of prebiotics and probiotics on infant nutrition and well-being. The sections on infant safety, newborn circumcision, and circumcision analgesia have all been revised and updated. Newborn screening guidelines have also been extensively updated. **Chapter 8** has been revised and updated by a new contributor who is an expert in high-risk neonatal care. The latest guidelines for the management of hyperbilirubinemia in late-preterm and term newborns and for follow-up and management of hyperbilirubinemia in the breastfeeding pair are included in this edition. The chapter includes updated sections on care of the infant with cleft lip or palate and Pierre Robin sequence. Updated management protocols for neonatal hypoglycemia are also included. Atraumatic care of the newborn remains an important concept in these chapters. Evidence-based practice and critical thinking exercises have been updated as well. **Chapter 9**, revised and updated by a new contributor, includes updated and revised sections on care of the preterm infant, including therapeutic positioning, preterm infant nutrition, revised guidelines for supplemental oxygen administration, noninvasive (gentle) mechanical ventilation, necrotizing enterocolitis, neonatal sepsis, discharge planning, retinopathy of prematurity, neonatal skin care guidelines, and neonatal/perinatal stroke. The most recent information regarding hypoxic ischemic reperfusion injury and therapeutic hypothermia are presented in this chapter. This chapter also contains information

regarding maternal conditions that may adversely affect the fetus and newborn, including maternal viruses, maternal diabetes, fetal alcohol and tobacco exposure, and neonatal drug exposure.

Units IV through VII (Chapters 10 to 18) present the major developmental stages in childhood, expanded to provide a broader concept of the stages and the health problems most often associated with each age-group. Special emphasis is placed on the preventive aspects of care. The health promotion chapters follow a standard approach that is used consistently for each age-group.

The chapters on health problems primarily reflect typical and age-related concerns. The information on many disorders has been revised to reflect recent changes. Examples include the latest information on food sensitivity, severe acute malnutrition, colic, failure to thrive, child passenger safety, pacifier use, thumb sucking, lead poisoning, sexual abuse, attention-deficit/hyperactivity disorder, school-related violence, conduct disorders, tobacco use, contraception, teenage pregnancy, substance abuse, self-harm, and eating disorders such as anorexia nervosa and childhood obesity. This section presents the latest Dietary Reference Intake (DRI) guidelines, American Heart Association dietary guidelines for children, and U.S. Department of Agriculture dietary intake guidelines for children (MyPlate), aimed at decreasing childhood obesity and cardiovascular disease. The sections on sudden infant death syndrome (SIDS) and apparent life-threatening events (ALTEs) have been extensively updated to include the latest American Academy of Pediatrics considerations for recognized SIDS protective and risk factors. A common theme in these chapters is the recognition of the impact of accidental childhood injury on childhood morbidity and mortality and efforts for prevention of such injuries.

Childhood obesity information is now located in the school-age child chapter to emphasize the need for earlier assessment and intervention of this health problem. The chapters on adolescence include the latest information on the management of eating disorders, and also recommendations for preventive health screening in adolescents. Sections on male and female reproductive health conditions and sexual orientation have been revised and updated. The chapter includes updates on the latest screening guidelines for adolescent hypertension and hyperlipidemia.

Unit VIII (Chapters 19 and 20) deals with children who have the same developmental needs as growing children but who, because of congenital or acquired physical, cognitive, or sensory impairment, require alternative interventions to facilitate development. **Chapter 19** combines discussion of chronic illness, disability, and end-of-life care for the child and family. It reflects the latest trends in the care of families and children with chronic illness or disability, such as home care, normalizing children's lives, focusing on developmental needs, enabling and empowering families, and providing early intervention. The content in **Chapter 20** on cognitive, sensory, and communication impairment includes the latest information on cognitive impairment and learning disorders.

Unit IX (Chapters 21 and 22) is concerned with the impact of hospitalization on the child and the family and presents a comprehensive overview of the stressors imposed by hospitalization and nursing interventions available to prevent or eliminate these stressors. **Chapter 21** discusses the care of the hospitalized child and family with consideration for increasing care in ambulatory centers. **Chapter 22** explores safe implementation of procedures in children, including emphasis on the use of therapeutic holding. This chapter also includes numerous Evidence-Based Practice boxes designed to provide rationales for the interventions discussed in the chapter. Recommendations for practice are based on the evidence and are concisely presented in Evidence-Based Practice boxes throughout the chapter.

Units X through XIV (Chapters 23 to 34) consider serious health problems of infants and children primarily from a biologic system

orientation, which has the practical organizational value of permitting health care problems and nursing considerations to relate to specific pathophysiologic disturbances. Important additions and revisions include discussion of hepatitis, all blood disorders, influenza management recommendations, acute respiratory distress syndrome/acute lung injury (ARDS/ALI), respiratory syncytial virus (RSV), tuberculosis, the latest classification for asthma, effects of tobacco exposure, seizures, chemotherapy, acquired immunodeficiency syndrome, diabetes mellitus, and burns. Examples of the updates and revisions for these units include the following: **Chapter 27** on the child with cardiovascular dysfunction has major revisions to the latest guidelines for assessment and management of the most common heart disorders in children. **Chapter 30** contains significant updates on seizures and epilepsy and cerebral abnormalities, including Chiari I and II malformations. **Chapter 34** includes updates on Guillain-Barré syndrome, cerebral palsy, infant botulism, and respiratory management of neuromuscular conditions such as spinal muscular atrophy and muscular dystrophy.

UNIFYING PRINCIPLES

Several unifying principles have guided the organizational structure of this book since its inception. These principles continue to strengthen the book with each revision to maintain a consistent approach throughout each chapter.

The Family as the Unit of Care

The child is an essential member of the family unit. Nursing care is most effective when it is delivered with the belief that *the family is the patient*. This belief permeates the book. The family is seen as a myriad of structures; each has the potential to provide a caring, supportive environment in which the child can grow, mature, and maximize his or her human potential. In addition to family-centered care being integrated into every chapter, an entire chapter is devoted to understanding the family as the core focus in children's lives. Another chapter discusses the social, cultural, and religious influences on family beliefs. Separate sections in yet another chapter deal in depth with family communication and family assessment. The impact of illness, hospitalization, home care, and the death of a child are covered extensively in three additional chapters. The needs of the family are emphasized throughout the text under Nursing Care Management, with a separate section on family support. Numerous Family-Centered Care boxes are included to assist nurses in understanding and providing helpful information to families.

An Integrated Approach to Development

Children are not small adults but are special individuals with unique minds, bodies, and needs. No book on pediatric nursing is complete without extensive coverage of communication, nutrition, play, safety, dental care, sexuality, sleep, self-esteem, and, of course, parenting. Nurses promote the healthy expression of development and need to understand how this is observed in children at different ages and stages. Effective parenting depends on the parents' knowledge of development, and it is often the nurse's responsibility to provide parents with a developmental awareness of their children's needs. For these reasons, coverage of the many dimensions of childhood is integrated within each developmental-stage chapter, rather than being presented in a separate chapter. Safety concerns, for instance, are very different for a toddler than for an adolescent. Sleep needs change with age, as do nutritional needs. As a result, the units on each stage of childhood contain complete information on all these subjects as they relate to the specific age. Using the integrated approach, students gain an appreciation for the unique characteristics and needs of children at every age and stage of development.

Focus on Wellness and Illness: Child, Family, and Community

In a pediatric nursing text, a focus on illness is expected. Children become ill, and nurses typically are involved in helping children get well. However, it is not sufficient to prepare students to care primarily for sick children. First, health is more than the absence of disease. Being healthy is being whole in mind, body, and spirit; therefore the majority of the first half of the book is devoted to discussions that promote physical, psychosocial, mental, and spiritual wellness. Much emphasis is placed on anticipatory guidance of parents to prevent injury or illness in the child. Second, more than ever, health care is prevention focused. The objectives set forth in *Healthy People 2020* clearly establish a health care agenda in which solutions to medical/social problems lie in preventive strategies. Competent nursing care flows from this knowledge and is enhanced by an awareness of childhood development, family dynamics, and communication skills.

Nursing Care

Although this text incorporates information from numerous disciplines (e.g., medicine, pathophysiology, pharmacology, nutrition, psychology, sociology), its primary purpose is to provide information on the nursing care of children and families. Discussions of disorders conclude with a section on Nursing Care Management. Although many aspects of the nursing care of children and families have changed significantly over the last few decades, the focus must continue to be on the quality of care. For the quality of care to be maintained, pediatric nurses must be proactive in staying informed about the strength of evidence that supports specific nursing practices. The Nursing Care Management sections are designed to provide the latest evidence for the implementation of evidence-based nursing practice. In addition, all of the nursing care plans have been updated to current practices and include case studies to provide students with real examples to demonstrate critical thinking skills as they develop their own care plans.

Critical Role of Research and Evidence-Based Practice

This eleventh edition is the product of an extensive review of the literature published since the book was last revised. In addition, Research Focus boxes provide the student with a concise discussion of the latest research on a given topic. So that information is accurate and current, most citations are less than 5 years old, and almost every chapter has entries within 1 year of publication. Examples of current cutting-edge information include recommendations from the American Academy of Pediatrics on immunizations and media use. The chapter on pain reflects the latest guidelines from the Agency for Healthcare Research and Quality (AHRQ), formerly known as the Agency for Health Care Policy and Research (AHCPR), and the American Pain Society. The discussions on skin care reflect the AHRQ's guidelines on pressure ulcers. The American Diabetes Association's classification of diabetes mellitus is included, as are the most recent treatment guidelines for asthma.

• • •

Just as children and their families bring with them a value system and unique background that affect their role within the health care system, so too must each nurse bring to each child and family an individual set of characteristics and values that will affect their relationship. Although we have attempted to present a total picture of the child in each age-group, both in wellness and in illness, no one child, family, or nurse will be found in this book. We hope that each page, chapter, and unit builds a foundation on which the nurse can begin to construct an ideal of comprehensive, atraumatic, and individualized nursing care for infants, children, adolescents, and their families.

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SPECIAL FEATURES

Much effort has been directed toward making this book easy to teach from and, more important, easy to learn from. In this edition, the following features have been included to benefit educators, students, and practitioners.

APPLYING EVIDENCE TO PRACTICE

Applying Evidence to Practice boxes are new specialty boxes throughout the text outlining up-to-date procedures to show best practice and focus on applying evidence.

ATRAUMATIC CARE

Atraumatic Care boxes emphasize the importance of providing competent care without creating undue physical and psychological distress. Although many of the boxes provide suggestions for managing pain, atraumatic care also considers approaches to promote self-esteem and prevent embarrassment.

CONCEPTS

Concepts have been added to the beginning of each chapter to focus student attention on unique principles found in each chapter as well as aid students using concept-based curriculum, system-focused curriculum, or a hybrid approach.



COMMUNITY AND HOME HEALTH CONSIDERATIONS

Community and Home Health Considerations boxes address issues that expand to the community, such as increasing immunization rates, preventing lead poisoning, or decreasing smoking among teens.



CRITICAL THINKING CASE STUDY

Critical Thinking Case Study boxes have been revised in this edition to describe brief scenarios of the child-family-nurse interaction that depict real-life clinical situations. From the synthesis of the topical content and a critical analysis of possible options, the reader chooses the best intervention and learns to make clinical judgments. A rationale is offered for the correct answer, and explanations are given for the incorrect options at the end of the chapter.



CULTURAL CONSIDERATIONS

Cultural Considerations boxes integrate concepts of culturally sensitive care throughout the text. Their emphasis is on the clinical application of the information, whether it focuses on toilet training or on male or female circumcision.



DRUG ALERT

Drug Alert boxes highlight critical drug safety concerns for better therapeutic management.



EMERGENCY TREATMENT

Emergency Treatment boxes enable the reader to quickly learn interventions for crisis situations.



FAMILY-CENTERED CARE

Family-Centered Care boxes present issues of special significance to families who have a child with a particular disorder. This feature is another method of highlighting the needs or concerns of families that should be addressed when family-centered care is provided.



NURSING ALERT

Nursing Alert boxes call the reader's attention to considerations that if ignored could lead to a deteriorating or emergency situation. Key assessment data, risk factors, and danger signs are among the kinds of information included.



NURSING CARE GUIDELINES

Nursing Care Guidelines boxes summarize important nursing interventions for a variety of situations and conditions.



NURSING CARE PLAN

Nursing Care Plan boxes include expected patient outcomes and rationales for the included nursing interventions that may not be immediately evident to the student. The care plans include a case study that represents a "real" patient and family to demonstrate the principles of nursing care plans and how they are used to organize care.

NURSING TIP

Nursing Tip boxes present handy information of a nonemergency nature that makes patients more comfortable and the nurse's job a little easier.

PATHOPHYSIOLOGY REVIEW

Pathophysiology Review boxes have been revised in this edition to provide the student with a visual representation of the effects of the disease process on the child. These illustrations provide knowledge required for the nurse to implement appropriate evidence-based nursing interventions and provide independent care, as well as collaborative care with other health care professionals.

QUALITY PATIENT OUTCOMES

Quality Patient Outcomes boxes are added throughout the text to provide a framework for measuring nursing care performance. Nursing-sensitive outcome measures are integrated into the outcome indicators used throughout the book.

 **RESEARCH FOCUS**

Research Focus boxes review new evidence on important topics in a concise way.

TRANSLATING EVIDENCE INTO PRACTICE

Translating Evidence into Practice boxes have been completely revised in this edition to focus the reader's attention on application of both research and critical thought processes to support and guide the outcomes of nursing care and to provide measurable outcomes that nurses can use to validate their unique role in the health care system.

Numerous pedagogic devices that enhance student learning have been retained from previous editions:

- More than 100 **COLOR PHOTOGRAPHS** are included in this edition to reflect the latest in nursing care. Anatomic drawings are easy to

follow, with color appropriately used to illustrate important aspects, such as saturated and desaturated blood. New figures reflecting a **PATHOPHYSIOLOGY REVIEW** of various disorders have been added throughout the book. As an example, the full-color heart illustrations in Chapter 27 clearly depict congenital cardiac defects and associated hemodynamic changes.

- A functional and attractive **FULL-COLOR DESIGN** visually enhances the organization of each chapter, as well as the special features.
- An **INDEX**, detailed and cross-referenced, allows readers to quickly access discussions.
- **KEY TERMS** are highlighted throughout each chapter to reinforce student learning.
- **BLOOD PRESSURE LEVELS** on the inside back cover provide information nurses refer to often.
- Hundreds of **TABLES** and **BOXES** highlight key concepts and nursing interventions.

ACKNOWLEDGMENTS

This eleventh edition of *Wong's Nursing Care of Infants and Children* brings with it new contributors to the book. To continue the Wong legacy of excellence in nursing education, we have joined together numerous contributors with diverse expert nursing backgrounds to continue the commitment to providing the latest state-of-the-art information on pediatric nursing practice. We are grateful to the many nursing faculty members, practitioners, and students who have offered their comments, recommendations, and suggestions. We are grateful to the many reviewers who brought constructive criticism, suggestions, and clinical expertise to this edition. We could not have completed the enormous task of updating and adding information without the dedication of these special people.

No book is ever a reality without the dedication and perseverance of the editorial staff. Although it is impossible to list every individual at Elsevier who has made exceptional efforts to produce this text, we are especially grateful to **Heather Bays**, whose commitment to pediatric nursing education over the years is reflective of outstanding editorial staff. She is passionate about her work, and her commitment to the Wong textbooks is noted in all she does. We want to thank **Sandra Clark** for all her support, and a special thanks also to **Tracey Schriefer** for her commitment to excellence.

Finally, we thank our families and children for the unselfish love and endless patience that allows us to devote such a large portion of our lives to our careers.

Marilyn J. Hockenberry
Cheryl C. Rodgers

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Perspectives of Pediatric Nursing

Marilyn J. Hockenberry

<http://evolve.elsevier.com/wong/ncic>

CONCEPTS

- Family-Centered Care
- Atraumatic Care
- Clinical Reasoning
- Nursing Process
- Research and Evidence-Based Practice
- Quality Outcome Measures

HEALTH CARE FOR CHILDREN

The major goal for pediatric nursing is to improve the quality of health care for children and their families. In 2016 almost 74 million children 0 to 17 years old lived in the United States, making up 24% of the population (*Federal Interagency Forum on Child and Family Statistics, 2017*). The health status of children in the United States has improved in a number of areas, including increased immunization rates for all children, decreased adolescent birth rate, and improved child health outcomes. The 2017 America's Children in Brief—Indicators of Well-Being reveals that preterm births increased slightly in 2015, after a continuous decline since 2007. Average mathematics scores for fourth- and eighth-grade students decreased, and the violent crime victimization rate among youth decreased during the last 20 years. Although the number of children living in poverty decreased slightly in 2015, overall the rate remains high at 20%. The percentage of children with at least one parent employed full time year remained steady at 75% in 2015 (see *Research Focus* box) (*Federal Interagency Forum on Child and Family Statistics, 2017*).

Millions of children and their families have no health insurance, which results in a lack of access to care and health promotion services. In addition, disparities in pediatric health care are related to race, ethnicity, socioeconomic status, and geographic factors (*Flores & Lesley, 2014*). Patterns of child health are shaped by medical progress and societal trends. Urgent priorities for health and health care of children in the United States are the focus for action toward new policy priorities (*Box 1.1*).

RESEARCH FOCUS

National Children's Study

The National Children's Study is the largest prospective, long-term study of children's health and development conducted in the United States. The study is designed to follow 100,000 children and their families from birth to 21 years old to understand the link between children's environments and their physical and emotional health and development (*Duncan, Kirkendall, & Citro, 2014*). Researchers hope that a study of this magnitude will provide information on innovative interventions for families, children, and health care providers to eradicate unhealthy diets, dental caries, and childhood obesity and to bring a significant reduction in violence, injury, substance abuse, and mental health disorders among the nation's children. This study supports the Healthy People 2020 primary goals to increase the quality and years of healthy life and eliminate health disparities related to race, ethnicity, and socioeconomic status (*US Department of Health and Human Services, 2013*).

HEALTH PROMOTION

Child health promotion provides opportunities to reduce differences in current health status among members of different groups and to ensure equal opportunities and resources to enable all children to achieve their fullest health potential. The Healthy People 2020 Leading Health Indicators (*Box 1.2*) provide a framework for identifying essential components for child health promotion programs designed to prevent future health

BOX 1.1 Health and Health Care Priorities for American Children

Poverty
Hunger
Lack of health insurance
Child abuse and neglect
Overweight and obesity
Firearm deaths and injuries
Mental health
Racial and ethnic disparities
Immigration

Adapted from Flores, G., & Lesley, B. (2014). Children and US federal policy on health and health care: Seen but not heard. *JAMA Pediatrics*, 168(12), 1155-1163.

BOX 1.2 Healthy People 2020

Goals

Increase quality and length of healthy life
Eliminate health disparities

Leading Health Indicators

Physical activity
Overweight and obesity
Tobacco use
Substance abuse
Responsible sexual behavior
Mental health
Injury and violence
Environmental quality
Immunization
Access to health care

From US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. (2013). *Healthy People 2020*. Retrieved from <http://www.healthypeople.gov/>

problems in our nation's children. Bright Futures is a national health promotion initiative with a goal to improve the health of our nation's children (Bright Futures, 2016). Major themes of the Bright Futures guideline are promoting family support, child development, mental health, and healthy nutrition that leads to healthy weight, physical activity, oral health, healthy sexual development and sexuality, safety and injury prevention, and the importance of community relationships and resources.* Throughout this book, developmentally appropriate health promotion strategies are discussed. Key examples of child health promotion themes essential for all age-groups include promoting development, nutrition, and oral health. Bright Futures recommendations for preventive health care during infancy, early childhood, and adolescence are found in Chapters 7, 10, 12, 13, 15, and 17.

Development

Health promotion integrates surveillance of the physical, psychologic, and emotional changes that occur in human beings between birth and the end of adolescence. Developmental processes are unique to each stage of development, and continuous screening and assessment are essential for early intervention when problems are found. The most dramatic time of physical, motor, cognitive, emotional, and social development occurs during infancy. Interactions between the parent and infant

are central to promoting optimal developmental outcomes and are a key component of infant assessment. During early childhood, early identification of developmental delays is critical for establishing early interventions. Anticipatory guidance strategies ensure that parents are aware of the specific developmental needs of each developmental stage. Ongoing surveillance during middle childhood provides opportunities to strengthen cognitive and emotional attributes, communication skills, self-esteem, and independence. Recognition that adolescents differ greatly in their physical, social, and emotional maturity is important for surveillance throughout this developmental period.

An important example for health promotion during early child development is to be aware of changing recommendations that address the fast-changing world of technology in our society. An important example is the changes in the latest American Academy of Pediatrics (2016) policy statement on screen viewing by infants and children. New guidelines for screen viewing (laptop or phone) shift the importance from what is on the screen to who is viewing the information with the young child (American Academy of Pediatrics, 2016). For infants less than 18 months of age, no screen time is recommended except for video calling with a grandparent or loved one. Parents should be advised to use technology sparingly before 5 years of age and to always participate during screen-time viewing.

Nutrition

Nutrition is an essential component for healthy growth and development. Human milk is the preferred form of nutrition for all infants. Breastfeeding provides the infant with micronutrients, immunologic properties, and several enzymes that enhance digestion and absorption of these nutrients. A recent resurgence in breastfeeding has occurred as a result of the education of mothers and fathers regarding its benefits and increased social support.

Children establish lifelong eating habits during the first 3 years of life, and the nurse is instrumental in educating parents on the importance of nutrition. Most eating preferences and attitudes related to food are established by family influences and culture. During adolescence, parental influence diminishes and the adolescent makes food choices related to peer acceptability and sociability. Occasionally these choices are detrimental to adolescents with chronic illnesses such as diabetes, obesity, chronic lung disease, hypertension, cardiovascular risk factors, and renal disease.

Families that struggle with lower incomes, homelessness, and migrant status generally lack the resources to provide their children with adequate food intake, nutritious foods such as fresh fruits and vegetables, and appropriate protein intake (Flores & Lesley, 2014). The result is nutritional deficiencies with subsequent growth and developmental delays, depression, and behavior problems.

Oral Health

Oral health is an essential component of health promotion throughout infancy, childhood, and adolescence. Preventing dental caries and developing healthy oral hygiene habits must occur early in childhood. Dental caries has been recommended for decades as a significant yet preventable health problem for children (Clark, Kent, & Jackson, 2015). Children in racial or cultural minority groups, experience disparities in oral health care and are much more likely to have dental disease. In children ages 2 to 8 years, Hispanic and non-Hispanic black children are twice as likely to experience any dental caries in primary teeth compared with non-Hispanic white children (Dye, Thornton-Evans, Li, et al., 2015).

Preschoolers of low-income families are twice as likely to develop tooth decay and only half as likely to visit the dentist as other children. Early childhood caries is a preventable disease, and nurses play an essential role in educating children and parents about practicing dental hygiene, beginning with the first tooth eruption; drinking fluoridated water,

*Bright Futures is supported by the American Academy of Pediatrics (see <http://brightfutures.aap.org/about.html>).

including bottled water; and instituting early dental preventive care. Oral health care practices established during the early years of development prevent destructive periodontal disease and dental decay.

CHILDHOOD HEALTH PROBLEMS

Changes in modern society, including advancing medical knowledge and technology, the proliferation of information systems, struggles with insurance disparities, economically troubled times, and various changes and disruptive influences on the family, are leading to significant medical problems that affect the health of children. Problems that can negatively affect a child's development include poverty, violence, aggression, non-compliance, school failure, and adjustment to parental separation and divorce. In addition, mental health issues cause challenges in childhood and adolescence. Recent concern has focused on groups of children who are at highest risk, such as children born preterm or with very low birth weight (VLBW) or low birth weight (LBW), children attending child care centers, children who live in poverty or are homeless, children of immigrant families, and children with chronic medical and psychiatric illness and disabilities. In addition, these children and their families face multiple barriers to adequate health, dental, and psychiatric care. A perspective of several health problems facing children and the major challenges for pediatric nurses is discussed in the following sections.

Obesity and Type 2 Diabetes

Childhood obesity, the most common nutritional problem among American children, is increasing in epidemic proportions (Martin, Saunders, Shenkin, et al., 2014). *Obesity* in children and adolescents is defined as a body mass index (BMI) at or greater than the 95th percentile for youth of the same age and gender. *Overweight* is defined as a BMI at or above the 85th percentile and below the 95th percentile for children and teens of the same age and sex. Over 30% of America's children are overweight, and 17% are obese (Flores & Lesley, 2014).

Increasing evidence associates maternal obesity as a major influence on offspring health during childhood and in adult life (Godfrey, Reynolds, Prescott, et al., 2016). An optimal nutritional and microbial environment during pregnancy may reduce the risk of infants being obese or overweight during early life (Garcia-Mantrana & Collado, 2016).

Lack of physical activity related to limited resources, unsafe environments, and inconvenient play and exercise facilities, combined with easy access to television and video games, increases the incidence of obesity among low-income, minority children. Overweight youth have increased risk for cardiometabolic changes (a cluster of cardiovascular factors that include hypertension, altered glucose metabolism, dyslipidemia, and abdominal obesity) in the future (Weiss, Bremer, & Lustig, 2013) (Fig. 1.1). The US Department of Health and Human Services (2013) suggests that nurses focus on prevention strategies to reduce the incidence of overweight children from the current 20% in all ethnic groups to less than 6%. Emphasis is on preventive strategies that start in infancy and even in the prenatal period. Lifestyle interventions show promise in preventing obesity and decreasing occurrence if targeted at children 6 to 12 years old (Martin, Saunders, Shenkin, et al., 2014).

Childhood Injuries

Injuries are the most common cause of death and disability to children in the United States (Centers for Disease Control and Prevention, 2016) (Table 1.1). Mortality rates for suicide, poisoning, and falls rose substantially over the past decade. Other unintentional injuries (head injuries, drowning, burns, and firearm accidents) take the lives of children every day. Implementing programs of accident prevention and health promotion could prevent many childhood injuries and fatalities.

The type of injury and the circumstances surrounding it are closely related to normal growth and development (Box 1.3). As children develop,



FIG. 1.1 The American culture's intake of high-caloric, fatty food contributes to obesity in children.

their innate curiosity compels them to investigate the environment and to mimic the behavior of others. This is essential to acquire competency as an adult, but it can also predispose children to numerous hazards.

The child's developmental stage partially determines the types of injuries that are most likely to occur at a specific age and helps provide clues to preventive measures. For example, small infants are helpless in any environment. When they begin to roll over or propel themselves, they can fall from unprotected surfaces. The crawling infant, who has a natural tendency to place objects in the mouth, is at risk for aspiration or poisoning. The mobile toddler, with the instinct to explore and investigate and the ability to run and climb, may experience falls, burns, and collisions with objects. As children grow older, their absorption with play makes them oblivious to environmental hazards such as street traffic or water. The need to conform and gain acceptance compels older children and adolescents to accept challenges and dares. Although the rate of injuries is high in children younger than 9 years old, most fatal injuries occur in later childhood and adolescence.

The pattern of deaths caused by unintentional injuries, especially from motor vehicle accidents (MVAs), drowning, and burns, is remarkably consistent in most Western societies. The leading causes of death from injuries for each age-group according to sex are presented in Table 1.1. The majority of deaths from injuries occur in boys. It is important to note that accidents continue to account for more than three times as many teen deaths as any other cause (Annie E Casey Foundation, 2016). Fortunately, prevention strategies such as the use of car restraints, bicycle helmets, and smoke detectors have significantly decreased fatalities for children. Nevertheless, the overwhelming causes of death in children are MVAs, including occupant, pedestrian, bicycle, and motorcycle deaths; these account for more than half of all injury deaths (Kidscount Data Center, 2016) (Fig. 1.2).

Pedestrian accidents involving children account for significant numbers of motor vehicle-related deaths. Most of these accidents occur at midblock, at intersections, in driveways, and in parking lots. Driveway injuries typically involve small children and large vehicles backing up.

Bicycle-associated injuries also cause a number childhood deaths. Children ages 5 to 9 years are at greatest risk of bicycling fatalities. The majority of bicycling deaths are from traumatic head injuries (Centers for Disease Control and Prevention, 2016). Helmets greatly reduce the risk of head injury, but few children wear helmets. Community-wide bicycle helmet campaigns and mandatory-use laws have resulted in significant increases in helmet use. Still, issues such as stylishness, comfort, and

TABLE 1.1 Mortality From Leading Types of Unintentional Injuries, United States

Type of Injury	AGE (YEARS)			
	<1	1–4	5–14	15–24
Males				
All causes	716.4	31.2	15.9	108.8
Unintentional injuries (all types)	33.3	10.5	5.8	48.1
Motor vehicle	2.8 (2)	3.0 (2)	3.0 (1)	29.5 (1)
Drowning	1.1 (4)	3.4 (1)	0.9 (2)	2.3 (3)
Fires and burns	0.5 (5)	1.1 (3)	0.5 (3)	0.4 (5)
Firearms	—	—	—	—
Choking	1.7 (3)	0.5 (5)	—	—
Falls	—	—	—	0.9 (4)
Mechanical suffocation	25.0 (1)	0.6 (4)	0.2 (4)	—
Poisoning	—	—	0.1 (5)	11.2 (2)
All other unintentional injuries	4.6	1.9	1.0	3.8
Injuries as a percent of all deaths	4.6%	33.7%	36.5%	44.2%
Females				
All causes	591.7	24.7	12.0	39.2
Unintentional injuries (all types)	28.0	6.9	3.4	16.6
Motor vehicle	2.0 (2)	2.4 (1)	2.0 (1)	11.7 (1)
Drowning	0.9 (4)	1.8 (2)	0.4 (2)	0.3 (3)
Fires and burns	0.4 (5)	0.9 (3)	0.4 (2)	0.3 (3)
Firearms	—	—	—	—
Choking	1.1 (3)	0.3 (4)	—	—
Falls	—	—	—	0.2 (5)
Mechanical suffocation	21.4 (1)	0.3 (4)	0.1 (4)	—
Poisoning	—	—	0.1 (4)	3.4 (2)
All other unintentional injuries	2.1	1.1	0.4	0.8
Injuries as a percent of all deaths	4.7%	27.9%	28.3%	42.3%

*Rate per 100,000 population in each age-group.

Adapted from National Safety Council. (2012). *Injury facts, 2012* edition. Itaska, IL: Author.

Data from National Center for Health Statistics and US Census Bureau.

social acceptability remain important factors in noncompliance. Nurses can educate children and families about pedestrian and bicycle safety. In particular, school nurses can promote helmet wearing and encourage peer leaders to act as role models.

Drowning and burns are among the top three leading causes of deaths for males and females throughout childhood (Fig. 1.3). In addition, improper use of firearms is a major cause of death among males (Fig. 1.4). During infancy, more boys die of aspiration or suffocation than do girls (Fig. 1.5). Each year, more than 500,000 children ages 5 years and younger experience a potential poisoning related to medications (Ferguson, Osterthaler, & Kaminski, 2015). Currently, more children are brought to emergency departments (EDs) for unintentional medication overdoses. Approximately 95% of medication-related ED visits in children younger than 5 years are due to ingesting medication while unsupervised (Fig. 1.6). Intentional poisoning, associated with drug and alcohol abuse and suicide attempt, is the second leading cause of death in adolescent females and the third leading cause in adolescent males.

BOX 1.3 Childhood Injuries: Risk Factors

- *Sex*—Preponderance of males; difference mainly the result of behavioral characteristics, especially aggression
- *Temperament*—Children with difficult temperament profile, especially persistence, high activity level, and negative reactions to new situations
- *Stress*—Predisposes children to increased risk taking and self-destructive behavior; general lack of self-protection
- *Alcohol and drug use*—Associated with higher incidence of motor vehicle injuries, drownings, homicides, and suicides
- *History of previous injury*—Associated with increased likelihood of another injury, especially if initial injury required hospitalization
- *Developmental characteristics*
 - Mismatch between child's developmental level and skill required for activity (e.g., all-terrain vehicles)
 - Natural curiosity to explore environment
 - Desire to assert self and challenge rules
 - In older child, desire for peer approval and acceptance
- *Cognitive characteristics* (age specific)
 - *Infant*—Sensorimotor: explores environment through taste and touch
 - *Young child*—Object permanence: actively searches for attractive object; cause and effect: lacks awareness of consequential dangers; transductive reasoning: may fail to learn from experiences (e.g., perceives falling from a step as a different type of danger from climbing a tree); magical and egocentric thinking: is unable to comprehend danger to self or others
 - *School-age child*—Transitional cognitive processes: is unable to fully comprehend causal relationships; attempts dangerous acts without detailed planning regarding consequences
 - *Adolescent*—Formal operations: is preoccupied with abstract thinking and loses sight of reality; may lead to feeling of invulnerability
- *Anatomic characteristics* (especially in young children)
 - *Large head*—Predisposes to cranial injury
 - *Large spleen and liver with wide costal arch*—Predisposes to direct trauma to these organs
 - *Small and light body*—May be thrown easily, especially inside a moving vehicle
- *Other factors*—Poverty, family stress (e.g., maternal illness, recent environmental change), substandard alternative child care, young maternal age, low maternal education, multiple siblings



FIG. 1.2 Motor vehicle injuries are the leading cause of death in children older than 1 year of age. The majority of fatalities involve occupants who are unrestrained.

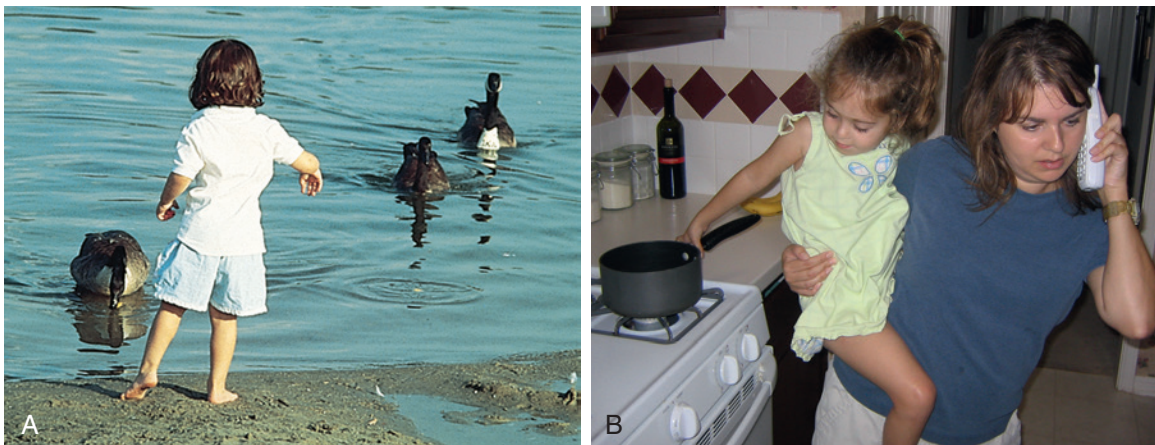


FIG. 1.3 **A**, Drowning is one of the leading causes of death. Children left unattended are unsafe even in shallow water. **B**, Burns are among the top three leading causes of death from injury in children 1 to 14 years old.



FIG. 1.4 Improper use of firearms is the fourth leading cause of death from injury in children 5 to 14 years old. (© 2012 Photos.com, a division of Getty Images. All rights reserved.)



FIG. 1.6 Poisoning causes a considerable number of injuries in children younger than 4 years old. Medications should never be left where young children can reach them.



FIG. 1.5 Mechanical suffocation is the leading cause of death from injury in infants.

Violence

Youth violence is a high-visibility, high-priority concern in every sector of American society (David-Ferdon & Simon, 2014). Strikingly higher homicide rates are found among minority populations, especially African American children. The causes of violence against children and self-inflicted violence are not fully understood. Violence seems to permeate American households through television programs, commercials, video games, and movies, all of which tend to desensitize the child toward violence. Violence also permeates the schools with the availability of guns, illicit drugs, and gangs. The problem of child homicide is extremely complex and involves numerous social, economic, and other influences. Prevention lies in a better understanding of the social and psychological factors that lead to the high rates of homicide and suicide. Nurses need to be especially aware of young people who harm animals or start fires, are depressed, are repeatedly in trouble with the criminal justice system, or are associated with groups known to be violent. Prevention requires early identification and rapid therapeutic intervention by qualified professionals.

COMMUNITY AND HOME HEALTH CONSIDERATIONS

Violence in Children

Community violence has reached epidemic proportions in the United States. The serious problem of community violence affects the lives of many children and expands throughout the family, schools, and the workplace. Nurses working with children, adolescents, and families have a critical role in reducing violence through early identification and symptom recognition of the mental-emotional stress that can result from these experiences.

Violent crimes continue to be a significant health issue for children, with homicide being the second leading cause of death in 15- to 19-year-olds (Annie E Casey Foundation, 2014). The multifaceted origins of violence include developmental factors, gang involvement, access to firearms, drugs, the media, poverty, and family conflict. Often the silent and underrecognized victims are the children who witness acts of community violence. Studies suggest that chronic exposure to violence has a negative effect on a child's cognitive, social, psychologic, and moral development. Also, multiple exposures to episodes of violence do not inoculate children against the negative effects; continued exposure can result in lasting symptoms of stress.

National concern about the increasing prevalence of violent crimes has prompted nurses to actively participate in ensuring that children grow up in safe environments. Pediatric nurses are positioned to assess children and adolescents for signs of exposure to violence and well-known risk factors; nurses also can provide nonviolent problem-solving strategies, counseling, and referrals. These activities affect community practice and expand the nurse's role in the future health environment. Professional resources include the following:

National Domestic Violence Hotline

PO Box 161810
Austin, TX 78716
800-799-SAFE
<http://www.ndvh.org>

Child Trends

Child Trends Databank. (2015). *Teen homicide, suicide, and firearm deaths*. Retrieved from <http://www.childtrends.org/?indicators=teen-homicide-suicide-and-firearm-deaths>

TABLE 1.2 Infant Mortality Rate and Percentage of Total Deaths for 10 Leading Causes of Infant Death in 2014*

Rank	Cause of Death (Based on International Classification of Diseases, 10th Revision)	Percent	Rate
1	All races, all causes	100.00%	582.1
2	Congenital anomalies	20.4	119.0
3	Disorders relating to short gestation and unspecified low birth weight	18.0	104.6
4	Newborn affected by maternal complications of pregnancy	6.8	39.5
5	Sudden infant death syndrome	6.7	38.7
6	Accidents (unintentional injuries)	5.0	29.1
7	Newborn affected by complications of placenta, cord and membranes	4.2	24.2
8	Bacterial sepsis of newborn	2.3	13.6
9	Respiratory distress of newborn	2.0	11.5
10	Diseases of circulatory system	1.9	11.1
	Neonatal hemorrhage	1.9	11.1

*Rate per 100,000 live births.

Modified from Kochanek, K.D., Murphy, S.L., Xu, J., et al. (2016). Deaths: Final data for 2014. *National Vital Statistics Report*, 65(4), 1–122.

Pediatric nurses can assess children and adolescents for risk factors related to violence. Families that own firearms must be educated about their safe use and storage. The presence of a gun in a household increases the risk of suicide by about fivefold and the risk of homicide by about threefold. Technologic changes such as childproof safety devices and loading indicators could improve the safety of firearms (see [Community and Home Health Considerations](#) box).

Mental Health Problems

One out of five children experiences mental health problems, and 1 out of 10 has a serious emotional problem that affects daily functioning (Flores & Lesley, 2014). Many adolescents with anxiety disorders and impulse control disorders (such as conduct disorder or attention-deficit/hyperactivity disorder [ADHD]) develop these during adolescence. Nurses should be alert to the symptoms of mental illness and potential suicidal ideation and be aware of potential resources for high-quality integrated mental health services.

Infant Mortality

The infant mortality rate is the number of deaths during the first year of life per 1000 live births. It may be further divided into neonatal mortality (<28 days of life) and postneonatal mortality (28 days to 11 months). In

the United States the infant mortality rate was 5.82 per 1000 live births, the neonatal mortality rate was 3.94, and the postneonatal mortality rate was 1.88 in 2014 (Centers for Disease Control and Prevention, 2016).

Birth weight is considered the major determinant of neonatal death in technologically developed countries. The relatively high incidence of LBW (<2500 g [5.5 pounds]) in the United States is considered a key factor in its higher neonatal mortality rate compared with other countries. Access to and the use of high-quality prenatal care are promising preventive strategies to decrease early delivery and infant mortality.

As [Table 1.2](#) demonstrates, many of the leading causes of death during infancy continue to occur during the perinatal period. The first four causes—congenital anomalies, disorders relating to short gestation and unspecified LBW, newborn affected by maternal complications of pregnancy, and sudden infant death syndrome—accounted for about half (53%) of all deaths of infants younger than 1 year old (Centers for Disease Control and Prevention, 2016). Many birth defects are associated with LBW, and reducing the incidence of LBW will help prevent congenital anomalies. Infant mortality resulting from human immunodeficiency virus (HIV) infection decreased significantly during the 1990s.

When infant death rates are categorized according to race, a disturbing difference is seen. Infant mortality for Caucasians is considerably lower than for all other races in the United States, with African Americans

TABLE 1.3 Five Leading Causes of Death in Children in the United States: Selected Age Intervals, 2014*

Rank	1–4 YEARS OF AGE		5–9 YEARS OF AGE		10–14 YEARS OF AGE		15–19 YEARS OF AGE	
	Cause	Rate	Cause	Rate	Cause	Rate	Cause	Rate
	All causes	24.0	All causes	11.5	All causes	14.0	All causes	45.5
1	Injuries	7.6	Injuries	3.6	Injuries	3.6	Injuries	17.7
2	Congenital anomalies	2.5	Cancer	2.1	Suicide	2.1	Suicide	8.7
3	Homicide	2.3	Congenital anomalies	0.9	Cancer	2.0	Homicide	6.7
4	Cancer	2.0	Homicide	0.6	Congenital anomalies	0.8	Cancer	2.9
5	Heart disease	0.9	Heart disease	0.3	Homicide	0.8	Heart disease	1.4

*Rate per 100,000 population.

Modified from Murphy, S. L., Mathews, T. J., Martin, J. A., et al. (2017). Annual summary of vital statistics: 2013-2014. *Pediatrics* 139(6), e20163239.

having twice the rate of Caucasians. The LBW rate is also much higher for African American infants than for any other group. One encouraging note is that the gap in mortality rates between Caucasian and non-Caucasian races (other than African Americans) has narrowed in recent years. Infant mortality rates for Hispanics and Asian–Pacific Islanders have decreased dramatically during the past two decades.

Childhood Mortality

Death rates for children older than 1 year of age have always been lower than those for infants. Children ages 5 to 14 years have the lowest rate of death. However, a sharp rise occurs during later adolescence, primarily from injuries, homicide, and suicide (Table 1.3). In 2014 accidental injuries accounted for 34.4% of all deaths. The second leading cause of death was suicide, accounting for 12.1% of all deaths. The trend in racial differences that occurs in infant mortality is also apparent in childhood deaths for all ages and for both sexes. Caucasians have fewer deaths for all ages, and male deaths outnumber female deaths.

After 1 year of age, the cause of death changes dramatically, with unintentional injuries (accidents) being the leading cause from the youngest ages to the adolescent years. Violent deaths have been steadily increasing among young people ages 10 through 25 years, especially among African Americans and males. Homicide is the third leading cause of death in the 15- to 19-year age-group (see Table 1.3). Children 12 years old and older tend to be killed by non–family members (acquaintances and gangs, typically of the same race) and most frequently by firearms. Suicide, a form of self-violence, is the third leading cause of death among children and adolescents 10 to 19 years old.

Childhood Morbidity

Acute illness is defined as an illness with symptoms severe enough to limit activity or require medical attention. Respiratory illness accounts for approximately 50% of all acute conditions, 11% are caused by infections and parasitic disease, and 15% are caused by injuries. The chief illness of childhood is the common cold.

The types of diseases that children contract during childhood vary according to age. For example, upper respiratory tract infections and diarrhea decrease in frequency with age, whereas other disorders, such as acne and headaches, increase. Children who have had a particular type of problem are more likely to have that problem again. Morbidity is not distributed randomly in children. Recent concern has focused on groups of children who have increased morbidity: homeless children, children living in poverty, LBW children, children with chronic illnesses, foreign-born adopted children, and children in day care centers. A number of factors place these groups at risk for poor health. A major cause is barriers to health care, especially for the homeless, the poverty stricken, and those with chronic health problems. Other factors include

improved survival of children with chronic health problems, particularly infants of VLBW.

THE ART OF PEDIATRIC NURSING

PHILOSOPHY OF CARE

Nursing of infants, children, and adolescents is consistent with the [American Nurses Association \(2010\)](#) definition of nursing as the protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, and populations.

Family-Centered Care

The philosophy of family-centered care recognizes the family as the constant in a child's life. Family-centered care is an approach to the planning, delivery, and evaluation of health care that is grounded in mutually beneficial partnerships among health care providers, patients, and families ([Institute for Patient- and Family-Centered Care, 2014](#)). Nurses support families in their natural caregiving and decision-making roles by building on their unique strengths and acknowledging their expertise in caring for their child both within and outside the hospital setting. The nurse considers the needs of all family members in relation to the care of the child (Box 1.4). The philosophy acknowledges diversity among family structures and backgrounds; family goals, dreams, strategies, and actions; and family support, service, and information needs.

Two basic concepts in family-centered care are enabling and empowerment. Professionals enable families by creating opportunities and means for all family members to display their current abilities and competencies and to acquire new ones to meet the needs of the child and family. *Empowerment* describes the interaction of professionals with families in such a way that families maintain or acquire a sense of control over their family lives and acknowledge positive changes that result from helping behaviors that foster their own strengths, abilities, and actions.

Although caring for the family is strongly emphasized throughout this text, it is highlighted in features such as Cultural Considerations and Family-Centered Care boxes.

Atraumatic Care

Atraumatic care is the provision of therapeutic care in settings, by personnel, and through the use of interventions that eliminate or minimize the psychologic and physical distress experienced by children and their families in the health care system. Therapeutic care encompasses the prevention, diagnosis, treatment, or palliation of acute or chronic conditions. Setting refers to the place in which that care is given—the home,

BOX 1.4 Key Elements of Family-Centered Care

- Incorporating into policy and practice the recognition that the family is the constant in a child's life, whereas the service systems and support personnel within those systems fluctuate
- Facilitating family-professional collaboration at all levels of hospital, home, and community care:
 - Care of an individual child
 - Program development, implementation, and evaluation
 - Policy formation
- Exchanging complete and unbiased information between family members and professionals in a supportive manner at all times
- Incorporating into policy and practice the recognition and honoring of cultural diversity, strengths, and individuality within and across all families, including ethnic, racial, spiritual, social, economic, educational, and geographic diversity
- Recognizing and respecting different methods of coping and implementing comprehensive policies and programs that provide developmental, educational, emotional, environmental, and financial support to meet the diverse needs of families
- Encouraging and facilitating family-to-family support and networking
- Ensuring that home, hospital, and community service and support systems for children needing specialized health and developmental care and their families are flexible, accessible, and comprehensive in responding to diverse family-identified needs
- Appreciating families as families and children as children, recognizing that they possess a wide range of strengths, concerns, emotions, and aspirations beyond their need for specialized health and developmental services and support

From Shelton, T. L., & Stepanek, J. S. (2014). *Family-centered care for children needing specialized health and developmental services*. Bethesda, MD: Association for the Care of Children's Health.

the hospital, or any other health care setting. Personnel include anyone directly involved in providing therapeutic care. Interventions range from psychologic approaches, such as preparing children for procedures, to physical interventions, such as providing space for a parent to room in with a child. Psychologic distress may include anxiety, fear, anger, disappointment, sadness, shame, or guilt. Physical distress may range from sleeplessness and immobilization to disturbances from sensory stimuli, such as pain, temperature extremes, loud noises, bright lights, or darkness. Thus atraumatic care is concerned with the where, who, why, and how of any procedure performed on a child for the purpose of preventing or minimizing psychologic and physical stress (Wong, 1989).

The overriding goal in providing atraumatic care is as follows: First, do no harm. Three principles provide the framework for achieving this goal: (1) prevent or minimize the child's separation from the family, (2) promote a sense of control, and (3) prevent or minimize bodily injury and pain. Examples of providing atraumatic care include fostering the parent-child relationship during hospitalization, preparing the child before any unfamiliar treatment or procedure, controlling pain, allowing the child privacy, providing play activities for expression of fear and aggression, providing choices to children, and respecting cultural differences.

ROLE OF THE PEDIATRIC NURSE

The pediatric nurse is responsible for promoting the health and well-being of the child and family. Nursing functions vary according to regional job structures, individual education and experience, and personal career goals. Just as patients (children and their families) have unique backgrounds, each nurse brings an individual set of variables that affect

the nurse-patient relationship. No matter where pediatric nurses practice, their primary concern is the welfare of the child and family.

There are many different roles for nurses specializing in the care of children and their families. For example, a pediatric nurse can pursue an advanced degree and become a Pediatric Nurse Practitioner (PNP) or Clinical Nurse Specialist (CNS) in pediatrics. PNPs work in a variety of settings and are able to diagnose illnesses and prescribe medication. They provide a spectrum of care from children needing routine examinations and wellness care to caring for children with serious or chronic conditions. CNSs are master's-prepared nurses who function in a variety of settings in both the direct and indirect role. They model expert direct family-centered patient care.

Therapeutic Relationship

The establishment of a therapeutic relationship is the essential foundation for providing high-quality nursing care. Pediatric nurses need to have meaningful relationships with children and their families and yet remain separate enough to distinguish their own feelings and needs. In a therapeutic relationship, caring, well-defined boundaries separate the nurse from the child and family. These boundaries are positive and professional and promote the family's control over the child's health care. Both the nurse and the family are empowered and maintain open communication. In a nontherapeutic relationship, these boundaries are blurred, and many of the nurse's actions may serve personal needs, such as a need to feel wanted and involved, rather than the family's needs. Exploring whether relationships with patients are therapeutic or nontherapeutic helps nurses identify problem areas early in their interactions with children and families (see [Nursing Care Guidelines](#) box).

Family Advocacy and Caring

Although nurses are responsible to themselves, the profession, and the institution of employment, their primary responsibility is to the consumer of nursing services: the child and family. The nurse must work with family members, identify their goals and needs, and plan interventions that best address the defined problems. As an advocate, the nurse assists the child and family in making informed choices and acting in the child's best interest. Advocacy involves ensuring that families are aware of all available health services, adequately informed of treatments and procedures, involved in the child's care, and encouraged to change or support existing health care practices.

As nurses care for children and families, they must demonstrate caring, compassion, and empathy for others. Aspects of caring embody the concept of atraumatic care and the development of a therapeutic relationship with patients. Parents perceive caring as a sign of quality in nursing care, which is often focused on the nontechnical needs of the child and family. Parents describe "personable" care as actions by the nurse that include acknowledging the parent's presence, listening, making the parent feel comfortable in the hospital environment, involving the parent and child in the nursing care, showing interest in and concern for their welfare, showing affection and sensitivity to the parent and child, communicating with them, and individualizing the nursing care. Parents perceive personable nursing care as being integral to establishing a positive relationship.

Disease Prevention and Health Promotion

Every nurse involved in caring for children must understand the importance of disease prevention and health promotion. A nursing care plan must include a thorough assessment of all aspects of child growth and development, including nutrition, immunizations, safety, dental care, socialization, discipline, and education. If problems are identified, the nurse intervenes directly or refers the family to other health care providers or agencies.