Pediatric Primary Care 6TH EDITION

Catherine E. Burns
Ardys M. Dunn
Margaret A. Brady
Nancy Barber Starr
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Dawn Lee Garzon

ELSEVIER

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SIXTH EDITION

Editors

Catherine E. Burns, PhD, RN, CPNP-PC, FAAN

Professor Emeritus
Primary Health Care Nurse Practitioner Specialty School of Nursing
Oregon Health & Science University Portland, Oregon

Ardys M. Dunn, PhD, RN, PNP

Associate Professor Emeritus University of Portland School of Nursing Portland, Oregon;
Professor, Retired
School of Nursing
Samuel Merritt College
Oakland, California

Margaret A. Brady, PhD, RN, CPNP-PC

Professor
School of Nursing
California State University Long Beach Long Beach, California;
Co-Director, PNP Program
School of Nursing
Azusa Pacific University
Azusa, California

Nancy Barber Starr, MS, APRN-BC (PNP), CPNP-PC

Pediatric Nurse Practitioner Advanced Pediatric Associates Centennial, Colorado

Catherine G. Blosser, MPA:HA, RN, PNP

Pediatric Nurse Practitioner, Retired Oak Grove, Oregon

Dawn Lee Garzon, PhD, PNP-BC, CPNP-PC, PMHS, FAANP

Teaching Professor and PNP Emphasis Area Coordinator College of Nursing
University of Missouri–St. Louis St. Louis, Missouri
Associate Editor

Nan M. Gaylord, PhD, RN, CPNP-PC

Associate Professor
College of Nursing
University of Tennessee
Knoxville, Tennessee

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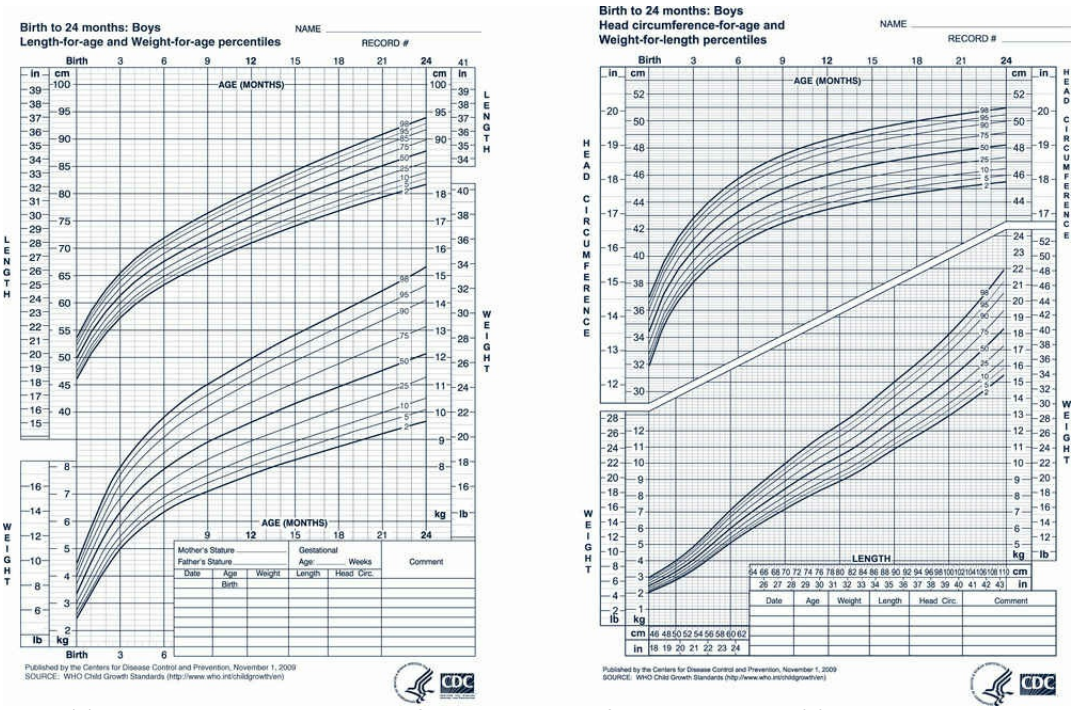
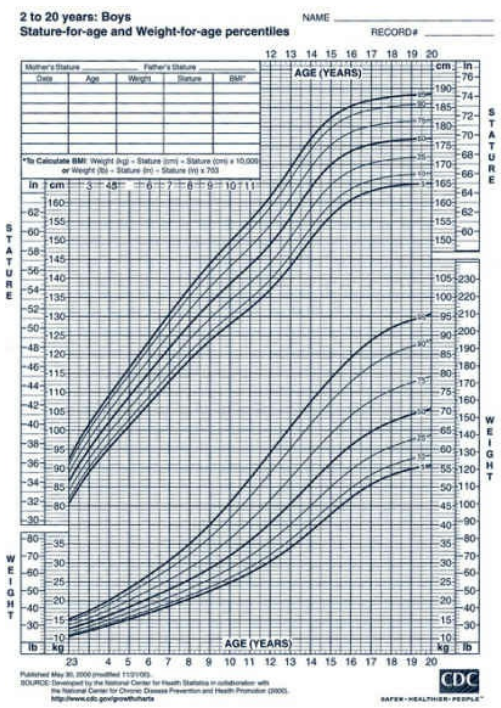
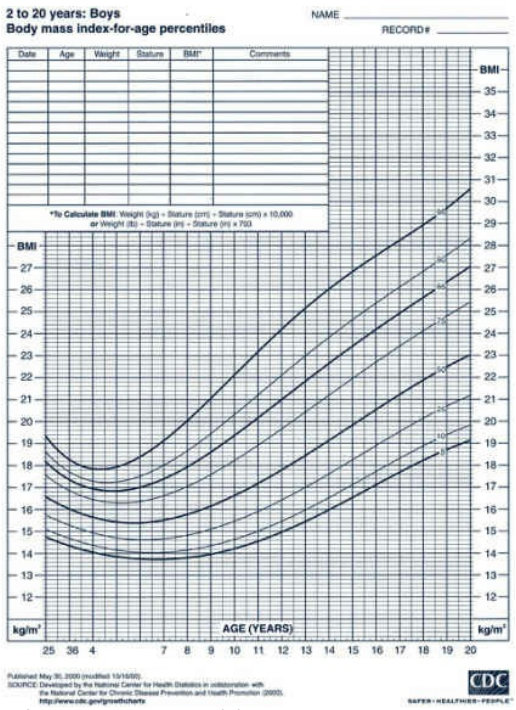


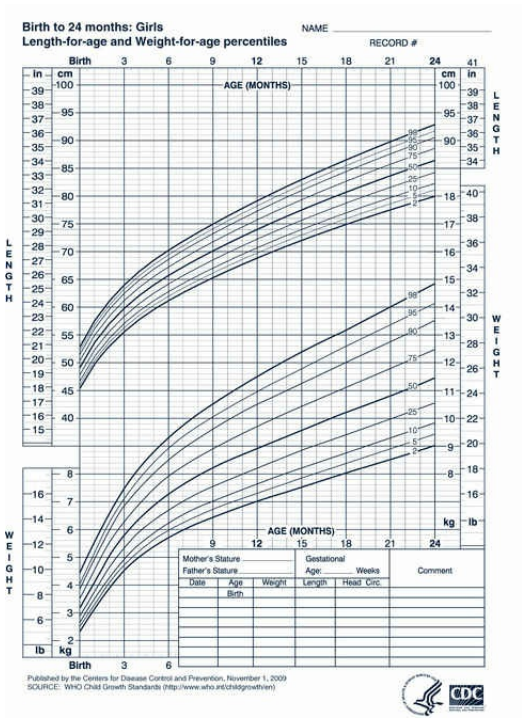
(1) Birth to 24 months: boys' length-for-age and weight-for-age percentiles. (2) Birth to 24 months: boys' head circumference-for-age and weight-for-length percentiles. (Published by the Centers for Disease Control and Prevention, November 1, 2009. From WHO Child Growth Standards. Available at www.cdc.gov/growthcharts.)

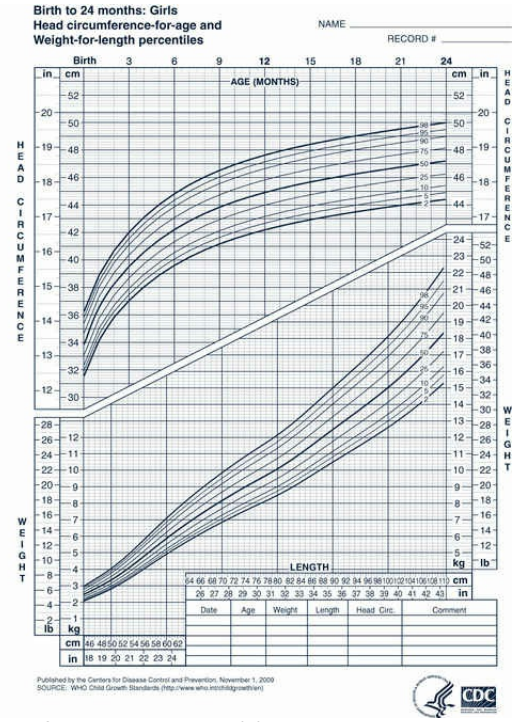




(3) 2 to 20 years old: boys' stature-for-age and weight-for-age percentiles. (4) 2 to 20 years old: boys' body mass index-for-age percentiles. (From the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion, 2000.)

FIGURE 1





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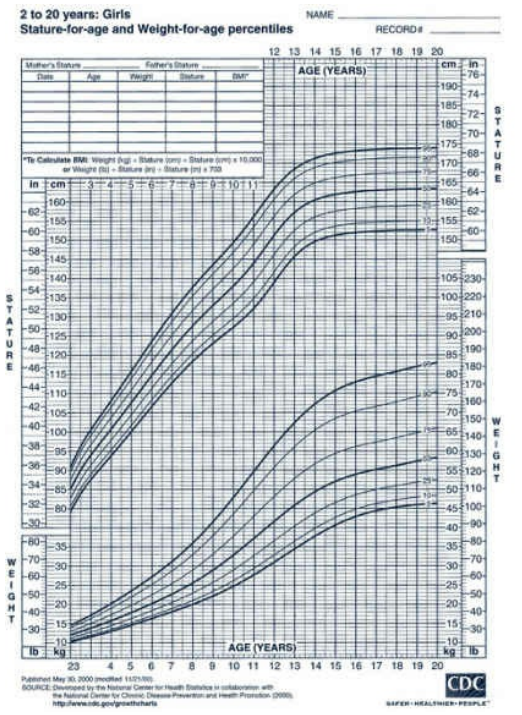

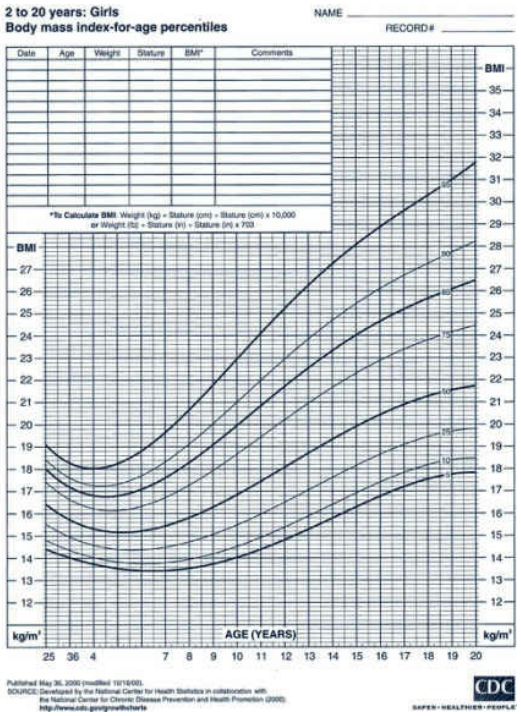

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FIGURE 2

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Contributors

Michele E. Acker MN, ARNP
Pediatric Nurse Practitioner
Seattle Children's Hospital
Seattle, Washington

Jan Bazner-Chandler RN, MSN, CNS, CPNP
Assistant Professor, Nurse Practitioner
Azusa Pacific University
Azusa, California

Anita D. Berry MSN, CNP, APN, PMHS
Director, Healthy Steps for Young Children Program
Advocate Children's Hospital
Downers Grove, Illinois

Jennifer Bevacqua RN, MS, CPNP-AC, CPNP-PC
Pediatric Nurse Practitioner
Oregon Health & Science University (OHSU)
Portland, Oregon

Crisann Bowman-Harvey CPNP, AC, PC, MSN
Instructor
University of Colorado
Aurora, Colorado

Donald L. Chi DDS, PhD
Associate Professor
University of Washington, School of Dentistry, Department of Oral Health
Seattle, Washington

Cynthia Marie Claytor MSN, PNP, FNP
Graduate Nursing Faculty
Azusa Pacific University
Azusa California

Sara D. DeGolier RN, MS, CPNP
Pediatric Nurse Practitioner
Department of Emergency Medicine
The Children's Hospital Colorado and University of Colorado Denver
Aurora, Colorado

Joy S. Diamond MS, CPNP
Pediatric Nurse Practitioner
Advanced Pediatric Associates
Children's Hospital Colorado
Aurora, Colorado

Mary Ann Draye MPH, APRN
Assistant Professor, Emerita
DNP FNP Program

School of Nursing
University of Washington
Seattle, Washington

Martha Driessnack PhD, PPCNP-BC
Associate Professor
Pediatric Nurse Practitioner Program
Oregon Health & Science University (OHSU) School of Nursing
Portland, Oregon

Karen G. Duderstadt PhD, RN, CPNP
Clinical Professor
Coordinator PNP Specialty
Academic Coordinator of International Student Programs and Special Studies
University of California San Francisco
School of Nursing
Department of Family Health Care Nursing
San Francisco, California

Susan Filkins MS, RD
Nutrition Consultant
Oregon Center for Children & Youth with Special Health Needs
Oregon Health & Sciences University
Portland, Oregon

Leah G. Fitch MSN, RN, CPNP
Pediatric Nurse Practitioner
Providence Pediatrics, Carolinas HealthCare System
Charlotte, North Carolina

Maxine Fookson RN, MN, PNP
Pediatric Nurse Practioner, School Based Health Program
Multnomah County Health Department
Portland, Oregon

Lauren Bell Gaylord MSN, CPNP-PC
Pediatric Nurse Practitioner
Etowah Pediatrics
Rainbow City, Alabama

Teral Gerlt MS, RN, WHCNP-E, PNP-R
Instructor
Oregon Health & Science University
School of Nursing
Portland, Oregon

Terea Giannetta DNP, RN, CPNP, FAANP
Associate Professor/Chief Nurse Practitioner
California State University, Fresno/Valley Children's Hospital
Fresno, California/Madera, California

Denise A. Hall BS, CMPE
Practice Administrator
Advanced Pediatrics Associates
Aurora, Colorado

Anna Marie Hefner PhD, RN, CPNP
Associate Professor

Azusa Pacific University
Upland, California

Pamela J. Hellings RN, PhD, CPNP-R
Professor Emeritis
Oregon Health & Science University
Portland, Oregon

Susan Hines RN, MSN, CPNP
Pediatric Nurse Practitioner
Sleep Medicine
Children's Hospital Colorado
Aurora, Colorado

Sandra Daack-Hirsch PhD, RN
Associate Professor
The University of Iowa, College of Nursing
Iowa City, Iowa

Belinda James-Petersen DNP, RN, CPNP
Pediatric Nurse Practitioner-Gastroenterology
Children's Specialty Group
Children's Hospital of the Kings Daughters
Norfolk, Virginia

Rita Marie John EdD, DNP, CPNP, PMHS
Associate Professor of Nursing at CUMC
PNP Program Director
Columbia University School of Nursing
New York, New York

Veronica Kane PhD, RN, MSN, CPNP
Clinical Assistant Professor, Coordinator—Pediatric Nursing Specialty
MGH Institute of Health Professions, School of Nursing
Boston, Massachusetts;
Pediatric Nurse Practioner, Pediatrics, Urgent Care
Harvard Vangard Medical Associates
Braintree, Massachusetts

Julie Martchenke RN, MSN, CPNP
Pediatric Cardiology Nurse Practitioner
Oregon Health & Science University
Portland, Oregon

MiChelle McGarry MSN, RN, CPNP, CUNP
Certified Pediatric and Urology Nurse Practitioner/Program Director/Owner
Pediatric Effective Elimination Program Clinic & Consulting, PC
Highlands Ranch, Colorado

Peter M. Milgrom DDS
Professor of Oral Health Sciences and Pediatric Dentistry,
Adjunct Professor of Health Services,
Director, Northwest Center to Reduce Oral Health Disparities
University of Washington
Seattle, Washington

Carole R. Myers PhD, RN
Associate Professor-College of Nursing

University of Tennessee
Knoxville, Tennessee

Jennifer Newcombe MSN, PCNS-BC, CPNP-PC/AC
Nurse Practitioner, Pediatric Cardiothoracic Surgery
Loma Linda Children's Hospital
Loma Linda, California

Noelle Nurre RN, MN, CPNP
Suspected Child Abuse and Neglect (SCAN) Nurse Practitioner
Oregon Health and Science University Doernbecher Children's Hospital and CARES Northwest
Portland, Oregon

Catherine O'Keefe DNP, CPNP-PC
Associate Professor/NP Curriculum Coordinator
Creighton University, College of Nursing
Omaha, Nebraska

Gabrielle M. Petersen MSN, CPNP
Medical Examiner
Children's Center
Oregon City, Oregon

Ann M. Petersen-Smith PhD, APRN, CPNP-PC, CPNP-AC
Assistant Professor
University of Colorado Anschutz Medical Campus
College of Nursing;
Associate Clinical Professor
University of Colorado Anschutz Medical Campus
School of Medicine
Section of Pediatric Emergency Medicine
Aurora, Colorado

Michele L. Polfuss PhD, RN, CPNP-AC/PC
Assistant Professor
University of Wisconsin–Milwaukee;
Nurse Researcher
Children's Hospital of Wisconsin
Milwaukee, Wisconsin

Ruth K. Rosenblum DNP, RN, PNP-BC
Assistant Professor, DNP Program Coordinator
San Jose State University
San Jose, California

Mary Rummell MN, RN, CNS, CPNP, FAHA
Clinical Nurse Specialist
The Knight Cardiovascular Institute, Cardiac Services
Oregon Health & Science University
Portland, Oregon

Susan K. Sanderson DNP, APRN, FNP-BC
Pediatric Infectious Diseases Nurse Practitioner; Instructor
Department of Pediatrics
Division of Infectious Diseases
University of Utah School Of Medicine
Salt Lake City, Utah

Arlene Smaldone PhD, CPNP, CDE
Associate Professor of Nursing at CUMC
Associate Professor of Dental Behavioral Sciences (in Dental Medicine) at CUMC
Assistant Dean, Scholarship and Research (School of Nursing)
Columbia University
New York, New York

Isabelle Soulé PhD, RN
Human Resources for Health Rwanda
University of Maryland
Baltimore, Maryland

Robert D. Steiner MD
Executive Director
Marshfield Clinic Research Foundation;
Professor of Pediatrics
University of Wisconsin
Marshfield, Wisconsin

Ohnmar K. Tut BDS, MPhil
Adjunct Senior Research Fellow
Griffith University;
Program Consultant Investigator
HRSA Oral Health Workforce Activities—FSM
Brisbane, Queensland, Australia;
Affiliate Instructor
University of Washington
Seattle, Washington

Becky J. Whittemore MPH, MN, FNP-BC
Nurse Practitioner
Institute on Development and Disability
Oregon Health & Sciences University
Portland, Oregon

Elizabeth E. Willer RN, MSN, CPNP
Pediatric Nurse Practitioner
Kaiser Permanente
Walnut Creek, California

Teri Moser Woo PhD, RN, ARNP, CNL, CPNP, FAANP
Associate Professor
Associate Dean for Graduate Nursing Programs
Pacific Lutheran University
Tacoma, Washington

Robert J. Yetman MD
Professor of Pediatrics
Director, Division of Community and General Pediatrics
University of Texas–Houston Medical School
UT Physicians Pediatrics—The Kid's Place
Houston, Texas

Yvonne K. Yousey RN, CPNP, PhD
Pediatric Nurse Practitioner
Kids First Health Care
Commerce City, Colorado

Reviewers

School of Nursing
Richmond, Virginia

Preface

We are delighted to introduce the sixth edition of *Pediatric Primary Care*. This book was first developed 20 years ago as a resource for advanced practice nurses serving the primary health care needs of infants, children, and adolescents. Pediatric nurse practitioners (PNPs) and family nurse practitioners (FNPs) are our primary audience. However, physicians, physician assistants, and nurses who care for children in a variety of settings also find the book to be a valuable resource. The field of pediatric primary care has also grown and changed since the first edition of this book. The interdisciplinary Institute of Medicine (IOM) and the Affordable Care Act have explicitly recognized the critical role of nurse practitioners and nurses in providing health care to the population in the United States (IOM Report, 2010).

The book emphasizes prevention and management of problems from the primary care provider's point of view. Each chapter is organized to introduce key concepts and foundations for care in a narrative format followed by a discussion of the identification and management of diagnoses using an outline format. Experienced clinicians can simply jump to the topic or diagnosis in question while the student can read the chapter for immersion into the topic. Additional resources for each chapter include websites to access organizations and printed materials that may be useful for clinicians, their patients, and families. Our contributing authors are experts in their fields.

Special Features of the Sixth Edition

Some features of the sixth edition about which we are particularly excited include the following:

- **Updated content** reflects the latest developments in our understanding of disease processes, disease management in children, and current trends in pediatric health care
- **NEW Pediatric Pharmacology chapter**
- **NEW Specialist Referral highlights** to alert busy practitioners to cues that signal the need for urgent referral
- **NEW graduate-level Quality and Safety Education for Nurses (QSEN) integration (**Cronenwett et al, 2009): The Safety, Informatics, Teamwork and Collaboration, and Evidence–based competencies
- **NEW full-color design and illustration format** to improve usability and teaching/learning value
- **NEW focus on diversity among cultures** in Chapter 3 provides greater emphasis on the need for providers to approach differences between themselves and their clients with humility and competence
- **Reorganized application of Gordon's Functional Health Patterns** to provide a more conceptually consistent flow of content (Gordon, 1987, 2010)
- **Expanded coverage of health literacy**—obtaining, reading, understanding, and using health care information to make appropriate health decisions
- **Expanded, updated coverage of growth and development** for greater consistency with contemporary theories of development
- **Unique chapter on integrative/complementary therapies** promotes the primary care provider's knowledge about many of the less conventional health care strategies that families may be inquiring about or using
- **Refocused Practice Management chapter (Chapter 44) is now available to readers on the Evolve website.** This chapter focuses on content more specific to pediatric practice management, including the various settings for pediatric primary care, such as school-based clinics and the health care home. This refocused chapter also addresses informatics and other essential topics influenced by the Affordable Care Act, as well as National Patient Safety Goals and the growing trend of interprofessional collaboration.
- **Discussion questions and NEW PowerPoint slides** are available on the Evolve site for educators. These are written by nurse practitioner educators to assist students to think about the implications of the material for their clinical practice.

Organization of the Book

We recognize that children are a special population and that providing health care to them must be approached using several unique perspectives: their developmental changes over time, their dependency on their parents, the differential epidemiology of child health, the different demographic patterns of children and their families, and the individuality of their genetic makeup. These themes are carried throughout the text.

The book is organized into four major sections—Pediatric Primary Care Foundations, Management of Development, Approaches to Health Management in Pediatric Primary Care, and Approaches to Disease Management. Each chapter follows the same format. Standards and guidelines for care are highlighted, the physiologic and assessment parameters are discussed, management strategies are identified, and management of common problems is presented in a problem-oriented format. The scope of practice of the primary care provider is always kept in mind with appropriate referral and consultation points identified.

We hope this text will continue to promote the very best evidence-based care possible for children and families in primary care settings by all the providers with whom they come in contact.

Editors

Catherine E. Burns PhD, RN, CPNP-PC, FAAN

Ardys M. Dunn PhD, RN, PNP

Margaret A. Brady PhD, RN, CPNP-PC

Nancy Barber Starr MS, APRN-BC (PNP), CPNP-PC

Catherine G. Blosser MPA:HA, RN, PNP

Dawn Lee Garzon PhD, PNP-BC, CPNP-PC, PMHS, FAANP

Associate Editor

Nan M. Gaylord PhD, RN, CPNP-PC

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Contributors to the Fifth Edition

These people were instrumental in helping us develop the fifth edition of the book. Although they are not authors in this edition, their ideas and work have contributed greatly to our work, and we are deeply indebted to them: Barbara Deloian, Mary Murphy, Maxine Fookson, Lynn Frost, Denise Abdoo, Roberta Bentson Royal, Veronica Kane, Martha K. Swartz, Anne Albers, Melissa Reider-Demer, Shirley Becton McKenzie, Peggy Vernon, Jan Bazner-Chandler, and Constance Brehm.

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UNIT 1

Pediatric Primary Care Foundations

OUTLINE

Health Status of Children

Global and National Perspectives

Karen G. Duderstadt

The health status of all children must be viewed with a global lens. Whether considering pandemic infectious diseases or the global emigration of populations between continents, the health of all children is interconnected worldwide. Inequalities in the health status of children globally and nationally are largely determined by common biosocial factors affecting health, which include where they are born, live, are educated, their work, and their age (World Health Organization [WHO], 2014a). The biosocial factors also include the systems in place to address health and illness in children and families.

The biosocial circumstances or social determinants of child health are shaped by economics, social policies, and politics in each region and country. In order to impact health outcomes, scaling up the efforts nationally and globally to build better health systems is required. Significant progress has been made in reducing childhood morbidity and mortality using this approach. The framework of the United Nations Millennium Development Goals 2014 (United Nations, 2015) and the Healthy People 2020 (U.S. Department of Health and Human Services [HHS] Office of Disease Prevention and Health Promotion, 2015a) goals set the mark for improving child health status. It is for societies to embrace and prioritize these goals on behalf of children.

This chapter presents an overview of the global health status of children, including the issue of global food insecurity, child health status in the United States and current health inequalities, the progress toward achieving the Millennium Development Goals and Healthy People 2020 targets, the effect of health care reform in the United States on access to care for children and adolescents, and the important role pediatric health care providers have in advocating for polices that foster health equity and access to quality health care services for all children and families. The final section addresses the health frameworks and tools available to pediatric health care providers to assess and monitor the health and well-being of children from infancy to young adulthood.

Global Health Status of Children

Thirty-five million children younger than 20 years old are part of the international migration of populations across continents (UNICEF, 2014). Emigrant children have increased health and educational needs that impact the health and well-being of communities; many of these communities have fragile health care systems. The United Nations Convention on the Rights of Children (UNCRC) charter was established 25 years ago and declares the minimum entitlements and freedoms for children globally, including the right to the best possible health (United Nations International Children's Fund, 2009). Emigrant children have the right to be protected under this charter (Box 1-1). Governments are advised to provide good quality health care, clean water, nutritious foods, and clean environments so that children can stay healthy. The charter is founded on the principle of respect for the dignity and worth of each individual, regardless of race, color, gender, language, religion, opinions, origins, wealth, birth status, or ability. The UNCRC continues to work on ensuring that all children have these basic human rights and freedoms. Special emphasis is placed on the responsibility and strength of families and the vital role of the international community to protect and secure the rights of children, including access to health care and primary health care services.

Box 1-1

UNICEF* Summary of the United Nations Convention on the Rights of Children

The UNICEF conventions include 42 articles that are summarized in the following list. They represent the worldwide standards for the rights of children. The conventions apply to *all* children younger than 18 years old. The best interests of children must be a top priority in all actions concerning children.

- Every child has the right to:
- Life and best possible health
- Time for relaxation, play, and opportunities for a variety of cultural and artistic activities
- A legally registered name and nationality
- Knowledge of and care by his or her parents, as far as possible, and prompt efforts to restore the child-parent relationship if they have been separated
- Protection from dangerous work
- Protection from use of dangerous drugs
- Protection from sale and social abuse, exploitation, physical and sexual abuse, neglect and special care to help them recover their health if they have experienced such toxic life events
- No incarceration with adults and opportunities to maintain contact with parents
- Care with respect for religion, culture, and language if not provided by the parents
- A full and decent life in conditions that promote dignity, independence, and an active role in the community, even if disabled
- Access to reliable information from mass media, television, radio, newspapers, as well as protection from information that might harm them
- Governments must do all that they can to fulfill the rights of children as listed above.

*UNICEF stands for the full name United Nations International Children's Emergency Fund. In 1953, its name was shortened to the United Nations Children's Fund. However, the original acronym was retained.

Health equity is the absence of unfair or remediable differences in health services and health outcomes among populations (WHO, 2014b). Although the rate of child mortality globally remains high, there have been significant reductions in the rate over the past few decades. Since 1990, child mortality in children younger than 5 years old has decreased by 47% due to targeted policies to reduce childhood pneumonia, diarrhea, and malaria and also to reduce the number of preterm births and perinatal complications. Despite these efforts, 6.3 million children younger than 5 years old die each year worldwide (Wang et al, 2014). To reach the World Health Organization (WHO) target of two-thirds reduction in mortality for children younger than 5 years old, more rapid progress is needed, particularly in sub-Saharan Africa, where the highest rate of infant mortality occurs. Currently, sub-Saharan Africa and Southern Asia account for 81% of the infant mortality globally (United Nations, 2015).

Diarrhea and pneumonia remain the leading infectious causes of childhood morbidity and mortality globally. The highest proportion of deaths due to these two conditions is in children younger than 2 years old; undernutrition, suboptimum breastfeeding, and zinc deficiency contribute significantly to the mortality rate from these diseases. (Zinc reduces the duration and severity of diarrhea and likelihood of reinfections for 2 to 3 months. As a micronutrient, it is essential for protein supplementation, cell growth, immune function, and intestinal transport of water and electrolytes [Khan and Sellen, 2015].) Rotavirus is the most common cause of diarrhea globally and *Streptococcus pneumoniae* is the leading cause of pneumonia (Walker et al, 2013). Both of these are vaccine-preventable infectious diseases.

Successful vaccination programs have markedly reduced the mortality caused by some infectious diseases, particularly measles and tetanus. Cambodia serves as a noteworthy example. To reduce childhood mortality in children younger than 5 years old, Cambodia targeted measles vaccination due to the high mortality associated with the disease. Within a decade, health workers were able to increase the rate of measles immunization by 71% in children younger than 1 year old (United Nations, 2015). To achieve complete eradication of measles, WHO helped the Cambodian national immunization program to identify and reach communities at high risk for low rates of immunizations. A national immunization program also began providing a booster dose of a measles-containing vaccine after 18 months old. The result was measles eradication in Cambodia since 2012. Such sustained immunization programs by partnerships between communities, governments, and international aid organizations can markedly improve global child health status. However, emerging viral and bacterial infectious diseases present complex challenges to public health infrastructure and threaten the global progress made on reducing childhood mortality (see Chapter 24).

The majority of the extremely poor live in five countries—India, China, Nigeria, Bangladesh, and the Democratic Republic of Congo. The risk of maternal death from pregnancy-related complications and childbirth in developing regions is 230 deaths per 100,000 births; this rate is 14 times higher than in developed countries (United Nations, 2015).

Global Food Insecurity and Effect on Children's Health

Hunger and undernutrition are often referred to as *food insecurity*, which is the condition that exists when populations do not have physical and economic access to sufficient, safe, nutritious, and culturally acceptable food to meet nutritional needs. Food insecurity occurs in impoverished populations in developing countries and in industrialized nations, particularly among migrant populations. Children affected by migration and family separation are at risk for food insecurity and are vulnerable to further health consequences, including exposure to exploitation and child trafficking. Growing evidence on climate change indicates the dramatic effect on food crops that lead to food distribution issues, which is one of the primary contributors to food insecurity (Fig. 1-1).

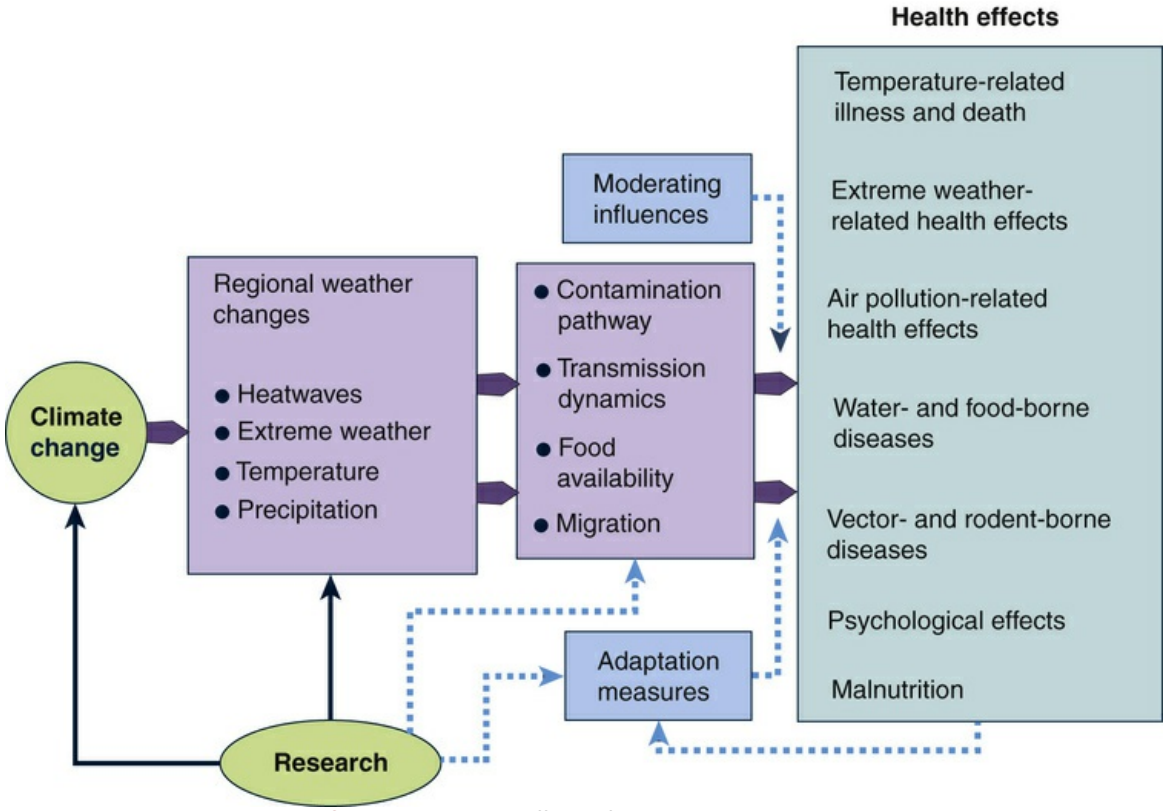

FIGURE 1-1 Health effects of climate change.

Globally, undernutrition is an important determinant of maternal and child health and accounts for 45% of all child deaths in children younger than 5 years old (United Nations, 2015). Suboptimal breastfeeding remains a problem in developed and developing nations. Children who are exclusively breastfed for the first 6 months of life are 14 times more likely to survive than non-breastfed infants (United Nations, 2015). Vitamin A and zinc deficiencies also contribute to the disease burden in mortality for children younger than 5 years old. In developing countries, 55 million women are stunted from undernutrition and lack of micronutrients, including iron, folic acid, vitamin A, and zinc (Save the Children, 2015). Preventable nutritional deficiencies are a compelling case for further implementation of the Millennium Development Goals and increased support for micronutrient supplementation for children in developing regions.

United Nations Millennium Development Goals: Project Goals

The Millennium Project, a global health project of research and study to improve prospects for a better future for humanity, publishes a framework (Millennium Development Goals) annually to address the challenges, both local and global, facing the world populations. Health and access to health care in the context of social determinants are covered in the document. Figures 1-2 and 1-3 and Box 1-2 illustrate the collaborative action required among governments, international organizations, corporations, universities, and individuals and societies to address the issue of health equity from a global perspective (The Millennium Project, 2014).

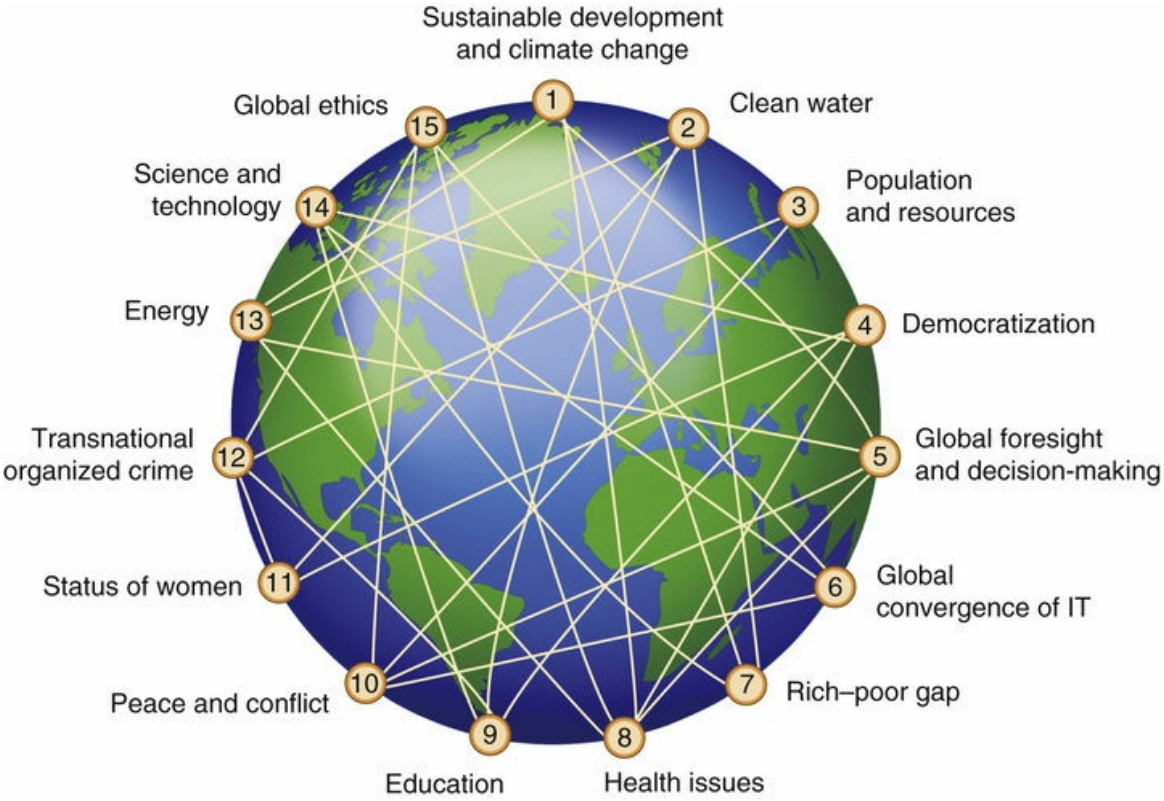

FIGURE 1-2 Fifteen global challenges facing humanity. *IT*, Information technology.

Box 1-2

Preterm Birth Rate by Race and Ethnicity

Births before 37 weeks' gestation can result in lifelong disabilities, and children born preterm are at higher risk of death during their first few days of life.

Race and Ethnicity	Preterm Birth Rate
African American, non-Hispanic mothers	16.5%
American Indian or Alaska Native mothers	13.3%
Hispanic mothers	11.6%
White, non-Hispanic mothers	10.3%
Asian or Pacific Islander mothers	10.2%

The African American preterm birth rate is more than 1.5 times higher than that experienced by Asians or Pacific Islanders.

HHS Office of Disease Prevention and Health Promotion: LHI infographic gallery: maternal, infant, and child health (April 2014): preterm births and infant deaths, HealthyPeople.gov (website):

www.healthypeople.gov/2020/leading-health-indicators/LHI-Infographic-Gallery#Apr-2014. Accessed August 13, 2015.

One of the main goals of the Millennium Development Goals framework is to reduce infant mortality by at least two-thirds by 2016 in 27 countries. Eight goals consist of 21 quantifiable targets measured by 60 health indicators (see Fig. 1-3). They provide a framework for the international community to ensure socioeconomic development reaches all children.

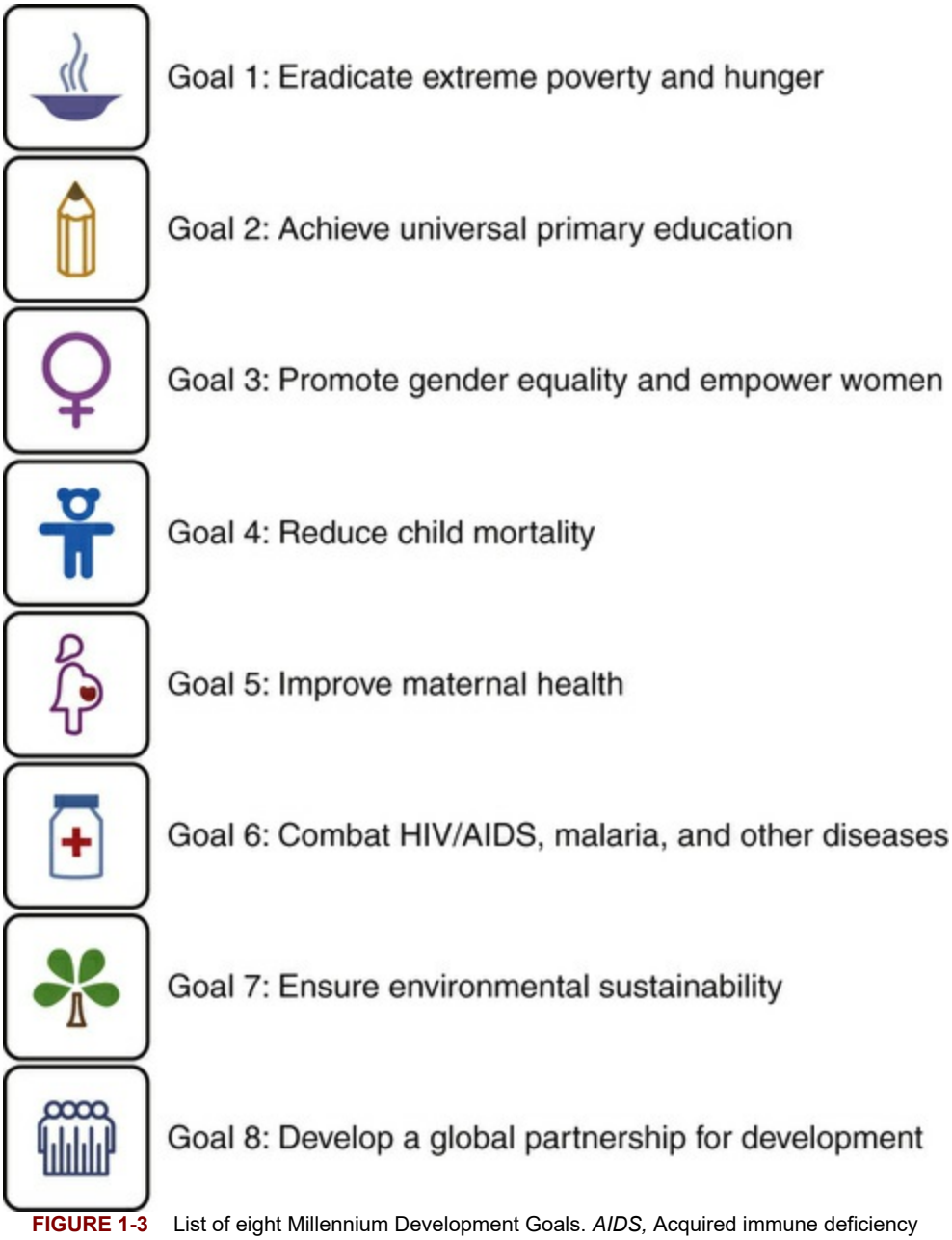

FIGURE 1-3 List of eight Millennium Development Goals. *AIDS,* Acquired immune deficiency syndrome; *HIV,* human immunodeficiency virus.

Progress on the Millennium Development Goals

Significant progress has been made in many areas, including reductions in child mortality and preterm birth. In 30 developing countries, progress toward achieving reductions in child mortality has been faster than predicted due to income, education, and secular shifts in living and work environments (Wang et al, 2014). However, increased assistance in improving economic status and levels of maternal education is required to sustain the effort.

Since 1990, progress has been made by reducing world poverty by half, access to clean drinking water has improved for 2.3 billion people, chronic undernutrition in children causing stunting has decreased by 40%, and 90% of children in developing regions are attending primary school (United Nations, 2015). The achievements are the result of the collaborations between governments, international communities, civil societies, and private corporations. To make further sustained progress, expansion and acceleration of the interventions by the WHO are required to target the leading causes of death in the target countries.

The economic growth potential remains strong in many of the developing regions, and partnerships between developing countries and nongovernmental organizations (NGOs) continue to provide significant sources of developmental assistance. Official development assistance is at the highest level ever recorded by the United Nations agency partners (United Nations, 2015). Developing countries require further debt relief, reduced trade barriers, improved access to technologies for renewable energy production, and enhanced protection from and response to environmental disasters to sustain current advances. Further, global political efforts are required to support achievement of the Millennium Development Goals beyond 2015 and a renewed commitment to the future health and well-being of children everywhere.

Health Status of Children in the United States

Globalism will increasingly affect child health in the United States. The demographic mix of children and families cared for by pediatric health care providers in the United States has become increasingly complex, with a greater number of children living in poverty who are at increased risk for chronic physical and mental health conditions and exposure to intimate partner violence (IPV), gun violence, and abuse (American Academy of Pediatrics [AAP], 2014). Child poverty rates in the United States remain higher than in other economically developed nations. One in five children (out of 16.3 million) in the United States live in families with incomes below the federal poverty level (FPL) (Annie E. Casey Foundation, 2015). The rate of household poverty is higher (one in three) for Latino and African American children.

Most concerning among the child health indicators is the percentage of overweight and obese children. Seventeen percent of youth are "obese" as defined as a body mass index (BMI) greater than the 95th percentile for age on the BMI age and gender–specific growth charts. For infants and children younger than 2 years old, the rate of obesity is 8.1% as determined by weight for recumbent length charts. Although rates of obesity among children and youth remain high, surveillance studies show that the rate of increase in overweight and obesity has stabilized. The obesity rate among 2-to 5-year-olds showed a significant decrease of 5.5% between 2004 and 2013 (Ogden et al, 2014).

Obese and overweight children and youth are more at risk for developing adult health problems, including heart disease, type 2 diabetes, stroke, and osteoarthritis. Poor eating patterns are a major factor in the high rate of obesity among children and adolescents. Children's diets have been out of balance over the past two decades with too much added sugar and saturated fats, and limited fruits, vegetables, and whole grains. Of all the child health indicators, overweight and obesity will significantly affect the cost of providing health care services in the United States in the coming years. Chapter 10 discusses childhood obesity, the comorbidities, and the related cost of health care.

Food Insecurity in Children in the United States

Despite many government food assistance programs, nearly one in five children in the United States lives in a food-insecure household. Children who are food insecure are more likely to have poorer general health, higher rates of hospitalization, increased incidence of overweight, asthma, anemia, and experience behavioral problems. Factors other than income do impact whether a household is food insecure. Maternal education, single-parent households, intimate-partner violence, and parental substance abuse also contribute to food insecurity in households. Children living in households where the mother is moderately-to-severely depressed have a 50% to 80% increased risk of food insecurity (Gundersen and Ziliak, 2015).

Three-quarters of children spend some portion of the preschool years being cared for outside of the home. Depending on child care arrangements, the care can contribute to or ameliorate the effects of food insecurity for children. Young children who attend a preschool or child care center have lower food insecurity, whereas children cared for at home by an unrelated adult are at higher risk for food insecurity (Gundersen and Ziliak, 2015). The Supplemental Nutritional Assistance Program (SNAP), the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and the School Breakfast Program (SBP) are federally funded programs with the purpose to combat childhood hunger. In 2013, 11.2 million children participated in the SBP for a free or reduced price, and WIC served 8.7 million women and children at a cost of $6.45 billion (Gundersen and Ziliak, 2015). The average monthly WIC benefit for families is $43.

Addressing Children's Health in the United States

Healthy People 2020

The Healthy People 2020 goals for children include foci specific to early and middle childhood and adolescents, social determinants of health in childhood, health-related quality of life for children, and on specific disparities in child health to improve health care services and health outcomes (HHS Office of Disease Prevention and Health Promotion, 2015a). With increased proportions of children with developmental delays, Healthy People 2020 focuses on objectives to increase the percentage of children younger than 2 years old who receive early intervention services for developmental disabilities and to increase the proportion of children entering kindergarten with school readiness in all five domains of healthy development—physical well-being and motor development, social emotional development, approaches to learning, language development, and cognition, and general development. The objectives also address the increase in maladaptive behaviors in the pediatric population and set benchmarks to increase the percentage of young children who are screened for autism and other developmental delays at 18 and 24 months old (Annie E. Casey Foundation, 2015; National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention [CDC], 2015).

Healthy People 2020 objectives also address the need for increasing the proportion of practicing primary care providers, including nurse practitioners, to improve access to quality health care services. The demand for primary care services will increase as more children, adolescents, and young adults qualify for health insurance plans through the Affordable Care Act of 2010 (ACA) and seek preventive health care. An integrated workforce can provide appropriate evidence-based clinical preventive services to reduce overall health care costs, as well as improve access and facilitate communication and continuity of care for children and families. Approaches to health care must be interprofessional and must consider the biosocial factors in the delivery of health care to achieve child health outcomes far beyond the biomedical dynamics of disease (Holmes et al, 2014).

Social Determinants of Health and Health Equity

The social determinants of health result in unequal and unavoidable differences in health status within communities and between communities (HHS Office of Disease Prevention and Health Promotion, 2015b). Individuals are affected by economic, social, and environmental factors in their communities. Social determinants of health recognize the impact of home, school, workplace, neighborhoods, and access to health care as significant contributors to child health outcomes. Many of the Healthy People 2020 leading health indicators address social determinants of health, but the specific objective targeted for this objective is the number of students who graduate in 4 years of high school with a regular diploma. The target is 82.4% for the on-time graduation rate. Progress has been made toward the goal with a rate of 78.2% over the past 4 years (HHS Office of Disease Prevention and Health Promotion, 2015b). However, the target falls significantly below what is required to decrease the economic inequalities between communities and neighborhoods.

The United States has the highest rate of death in the first day of life among the 27 industrialized nations (Save the Children, 2015). Healthy People 2020 sets targets for reductions of infant deaths and the rate of preterm births (infants born at or before 37 weeks' gestation). Significant inequalities exist in communities in the rate of preterm births—particularly in the Southeastern states (see Box 1-2). The overall rate of preterm births in the United States has only decreased 0.6% since 2002 despite interventions to decrease the incidence. One out of nine preterm births results in complications, including greater risk of breathing problems, developmental delays, and vision and hearing problems. All of these complications increase the cost of health care. The Centers for Disease Control and Prevention (CDC) is collaborating with state health departments, university researchers, and private foundations to understand and reduce preterm births and implement evidence-based interventions to improve prenatal care in those communities and hospitals with high rates of preterm births.

Adverse Childhood Events and Impact on Child Health Outcomes

There is growing evidence on the disruptive impact of toxic stress on biologic mechanisms that impact childhood development. Exposure to chronic stress and high levels of elevated cortisol are believed to play a role in the encoding of memory and other bodily functions. The structural development of the brain in childhood is guided by environmental cues; optimum development of the neuroendocrine system is dependent upon the absence of early toxic stress and toxins (e.g., lead, mercury, alcohol, and drugs) and adequate nutrition (AAP, 2015).

Early adverse stress is linked to later impairments in learning, behavior, and physical and mental well-being (AAP, 2015; Shonkoff et al, 2012). Toxic stress results from strong or frequent and prolonged activation of the body's stress response systems in the absence of the protection of a supportive, adult relationship (Shonkoff et al, 2012). The adversity can occur as single, acute, or chronic events in the child's environment, such as emotional or physical abuse or neglect, IPV, war, maternal depression, parental separation or divorce, and parental incarceration (Box 1-3). Although discussed here as a problem in the United States, adverse childhood events is a significant worldwide problem.

Box 1-3

Adverse Life Experiences of Children

- Emotional abuse or neglect
- Physical abuse or neglect
- Sexual abuse
- Mother treated violently
- Household substance abuse
- Household mental illness
- Parental separation of divorce
- Incarcerated household member

Toxic stress in childhood has implications that carry over into adulthood. Evidence suggests that the results of the prolonged and altered biologic mechanisms lead to chronic health conditions in adulthood, including obesity, heart disease, alcoholism, and substance abuse (Shonkoff et al, 2012). A child who has experienced adverse childhood events is also more likely to engage in high-risk behavior, such as the initiation of early sexual activity and adolescent pregnancy. Limiting the impact of adverse childhood events through effective interventions that strengthen the capacity of nations, communities, and families to protect young children from the disruptive effects of toxic stress improves child health outcomes and decreases financial costs to individuals and societies (Shonkoff et al, 2012).

Child Health and Quality Improvement Measures

As part of the effort in the United States to reform health care, quality and performance measures have gained significant importance in the national dialogue. Many measures relevant to the overall health of children are tracked annually in the National Healthcare Disparities Report (NHDR). The report focuses on four components of pediatric health care: (1) prevention, (2) treatment, (3) management, and (4) access to care.

Lack of health care insurance is the single strongest predictor of quality of care for children in the United States—greater than the effects of race, ethnicity, family income, or education (HHS Office of Disease Prevention and Health Promotion, 2015a). Quality of care is measured by the timeliness and effectiveness of care, as well as the safety of the care delivered. Measures of access to care include health insurance coverage, utilization of health care services, and barriers to care. Both access and quality are required to eliminate the impact of disparities in health.

Understanding the changing demographics of the pediatric population is critical to shaping the health

care workforce and health care services for future generations of children. Further, the debate on whether to expand health care to immigrant children needs to become part of the dialogue in order to further decrease health disparities.