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(英文原版)

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Sixth Edition

配英汉索引

儿科治疗学手册

Edited by
John W. Graef

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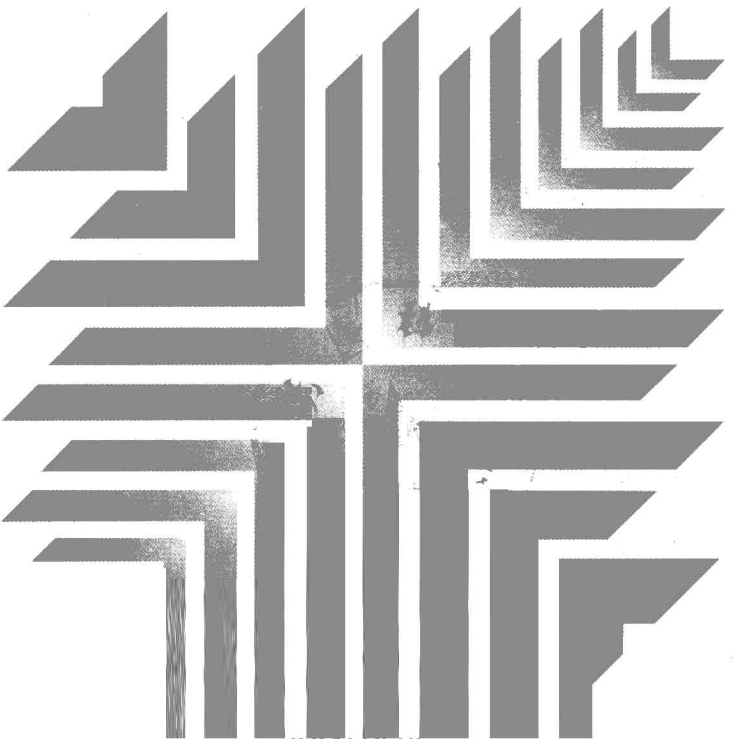

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Foreword

Pressures for efficiency in care and education make the *Manual of Pediatric Therapeutics* of increasing importance and value. Well-packaged information that is current, accessible, and briefly stated is tremendously useful to the student, resident, nurse, and practitioner.

Dr. John Graef and his talented editorial board, including Drs. Nancy Andrews, Shari Nethersole, Cedric Priebe, Richard Saladino, Elizabeth Woods, and Gregory Young, have accomplished this task in a marvelously effective manner. Dr. Graef's broad knowledge of pediatrics and his vast experience as an editor have resulted in selection of information that is both pertinent and useful. The sixth edition has significant changes over the previous edition. All chapters are updated. New chapters on the Delivery of Pediatric Care, Dermatology, Musculoskeletal Disorders, and Developmental Disabilities have been added.

The Department of Medicine and Children's Hospital take great pride in this important manual, first published in 1970 under the leadership of Dr. Graef's mentor, Dr. Thomas Cone. The manual's multiple contributors, many trainees of our four chiefs, Drs. Charles Janeway, Mary Ellen Avery, David Nathan, and now Philip Pizzo, have all added immeasurably to its value. The sixth version is a fine successor to the previous edition. We are all deeply grateful to Dr. John Graef for his commitment to this task and to his editorial assistant, Ms. Cathy Lantigua, for her great skill and dedication to this edition.

Frederick H. Lovejoy, Jr., M.D.

Preface

One of the special satisfactions that comes with editing six editions of the *Manual of Pediatric Therapeutics* is working with the extraordinarily talented and able faculty who have participated in the preparation of each edition. Over the years, many have gone on to outstanding careers in academic medicine, some in areas far afield of the one for which they contributed material to the book. My good friend and colleague, Dr. Robertson Parkman, now Chief of Research Immunology and Professor of Pediatrics at the University of Southern California, comes to mind. In 1970, he contributed the chapter on newborn medicine in the first edition of the *Manual* but has since gone on to the field of bone marrow transplantation of which he is widely noted as one of the world's experts. In the same edition, Dr. Ralph Lopez wrote the chapter on fluid and electrolytes but went on to a successful career in adolescent medicine. Harvey Cohen, Lewis First, Margaret Hostetter, Fred Ledley, Jeffrey Lipton, Fred Lovejoy, Georges Peter, and Philip Pizzo among many others all contributed chapters or editorial work to the *Manual* early in their careers. To say that I have taken pride in what small role their participation in this book may have played in their thoughts as future educators and leaders in pediatric medicine is an understatement.

The current group of authors and editors is no exception. Drs. Andrews, Nethersole, Priebe, Saladino, Woods, and Young include three former Chief Residents, a Howard Hughes Investigator and two superb general pediatricians. Each has brought a unique perspective. Their selection of authors has once again produced an edition which, we hope, contains the most current thinking in each field.

The format of the manual has been changed slightly. It has been divided into three sections instead of two. The first section is meant to address principles of managing well children and includes the new chapter on Delivery of Pediatric Care which, for the first time, discusses such topics as telephone management and home care as well as the nuts and bolts of such difficult subjects as managing the dying patient. Also, our "well child" chapter now contains three subsections each devoted to one of the three main age groups of our specialty namely, infancy, childhood and adolescence. The next major section contains chapters devoted to acute care of ill children and includes such broad categories as Emergency and ICU Care, Antibiotics and Infectious Disorders, Poisonings, Managing the Sick Newborn, and Fluid and Electrolytes. The third and largest section is devoted to more traditional "organ system" topics. All chapters have been updated and revised. In addition to the new chapter on the Delivery of Pediatric Care, new chapters on Musculoskeletal Disorders and Developmental Disabilities[1] have been added and one former chapter on Dermatology has been restored.

The most difficult part of my job is not deciding what to include but what to

[1]We note with sadness the untimely death of our friend and colleague, Marilynn Haynie, who co-authored the chapter on Developmental Disabilities. Her passion for the care of disabled patients is a living inspiration to us all.

exclude. To provide space for new chapters requires reduction of others. All chapters either remained the same size or were cut slightly albeit with reluctance and the possible loss of a few friends. All topics have been chosen and are discussed with the general pediatrician or pediatric nurse practitioner in mind. As in our previous editions, few topics are included for which there is no therapeutic recommendation. It remains for you, our readers, to tell us whether we succeeded in striking the balance in content we strive for.

Finally, this edition would have been impossible without the invaluable assistance of our Editorial Assistant, Cathy Lantigua. Cathy assembled all the manuscripts, kept our authors and editors on track (even me) and maintained constant communication with our publisher(s) as the book progressed. The final product is a synthesis of the efforts of our expert authors, our superb Editorial Board and Cathy's extraordinary diligence. We hope you will find it helpful in the management of your patients.

John W. Graef, M.D.

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General Principles in Pediatric Practice

1 Caring for Children

John W. Graef

Pediatrics is organized around the relationship of a child's health and risk of illness to his or her growth and development. Stages of biologic and social development and the particular risks of disease associated with those stages are presented in Table 1-1.

I. **Advocacy.** Because of the age and vulnerability of pediatric patients, pediatricians have a special role as advocates. Historically, it has been shown that the needs of children may suffer when they require the expenditure of scarce public resources. If denial of full opportunity is true for healthy children, it is doubly true for disabled children with special needs (see Chap. 21). Because of the respect earned by pediatric physicians, it behooves them to speak out on public issues that affect children.

II. **Counseling.** It is the pleasant lot of the pediatrician to reassure patients and families that for the majority of illnesses, growing children need only be supported with a medical safety net should the illness be atypical or severe.

To accomplish effective reassurance, the pediatrician must make time available to hear patients' questions completely and supply information in an understanding and understandable manner. It is useful to ask that information be repeated back and confirmed to avoid confusion about what was said. Counseling is best heard when patients do not fear that the pediatrician has another agenda such as avoiding an inconvenient patient visit or encouraging an unnecessary visit. It is helpful to begin a conversation by offering to examine the child if the patient wishes but encouraging parents that they may be empowered by counseling to manage the child effectively. The ready availability of pediatric care, particularly at night or on weekends, may go a long way toward reassuring parents that help is near should they need it.

III. **Coping with pediatric illness**

A. **Patients.** When they first enter pediatric practice, few pediatricians fully appreciate the emotional impact of pediatric illness either on children, parents, or physicians. Some of the interaction between pediatricians and sick children involves maneuvers and procedures that can be frightening or painful for children and may add to their distress as well as that of the parents. Yet the resiliency of children and their ultimate loyalty and affection for pediatric caretakers tells us that an honest, caring, and gentle approach to patients will overcome much of the initial adversity felt when physical discomfort occurs as a necessary part of evaluation and treatment.

B. **Parents.** Occasionally, well-meaning parents may attempt to discourage necessary but invasive interventions such as lumbar punctures or even tuberculin skin tests to "protect" their children from unwanted physical or psychological trauma. In responding, pediatricians should not permit the issue to be one of control and the parents' refusal to "cooperate" should not be seen as an affront. Their fears must be addressed, and a patient, sympathetic, firm, but flexible response likely will be effective in winning them over. Rarely is any procedure so emergent that parents cannot be permitted time to grasp its importance and to steel themselves to their child's suffering. It may also be that proposed procedures are not absolutely essential to the child's treatment but part of a protocol. Clinical judgment permits flexibility in determining the priority and need for interventions. Pediatricians must also recognize and place in perspective their own distaste for performing necessary procedures. Not all physicians are comfortable or adequately skilled in inva-

Table 1-1. Health risks by age group

Age	Name of stage	Health risks
Conception	Prenatal	Maternal infection, parental age, environmental exposures, maternal substance abuse, malnutrition, endocrine or cardiovascular disorder, trauma during pregnancy
0–2 days	Perinatal	Congenital anomaly or infection, respiratory immaturity or obstruction, gastrointestinal or genitourinary obstruction, pH incompatibility, metabolic defect
2–30 days	Neonatal	Respiratory or cardiovascular defect; inability to feed; gastrointestinal obstruction; infection of the lung, central nervous system, or genitourinary system; metabolic defect; hepatitis or hepatic obstruction
1–6 months	Infancy	Malnutrition and/or food intolerance, infection, cardiovascular or metabolic defect
6–24 months	Toddler	CNS disability, seizure disorders, respiratory infections (otitis), malabsorption disorders, ingestions, lead poisoning, accidents, child abuse, early reactive airway disease, dehydration with diarrheal illness, neuroblastoma
2–5 years	Preschool	Respiratory infections, asthma, inflammatory bowel disease, nephrotic syndrome, vasculitis, accidents, sexual abuse, leukemias
5–10 years	School	Group A streptococcal illness, ADDH, accidents, JRA, IDDM, sexual abuse, allergies, nephritis, peripharyngeal abscesses, asthma
10–13 years	Puberty	Delayed or premature sexual development, acting-out behaviors, accidents, changes in IDDM, asthma, exacerbation of latent tuberculosis, sexual abuse, early substance abuse, sinusitis
13–18 years	Adolescence	Accidents, Crohn's disease, substance abuse, asthma, migraine, pancreatitis, lymphomas, violence, date rape, sexually transmitted disease, pregnancy, infectious mononucleosis

ADDH = attention deficit disorder with hyperactivity; JRA = juvenile rheumatoid arthritis; IDDM = idiopathic diabetes mellitus.

sive procedures; each must be willing to enlist colleagues or physician extenders as appropriate, understanding that patients and parents will ultimately appreciate this step.

C. **Follow-up.** Once a treatment plan has been accomplished, follow-up and continuity of care should be assured. Parents appreciate follow-up visits and telephone checks, which demonstrate continuing interest in the welfare of their child. Children with acute exacerbations of chronic disease need the ongoing supervision of monthly or quarterly visits even in the absence of acute symptoms. Support provided by documentation for schools and other caretakers is important to the overall care of the child.

IV. **The pediatric consultation.** Pediatricians may be asked to consult with colleagues from other medical specialties, other pediatric providers, or other pediatricians. The following guidelines may be helpful.

A. Respond as soon as possible. A colleague seeking consultation is usually in need of prompt assistance. If necessary, and with notification, a suitable substitute should be offered.

B. Determine what questions need your help and respond specifically to them.

C. Your colleague has asked for help, not replacement. Explain the limits of your role to patients and parents at the onset and maintain those limits through follow-up.

D. Successful consultation is best accomplished by meticulous attention to detail. You may not have more knowledge than a requesting colleague, but may have more time.

E. Do not comment on a colleague's management in the presence of the patient or parents. Such comments are frequently misunderstood or blown out of proportion.

F. Provide the requesting colleague with information. Do not attempt to dictate patient care.

G. Discuss your findings with the requesting colleague and ask for her or his permission *before* discussing them with patient and family. Medical practice is, at best, inexact. Part of good medical judgment is knowing when to ask for help. Consultation provided in a prompt and helpful manner assures a patient of an extra measure of knowledge and concern, with the added benefit of enhancing the knowledge of all participants.

V. Death of a child. The strongest of all grief reactions occurs when parents have lost a child. When a child has a fatal disease, the parents and immediate family face the loss of all their expectations for the child and an extended period of sadness. What health professionals do during this period is usually based on their own feelings as well as on assumptions that arise from customs, traditions, state and hospital health rules, and even research interests. Thoughtful and caring medical personnel can share and help to lighten the family's burden. (See Chap. 2, pp. 13–14, Chap. 22 p. 559 for specific recommendations.)

There is nothing wrong with feeling a sense of loss at the death of a patient or with the need to grieve, but it is the physician's hard task to put his or her own grief aside until the needs of the parents and family have been met.

2 Delivery of Pediatric Therapy

Cedric J. Priebe

The physical, economic, legal, and cultural contexts of pediatric therapy strongly impact its delivery. The nature of all such settings and processes is established by local history and policy. Those presented here are generalizations of delivery models adapted partly from the Medical Staff Bylaws and House Officer's Manual of Children's Hospital, Boston.

I. Settings for pediatric care

A. The hospitalized patient.

Pediatric hospitalization rates and average lengths of stay (ALOS) have seen a dramatic decline in the past decade. Admission to children's hospitals or to the pediatric wards of general hospitals, however, remains a crucial setting for the diagnosis and care of the severely ill child.

1. **The pediatric ward.** The pediatric ward setting fosters multidisciplinary care teams capable of managing a variety of complex medical and social problems. These teams include general pediatricians and specialists, pediatric nurses and nurse practitioners, physical therapists, respiratory therapists, nutritionists, activities therapists, and social workers. Rounds on admitted patients should be made at least daily on stable, long-term patients, and at least twice a day on patients who are acutely ill. The primary care pediatrician may function as attending physician or as a consultant to a hospital-based pediatrician or subspecialist attending physician. The care of children with complex medical problems frequently involves extended conversations among the care team and with parents. These interactions are sometimes best conducted at formally scheduled team and family meetings.
2. **The neonatal and pediatric intensive care unit** (see Chaps. 6 and 7).
3. **The delivery room** (see Chap. 6).
4. **The newborn nursery.** Full-term infants, with no complications, born to healthy mothers are now being discharged from the hospital on the first or second postdelivery day. Given this constraint, the following goals of newborn care should be met (see Chap. 3).
   a. Newborns should be examined within 24 hours of delivery or sooner if the obstetric or nursing staff expresses any concern, or if significant risk factors for infection are present.
   b. Neonatal metabolic and genetic screening should be obtained according to state health policy.
   c. Parents should be educated on feeding techniques and schedules, use of the car seat, and need to observe for jaundice.
   d. A trusting relationship between parents and pediatrician should be established.
   e. Vital statistics from the delivery and nursery course should be communicated to the primary care pediatrician.

B. The ambulatory patient

1. **Private office, health center, and clinic.** General pediatric therapy is predominantly delivered in the ambulatory setting and is maximized by a continuing relationship between primary care providers and families over time. Clearly established lines of authority and job descriptions for physician, nursing, and business staff ensure smooth flow of patient services.

2. **Emergency departments.** If at all possible, parents are encouraged to contact their pediatrician before taking their children to an emergency room. Most health maintenance organizations (HMOs) will not approve payment for the nonurgent use of the emergency room (ER) unless authorized by the primary care pediatrician. Unless a life-threatening emergency precludes involvement by the primary care pediatrician, the pediatrician should alert the ER staff of the expected patient. Depending on the ER's staffing for pediatric emergencies, the pediatrician may be required to assist in ER care.
3. **Home care.** The coordination and supervision of home medical care by the pediatrician is particularly crucial for the chronically ill and medically complex child. Physician orders are usually required for access of home care services. Many health insurance plans *require* that the primary care physician make the referral for home care services.

III. Compensation

A. Indemnity insurance. Traditional health insurance is purchased from third-party insurers by employers as a group benefit or by individuals. Some large employers provide self-insurance plans to their employees. Indemnity insurance plans reimburse pediatricians on a usual, customary, and reasonable fee-for-service basis for visits and procedures covered in the policy agreement. Health supervision services are frequently *excluded.* In addition, the following features may apply.

1. Annual deductibles.
2. Maximum benefits.
3. Excludable conditions or procedures.
4. Preadmission authorizations.
5. Utilization review.

B. Managed care systems combine delivery and financing in one system, attempting to control costs and quality through such measures as preventive services, quality assurance, utilization review, and appropriate financial incentives. A member's ability to "self-refer" is restricted or eliminated. Physicians may be restricted from participating by the managed care system's professional or economic credentialing requirements, or both. Providers may assume some level of financial risk by accepting capitated compensation (fixed payment per member per unit time, usually monthly) for a defined group of services.

1. **Preferred provider organization (PPO).** A designated panel of physicians and institutions is contracted to provide care at a significant discount from usual, customary, and reasonable fee schedules. Members may access providers outside the PPO with increased copayment or higher deductibles. Although there is no formal risk-sharing arrangement, there is a strong emphasis on utilization review.
2. **Health maintenance organization (HMO).** A federally qualified organization of physicians, hospital facilities, and other health care providers under contract to provide comprehensive health care to members. In most HMOs, a significant emphasis is placed on prevention.
   a. Staff model HMO: physicians as salaried employees.
   b. Group and network model HMO: contract of HMO with a single multispecialty medical group or with a network of many primary and multispecialty medical groups.
   c. Independent practice association (IPA) model HMO: contracts between HMO and office-based physicians. Practices are reimbursed either on a discounted fee-for-service or capitated basis according to a prearranged contract incorporating mechanisms that act to place the physician at financial risk for extraordinary hospitalization or subspecialty service costs for members.

C. Integrated delivery system (IDS). A complete provider entity that includes physicians, ancillary services (laboratory and imaging), and secondary and tertiary care hospitals. These systems attempt to provide a complete range of medical care to members on a capitated basis. Primary care practices may be acquired by such a system and/or enter long-term employment or independent service contracts.

D. Government programs

1. **Medicaid.** Each state establishes its own Medicaid regulations within federal guidelines. Eligibility is usually based on family size and income relative to the federal poverty level. Medicaid cards stating dates of eligibility are issued by local health and human services departments. The Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program within Medicaid covers routine health supervision services provided by qualified physicians.
2. **CHAMPUS.** The Civilian Health and Medical Program of the Uniformed Services covers care provided by civilian physicians and hospitals to active-duty and retired military dependents whose needs cannot be met by the Uniformed Services Pediatrics Program. Reimbursement is fee-for-service. Health supervision visits and immunizations are covered only for the first 2 years of life. Families are responsible for a yearly deductible and a 20% copayment for sick visits.

E. Direct payment. Patients and families without indemnity insurance and income above Medicaid eligibility levels are billed directly for medical services. Pools of municipal, institutional, and philanthropic funds are sometimes available to defray out-of-pocket costs to families for pediatric care.

III. Documentation

A. General guidelines for medical record entries

1. Include date and time of entry.
2. Use black ink and write legibly.
3. Sign all entries with legible printing of name and professional designation.
4. Use abbreviations only when approved by the facility.
5. Record all significant events, as well as anticipated events that did not occur, such as missed appointments or doses.
6. Record all therapeutic interventions and the patient's response.
7. Make objective rather than subjective statements; state facts rather than conclusions.
8. Limit to clinically relevant material.
9. Never delete, physically damage, or alter any previous entry.
10. Addenda should be date and time stamped, signed, and cross-referenced to the original entry.

B. Components of the pediatric medical record

1. **Acute care record**
   a. Admission history and physical assessment.
   b. Nursing flowsheets.
   c. Progress notes.
   d. Procedure notes.
   e. Doctor's orders.
   f. Discharge summary.
2. **Ambulatory record**
   a. Problem lists.
   b. Immunization history.
   c. Health supervision screens.
   d. Well-child visit notes.
   e. Urgent care visit notes.
   f. Telephone triage and consultation.
   g. Medications and prescription refills.
   h. Correspondence
      (1) Letters to and from specialists.
      (2) Letters to airlines.
      (3) Letters to utilities.
3. **Abstractions of the medical record.** The pediatrician is frequently called on to provide documentation of a patient's health status, including physical examination, immunization record, screening tests, current medications, and activity limitations. Such documentation is often required for the child's enrollment in school, participation in recreational activities, or receipt of public assistance. Attention must be given to the confidentiality of sensitive medical information in the completion of these required forms.

a. School and camp forms.
b. Enrollment forms for Women, Infants and Children (WIC) nutritional assistance program.
c. Disability claim forms.

C. **Medical orders.** Medical orders are the physician's communication and documentation of instructions to the nursing, pharmacy, and laboratory staff concerning the care and treatment of a particular patient. Although medical orders are the legal responsibility of the physician, the nurse's input in the formulation of medical orders is essential. Orders should be discussed and verified by the patient's nurse at the time they are written. All standing orders on admitted patients should be reviewed and/or rewritten at intervals determined by hospital policy, usually 48 hours.

1. **Written orders.** The following are recommendations for handwritten orders.
   a. Entries should be clear and legible, with special attention to dosage amounts and decimal points.
   b. Each page of orders should be correctly labeled with the patient's identifier.
   c. Each order is preceded by the **date** and **time** of entry and followed by the ordering physician's signature, **printed name,** and other clearly legible identifiers.
   d. Orders entered by medical students require cosignature by the supervising physician.
   e. Incorrect entries discovered *before* signature are stricken by drawing a single line through the error with the word *error* written and initialed nearby.
   f. Changes to orders *after* signature are transacted by a separate order to *cancel* and *replace* the prior order with the correction.
2. **Voice orders.** Physicians' duties occasionally require transcription of voice or telephone orders by nursing staff. Such orders are valid for a period limited by institutional policy and must be cosigned by the ordering physician within a certain period, usually 24 hours or less.
3. **Computerized orders.** Computerized hospital information systems offer rapid communication of orders and immediate decision aids to the ordering physician; they also can facilitate monitoring of resource utilization. Special considerations inherent in computerized order management systems include the accessibility and ease of use by clinicians, the handling of updates and corrections with audit trails, and the ability to adapt orders to circumstances unique to pediatrics.
4. **Order format.** Medical orders for admitted patients generally address the following areas.
   a. Identify physician and/or physician groups responsible for the patient.
   b. Diagnosis or reason for hospitalization.
   c. Condition: critical, serious, guarded, fair, or satisfactory.
   d. Allergies to medications.
   e. Infectious exposures.
   f. Infectious isolation or precautions
      (1) Complete/respiratory precautions.
      (2) Mask within 3 ft.
      (3) Gown and gloves for contact.
      (4) Universal precautions.
   g. Permitted activities.
   h. Monitoring.
      (1) Frequency of vital signs and weight.
      (2) Use of monitoring devices.
      (3) Measurement of intake and output.
   i. Diet. Define an enteral diet appropriate for age, caloric needs, and any special problems of velopharyngeal coordination, absorption, or transit time.
   j. Intravenous fluids or parenteral nutrition.
   k. Diagnostic tests. List all tests with dates, times, and frequencies of performance.