FOURTEENTH EDITION

handbook of PEDIATRICS

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Preface

In the fourteenth edition of this Handbook, the authors have again made extensive revisions and additions, but the format and objectives have remained the same: to present to the medical student, practicing physician, and other health professionals a concise and readily available digest of information pertinent to the diagnosis and management of pediatric disorders. We continue to stress the clinical aspects of the subjects covered—established concepts of pediatric diagnosis and treatment over the purely theoretical or experimental—but have included summaries of physiologic principles as they apply to our knowledge of the various conditions that are discussed.

This Handbook is not intended to be used as a substitute for the more complete pediatric texts and reference works but as a supplement to them; however, recent advances have been included wherever they have seemed to the authors to deserve inclusion in a handbook of this type.

Because of limitations of space, some subjects have been severely condensed or omitted entirely. For the same reason, no attempt has been made to give complete source references.

We have been extremely pleased with the continued success this Handbook has enjoyed among medical students, members of house staffs, practicing physicians, our colleagues in the pediatrics departments at medical schools both here and abroad, and other health professionals. Spanish, Italian, Portuguese, and Japanese editions have been published.

The authors wish to reaffirm their gratitude to all those who assisted in the preparation of the first thirteen editions of the Handbook. During the preparation of this edition, we resubmitted many chapters to our colleagues for comment and criticism. Their names and present affiliations are listed overleaf.

We wish also to take this opportunity to thank our readers throughout the world who have contributed useful suggestions.

Henry K. Silver
C. Henry Kempe
Henry B. Bruyn

Denver, Colorado
San Francisco, California
June, 1983

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NOTICE

Not all of the drugs mentioned in this book have been approved by FDA for use in infants or in children under age 6 or age 12. Such drugs should not be used if effective alternatives are available; they may be used if no effective alternatives are available or if the known risk of toxicity of alternative drugs or the risk of nontreatment is outweighed by the probable advantages of treatment.

Because of the possibility of an error in the article or book from which a particular drug dosage is obtained, or an error appearing in the text of this book, our readers are urged to consult appropriate references, including the manufacturer's package insert, especially when prescribing new drugs or those with which they are not adequately familiar.

–The Authors

Table of Contents

Preface ix

1. Pediatric History & Physical Examination 1

2. Pediatric Management During Illness 17

3. Development & Growth 27

4. Nutrition & Feeding 47

5. Fluid & Electrolyte Disorders 69
Robert W. Winters, MD

6. Anti-infective Chemotherapeutic Agents & Antibiotic Drugs 95

7. Immunization Procedures, Vaccines, Antisera, & Skin Tests 120

8. The Newborn Infant: Assessment & General Care 138

9. The Newborn Infant: Diseases & Disorders 159

10. Emotional Problems 187
Ruth S. Kempe, MD

11. Adolescence 218

12. Skin 233

13. Heart 261

14. Ear, Nose, & Throat 289

15. Respiratory Tract 308
John G. Brooks, MD

16. Gastrointestinal Tract 338

17. Blood 387

18. Urogenital System 416

19. Eye 434

20. Bones & Joints 454

21. Neuromuscular Disorders 470

22. Endocrine & Metabolic Disorders 508

23. Neoplastic Diseases & Reticuloendothelioses 560

24. Infectious Diseases: Viral & Rickettsial 582

25. Infectious Diseases: Bacterial & Spirochetal 615

26. Infectious Diseases: Protozoal & Metazoal 658

27. Infectious Diseases: Mycotic 676

28. Allergic Diseases 682

29. Collagen Diseases 697

30. Pediatric Emergencies 710

31. Poisons & Toxins 730

32. Pediatric Procedures 757

Appendix (Table of Contents of Appendix) 773

Index 853

Weight, Height, and Head Circumference . . . . Inside Front Cover

Index to Pediatric Emergencies . . . . Inside Back Cover

Pediatric History & Physical Examination* | 1

HISTORY

General Considerations

For many pediatric problems, the history is the most important single factor in arriving at a correct diagnosis.

A. Source of History: The history should be obtained from the parent or whoever is responsible for the care of the child. Much valuable information can also be obtained from the child. Adolescents especially should be interviewed alone, since they may deliberately withhold much information in the presence of their parents.

B. Interpretation of History: The presenting complaint as given may be a minor part of the problem. One should be prepared to go on, if necessary, to a more productive phase of the interview, which may have little or no apparent relationship to the complaint as originally presented.

C. Direction of Questioning: After the problem has been presented, fill in with necessary past and family history and other pertinent information. The record should also include whatever may be disclosed concerning the parents' temperaments, attitudes, and methods of rearing children.

Questions should not be prying, especially about subjects likely to be associated with feelings of guilt or shame; however, the parent should be allowed to volunteer information of this nature when prepared to do so. What worried the parents most about the child's illness? What did they expect would happen as a result of the illness? What do they expect will be done? What do they believe caused the illness? What are their basic worries? Hopes?

It is useful and frequently desirable for parents to have some idea of the physician's impressions, of the basic reasoning behind diagnostic and therapeutic considerations, and of the possible course of the child's illness.

D. Recorded History: The history should be a detailed, clear, and chronologic record of significant information. It should include the

*Revised with the assistance of Benjamin A. Gitterman, MD.

parents' interpretation of the present difficulty and indicate the results they expect from consultation.

E. Psychotherapeutic Effects: In many cases, the interview and history-taking is the first stage in the psychotherapeutic management of the patient and the parents. The history-taker should introduce himself or herself. Avoid being hurried or perfunctory. Avoid technical or ambiguous language. Recognize that socioeconomic and cultural background, education, and knowledge influence physician-patient communication.

HISTORY OUTLINE

The following outline should be modified and adapted as appropriate for the age of the child and the reason for consulting the physician:

(1) Name, address, and telephone number; sex; date and place of birth; race, religion, and nationality; referred by whom; father's and mother's names, occupations, and business telephone numbers.

(2) Date of this visit.

(3) Hospital or case number.

(4) Previous entries: Dates, diagnoses, therapy, other data.

(5) Summary of correspondence or other information from physicians, schools, etc.

Presenting Complaint (PC)

Patient's or informant's own brief account of the complaint and its duration.

Present Illness (PI) (or Interval History)

(1) When was the patient last entirely well?

(2) How and when did the disturbance start?

(3) Health immediately before the illness.

(4) Progress of disease; order and date of onset of new symptoms.

(5) Specific symptoms and physical signs that may have developed.

(6) Pertinent negative data obtained by direct questioning.

(7) Aggravating and alleviating factors.

(8) Significant medical attention and medications given and over what period.

(9) In acute infections, statement of type and degree of exposure and interval since exposure.

(10) For the well child, factors of significance and general condition since last visit.

(11) Examiner's opinion about the reliability of the informant.

Previous Health

A. Antenatal: Health of mother during pregnancy. Medical super-

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vision, diet, infections (eg, rubella), other illnesses, vomiting, bleeding, preeclampsia-eclampsia, other complications; Rh typing and serologic tests, pelvimetry, medications, x-ray procedures.

B. Natal: Duration of pregnancy, birth weight, kind and duration of labor, type of delivery, sedation and anesthesia (if known), state of infant at birth, resuscitation required, onset of respiration, first cry.

C. Neonatal: Apgar score, color, cyanosis, pallor, jaundice, cry, twitchings, excessive mucus, paralysis, convulsions, fever, hemorrhage, congenital abnormalities, birth injury. Difficulty in sucking, rashes, excessive weight loss, feeding difficulties. Length of hospital stay.

Development

(1) First raised head, rolled over, sat alone, pulled up, walked with help, walked alone, talked (meaningful words; sentences).

(2) Urinary continence during night; during day.

(3) Control of defecation.

(4) Comparison of development with that of siblings and parents.

(5) Any period of failure to grow or unusual growth.

(6) School grade, quality of work.

Nutrition

A. Breast or Formula Feeding: Type, duration, major formula changes, time of weaning, difficulties.

B. Supplements: Vitamins (type, amount, duration), iron.

C. "Solid" Foods: When introduced, how taken, types, family dietary habits (vegetarian, etc).

D. Appetite: Food likes and dislikes, idiosyncrasies or allergies, reaction of child to eating.

Illnesses

A. Infections: Age, types, number, severity.

B. Contagious Diseases: Age, complications following measles, rubella, chickenpox, mumps, pertussis, diphtheria, scarlet fever.

C. Others.

Immunization & Tests

Indicate type, number, reactions, age of child.

A. Inoculations: Diphtheria, tetanus, pertussis, measles, rubella, typhoid, mumps, others.

B. Oral Immunizations: Poliomyelitis.

C. Recall Immunizations ("Boosters").

D. Serum Injections: Passive immunizations.

E. Tests: Tuberculin, Schick, serology, others.

Operations

Type, age, complications; reasons for operations; apparent response of child.

Accidents & Injuries

Nature, severity, sequelae.

Medications

Chronic use of medications, allergies to medications.

Family History

(1) Father and mother (age and condition of health). What sort of people do the parents characterize themselves as being?

(2) Marital relationships. Little information should be sought at first interview; most information will be obtained indirectly.

(3) Siblings. Age, condition of health, significant previous illnesses and problems.

(4) Stillbirths, miscarriages, abortions; age at death and cause of death of members of immediate family.

(5) Tuberculosis, allergy, blood dyscrasias, mental or nervous diseases, diabetes, cardiovascular diseases, kidney disease, hypertension, rheumatic fever, neoplastic diseases, congenital abnormalities, convulsive disorders, others.

(6) Health of contacts.

Personality History

A. Relations With Other Children: Independent or clinging to mother; negativistic, shy, submissive; separation from parents; hobbies; easy or difficult to get along with. How does child relate to others? Physical deformities affecting personality.

B. School Progress: Class, grades, nursery school, special aptitudes, reaction to school.

Social History

A. Family: Income, home (size, number of rooms, living conditions, sleeping facilities), type of neighborhood, access to playground. Localities in which patient has lived. Who takes care of patient if both parents work outside the home? Who else lives in the home besides immediate family?

B. Family Support Systems: Relatives nearby or close friends to provide support and give parents time away from child.

C. School: Public or private, students per classroom, type of students.

D. Insurance: Blue Cross, Blue Shield, other types of health insurance.

Habits

A. Eating: Appetite, food dislikes, how fed, attitudes of child and parents toward eating.

B. Sleeping: Hours, disturbances, snoring, restlessness, dreaming, nightmares.

C. Recreation: Exercise and play.

D. Elimination: Urinary, bowel.

E. Disturbances: Excessive bed-wetting, masturbation, thumb-sucking, nail-biting, breath-holding, temper tantrums, tics, nervousness, undue thirst, others. Similar disturbances among members of family. School problems (learning, perceptual).

F. Adolescent Habits: Adolescents should be asked about smoking, alcohol or substance abuse, sexual activity, and use of birth control. These questions need not be asked immediately but should be routine if appropriate to the patient's age.

G. Dental Hygiene: Self-care habits (brushing, flossing), most recent preventive check.

H. Safety Habits of Family: Use of infant or child restraining devices in automobiles, careful storage of medicines and toxic substances, covering of electrical outlets, other safety measures.

System Review

A. Ears, Nose, and Throat: Frequent colds, sore throat, sneezing, stuffy nose, discharge, postnasal drip, mouth breathing, snoring, otitis, hearing, adenitis, allergies.

B. Teeth: Age at eruption of deciduous and permanent teeth; number at age 1 year; comparison with siblings.

C. Cardiorespiratory: Frequency and nature of disturbances. Dyspnea, chest pain, cough, sputum, wheeze, expectoration, cyanosis, edema, syncope, tachycardia.

D. Gastrointestinal: Vomiting, diarrhea, constipation, type of stools, abdominal pain or discomfort, jaundice.

E. Genitourinary: Enuresis, dysuria, frequency, polyuria, pyuria, hematuria, character of stream, vaginal discharge, menstrual history, bladder control, abnormalities of penis or testes.

F. Neuromuscular: Headache, nervousness, dizziness, tingling, convulsions, habit spasms, ataxia, muscle or joint pains, postural deformities, exercise tolerance, gait. Screening for scoliosis in adolescents.

G. Endocrine: Disturbances of growth, excessive fluid intake, polyphagia, goiter, thyroid disease.

H. Special Senses.

I. General: Unusual weight gain or loss, fatigue, skin color or texture, other abnormalities of skin, temperature sensitivity, mentality, bleeding tendency, pattern of growth (record previous heights and

weights on appropriate graphs). Time and pattern of pubescence. Hyperactivity. Attention span.

The Health Record

Every patient should have a comprehensive medical and health record containing all pertinent information. The parents should be given a summary of this record (including data regarding illnesses, operations, idiosyncrasies, sensitivities, heights, weights, special medications, and immunizations).

PHYSICAL EXAMINATION

Every child should have a complete systematic examination at regular intervals. The examination should not be restricted to those portions of the body considered to be involved on the basis of the presenting complaint.

Approaching the Child

Adequate time should be allowed for the child and the examiner to become acquainted. The child should be treated as an individual whose feelings and sensibilities are well developed, and the examiner's conduct should be appropriate to the age of the child. A friendly manner, quiet voice, and slow and easy approach will help to facilitate the examination. If the examiner is not able to establish a friendly relationship but feels that it is important to proceed with the examination, this should be done in an orderly, systematic manner in the hope that the child will then accept the inevitable.

The examiner's hands should be washed in warm water before the examination begins and should be warm.

Observation of the Patient

Although the very young child may not be able to speak, much information may be obtained by an observant and receptive examiner. The total evaluation of the child should include impressions obtained from the time the child first enters the room; it should not be based solely on the period during which the patient is on the examining table. This is also the best time to assess the interaction of parent and child; the examiner's impressions should be recorded.

In general, more information is obtained by careful inspection than from any other method of examination.

Holding for Examination

A. Before Age 6 Months: The examining table is usually well tolerated.

B. Age 6 Months to 3–4 Years: Most of the examination may be performed while the child is held in the parent's lap or over the parent's shoulder. Certain parts of the examination can sometimes be done more easily with the child prone or held against the parent so that the examiner cannot be seen.

Removal of Clothing

Clothes should be removed gradually to prevent chilling and to avoid resistance from a shy child. In order to save time and to avoid creating unpleasant associations with the doctor in the child's mind, undressing the child and taking the temperature are best performed by the parent. The physician should respect the marked degree of modesty that some children may exhibit.

Sequence of Examination

In most cases, it is best to begin the examination of the young child with an area that is least likely to be associated with pain or discomfort. The ears and throat should usually be examined last. The examiner should develop a regular sequence of examination that can be adapted as required by special circumstances.

Painful Procedures

Before performing a disagreeable, painful, or upsetting examination, the examiner should tell the child (1) what is likely to happen and how the child can assist, (2) that the examination is necessary, and (3) that it will be performed as rapidly and as painlessly as possible.

GENERAL PHYSICAL EXAMINATION

(See also Chapter 8.)

Record temperature, pulse rate, and respiratory rate (TRP); blood pressure (see p 262); weight; and height. The weight should be recorded at each visit; the height should be determined at monthly intervals during the first year, at 3-month intervals in the second year, and twice a year thereafter. The height, weight, and head circumference of the child should be compared with standard charts and the approximate percentiles recorded. Multiple measurements at intervals are of more value than single ones, since they give information regarding the pattern of growth. The blood pressure should also be compared with standard percentiles.

Rectal Temperatures

During the first years of life, the temperature should be taken by rectum (except for routine temperatures of the premature infant and infants under age 1 month, when axillary temperatures are sufficiently

accurate). The child should be laid face down across the parent's lap and held firmly with the parent's left forearm placed flat across the child's back; the parent can separate the buttocks with the left thumb and index finger and insert the lubricated thermometer with the right hand. Activity, apprehension, and fear may elevate the temperature.

Rectal temperature may be 1 degree higher than oral temperature. A rectal temperature up to 37.8 °C (100 °F) may be considered normal in a child.

General Appearance

Does the child appear well or ill? Degree of prostration; degree of cooperation; state of comfort, nutrition, and consciousness; abnormalities; gait, posture, and coordination; estimate of intelligence; reaction to parents, physician, and examination; nature of cry and degree of activity; facies and facial expression.

Skin

Color (cyanosis, jaundice, pallor, erythema), texture, eruptions, hydration, edema, hemorrhagic manifestations, scars, dilated vessels and direction of blood flow, hemangiomas, café au lait areas and nevi, Mongolian spots, pigmentation, turgor, elasticity, subcutaneous nodules, sensitivity, hair distribution, character, desquamation.

Practical notes:

(1) Loss of turgor, especially of the calf muscles and skin over the abdomen, is evidence of dehydration.

(2) The soles and palms are often bluish and cold in early infancy; this is of no significance.

(3) The degree of anemia cannot be determined reliably by inspection, since pallor (even in the newborn) may be normal and not due to anemia.

(4) To demonstrate pitting edema in a child, it may be necessary to exert prolonged pressure.

(5) A few small pigmented nevi are commonly found, particularly in older children.

(6) Spider nevi occur in about one-sixth of children under age 5 years and almost half of older children.

(7) Mongolian spots (large, flat, black or blue-black areas) are frequently present over the lower back and buttocks; they have no pathologic significance.

(8) Cyanosis will not be evident unless at least 5 g of reduced hemoglobin is present; therefore, it develops less easily in an anemic child.

(9) Carotenemia is usually most prominent over the palms and soles and around the nose and spares the conjunctiva.

(10) Striae and wrinkling may indicate rapid weight gain or loss.

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