Comprehensive Manuals in Pediatrics

Series Editors

Michael Katz

E. Richard Stiehm

Pediatric Infectious Diseases for the Practitioner

Melvin I. Marks, M.D.

With 83 Illustrations, 12 in Full Color

Springer-Verlag
New York Berlin Heidelberg Tokyo

Melvin I. Marks, M.D., University of Oklahoma College of Medicine,
Department of Pediatrics, Oklahoma Children's Memorial Hospital, 940
Northeast 13th Street, Oklahoma City, Oklahoma 73190, U.S.A.

SERIES EDITORS

Michael Katz, M.D. Reuben S. Carpentier Professor and Chairman,
Department of Pediatrics, College of Physicians and Surgeons, Columbia
University; and Director, Pediatric Service, Presbyterian Hospital (Babies
Hospital), New York, New York, U.S.A.

E. Richard Stiehm, M.D., Professor of Pediatrics, UCLA School of
Medicine, UCLA Hospitals and Clinics, Los Angeles, California, U.S.A.

Library of Congress Cataloging in Publication Data

Marks, M. I. (Melvin I.)

Pediatric infectious diseases for the practitioner.

(Comprehensive manuals in pediatrics)

Includes bibliographical references and index.

I. Communicable diseases in children—Handbooks,
manuals, etc. I. Title. II. Series. [DNLM:

1. Communicable Diseases—in infancy & childhood.

WC 100 M346p]

RJ401.M37. 1984. 618.92'9. 84-13837

© 1985 by Springer-Verlag New York, Inc.

Softcover reprint of the hardcover 1st edition 1985

All rights reserved. No part of this book may be translated or reproduced in any form without written permission from Springer-Verlag, 175 Fifth Avenue, New York, New York 10010, U.S.A. The use of general descriptive names, trade names, trademarks, etc., in this publication, even if the former are not especially identified, is not to be taken as a sign that such names, as understood by the Trade Marks and Merchandise Marks Act, may accordingly be used freely by anyone.

While the advice and information of this book is believed to be true and accurate at the date of going to press, neither the authors nor the editors nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to material contained herein.

Typeset by International Computaprint Corporation, Horsham, Pennsylvania.

9 8 7 6 5 4 3 2 1

ISBN-13: 978-1-4612-9535-8

e-ISBN-13: 978-1-4612-5038-8

DOI: 10.1007/978-1-4612-5038-8

To those who *care* for children

Contents

Series Foreword	
Michael Katz and E. Richard Stiehm	xxvii
Preface	xxix
Acknowledgement	xxx
Color Insert	xxxiii
1 Pediatric Immunizations	1
General	1
International Travel	1
Pregnancy	1
Hypersensitivity	2
Malignancies/Immunosuppression	2
Seizures	2
Conventional Vaccines	3
B.C.G.	3
Diphtheria, Tetanus, Pertussis (DTP)	4
DT-Adult	5
Hepatitis	5
Influenza	11
Measles	12
Meningococcus: Groups A and C	13
Mumps	14
Pertussis	14
Pneumococcus	14
Poliovirus	15
Rabies	16
Rubella	16
Smallpox	17
Tetanus	20

Combined Vaccines	21
Mixed Bacterial Vaccines and “Cold Shots”	21
Experimental Immunizations	22
References	23

2 Antimicrobial Therapy **32**

Principles	32
Drug Choice	33
Dose/Frequency	34
Route	34
Therapeutic Monitors	36
Duration of Therapy	38
Host Factors	38
Mechanisms of Action	39
Combinations	39
Antimicrobial Prophylaxis	40
Resistance	42
Toxicity	42
Specific Recommendations	45
I. Antibacterials	45
II. Antifungals	79
III. Antiparasitics	83
IV. Antiprotozoals	88
V. Antivirals	90
VI. Miscellaneous	92
VII. Summary of Antimicrobial Choices	93
References	98

3 Infections of the Newborn **123**

General Considerations	123
Newborn Environments	123
Immunity	126
Clinical Manifestations	127
Congenital and Perinatal Infections	127
Cytomegalovirus	127
Congenital Rubella	131
Congenital and Perinatal Herpes Simplex Infections	135
Congenital Toxoplasmosis	139
Hepatitis	141
Congenital and Neonatal Varicella	143
Mumps	145
Measles	145
Lymphocytic Choriomeningitis Virus	146

Acquired Neonatal Infections: Specific Causes	146
Group B Streptococcus	146
Other Streptococci	149
<i>E. coli</i> and Gram-Negative Enteric Infections	149
Staphylococcus	152
Salmonella	155
Listeria	156
Syphilis	157
Gonococcal Infection	159
Tuberculosis	162
Anaerobes	166
Fungal Infections	166
Enterovirus	168
Chlamydia	169
Acquired Neonatal Infections: Clinical Syndromes	171
Neonatal Sepsis	171
Meningitis	177
Respiratory Infections	179
Urinary Tract Infection	184
Osteomyelitis/Arthritis	185
Diarrhea	186
<i>C. difficile</i> and Antibiotic-Associated Diarrhea	188
Necrotizing Enterocolitis	188
Skin Infections	190
Eye Infections	191
Otitis Media	191
References	192

4 Upper Respiratory Infections 216

Epidemiology	216
Etiology	217
Treatment and Prevention	217
Frequent Respiratory Infections	217
Rhinitis	218
Etiology	218
The Common Cold Syndrome	220
Allergic Rhinitis	220
Pharyngitis/Tonsillitis	222
Etiology	222
Streptococcal Pharyngitis	222
Diagnosis	224
Non-Group A Streptococcus Bacterial Infection	226
Diphtheria	226
Epidemiology/Pathogenesis	226
Nonbacterial Causes of Pharyngitis	228

X Contents

Otitis	229
Otitis Externa: Acute	230
Otitis Externa: Chronic	230
Otitis Externa: Invasive	231
Otitis Media	231
Chronic Suppurative Otitis Media	239
Serous Otitis Media	240
Mastoiditis	241
Pathogenesis/Etiology	241
Sinusitis	241
Pathogenesis	242
Infections in and Around the Eye	246
Periorbital Cellulitis	248
Conjunctivitis	251
Epidemiology/Etiology	251
Adenovirus Conjunctivitis	253
The Conjunctivitis-Otitis Syndrome	253
Chlamydia Conjunctivitis	256
Clinical Manifestations	256
Diagnosis	257
Treatment	257
Prevention	258
Prognosis	258
Herpes Simplex Eye Infections	258
Clinical Features	258
Diagnosis	259
Management	259
Other Causes of Keratitis	260
Endophthalmitis	260
Pathogenesis/Etiology	260
Clinical Manifestations/Diagnosis	261
Treatment	261
Chorioretinitis	262
Soft Tissue Infections: Head and Neck	263
Pathogenesis and Etiology	263
Clinical Manifestations	263
Diagnosis	264
Differential Diagnosis	264
Treatment	264
Complications	265
Epiglottitis	265
Etiology and Pathogenesis	265
Clinical Manifestations	266
Diagnosis	266
Treatment	267
Prognosis	267

Cervical Lymphadenitis	267
Epidemiology	268
Pathogenesis	268
Etiology	268
Clinical Manifestations	269
Diagnosis	271
Treatment	274
Thyroiditis	275
Etiology	276
Diagnosis/Treatment	276
Parotitis	276
Mumps	276
Acute Suppurative Parotitis	278
Chronic Parotitis	278
Recurrent Parotitis	279
References	279

5 Lower Respiratory Infections 292

General Considerations	292
Pathogenesis/Etiology	292
Clinical Manifestations	293
Diagnosis	294
Therapy	294
Prevention	295
Croup	295
Epidemiology	296
Etiology	296
Clinical Manifestations	297
Diagnosis	298
Treatment	298
Prognosis	300
Tracheitis	301
Pathogenesis/Etiology	301
Clinical Manifestations/Diagnosis	301
Treatment	301
Tracheobronchitis	302
Community-Acquired	302
Hospital-Acquired	302
Bronchitis	303
Pathogenesis	304
Etiology	304
Treatment	305
Prevention	305
Bronchiolitis	306
Epidemiology	306

xii Contents

Etiology	306	
Clinical Manifestations	307	
Diagnosis	307	
Therapy	308	
Prognosis	308	
Prevention	309	
Pneumonia	309	
Epidemiology	309	
Pathogenesis	310	
Etiology	310	
Clinical Manifestations	313	
Diagnosis	313	
Differential Diagnosis	317	
Treatment	318	
Prevention	319	
Complications	320	
Empyema	321	
Epidemiology	321	
Pathogenesis	321	
Etiology	322	
Clinical Manifestations	323	
Diagnosis	323	
Differential Diagnosis	325	
Therapy	325	
Prognosis	327	
Lung Abscess	328	
Pathogenesis/Etiology	328	
Clinical Presentation/Diagnosis	329	
Treatment	329	
Prognosis	330	
Chlamydia Pneumonia	330	
Psittacosis	330	
<i>Chlamydia trachomatis</i> Pneumonia	331	
Pertussis	332	
Epidemiology	332	
Pathogenesis	333	
Etiology	333	
Clinical Manifestations	333	
Diagnosis	334	
Therapy	335	
Complications	336	
Prevention	337	
Mycoplasma	339	
Epidemiology	339	
Etiology	339	

Clinical Manifestations	339
Diagnosis	340
Treatment	341
Complications	341
Prognosis	342
Pulmonary Tuberculosis	342
Epidemiology	342
Pathogenesis	343
Clinical/Radiographic Manifestations	344
Diagnosis	345
Therapy	347
Prevention	349
Mycobacteriosis	350
Cystic Fibrosis	351
Clinical Manifestations	351
Diagnosis	352
Treatment	353
Isolation	356
<i>Pneumocystis carinii</i> Pneumonia	356
Clinical Manifestations	356
Diagnosis	356
Treatment	358
Prevention	358
Toxocariasis	359
Epidemiology/Pathogenesis	359
Etiology	359
Clinical Manifestations	359
Diagnosis	360
Therapy	360
Prognosis	361
Prevention	361
Histoplasmosis	361
Epidemiology	361
Clinical Manifestations	362
Diagnosis	362
Therapy	363
Extrapulmonary Histoplasmosis	364
Coccidioidomycosis	365
Acute Self-Limited Infection	365
Progressive Pneumonia and Disseminated Infection	365
Diagnosis	365
Treatment	366
Legionellosis	366
Epidemiology	366
Etiology	367

Clinical Manifestations	367
Diagnosis	367
Therapy	368
Prognosis	368
Nocardiosis	368
Epidemiology	368
Etiology	369
Clinical Manifestations	369
Diagnosis	369
Therapy	369
Blastomycosis	370
Epidemiology	370
Etiology	371
Clinical Manifestations	371
Diagnosis	371
Therapy	371
Prognosis	372
Cryptococcus	372
Sporotrichosis	372
Infrequent Causes of Pneumonia	373
Actinomycosis	373
Mucormycosis	373
Aspergillosis	373
Meliodosis	374
Q Fever	374
Epidemiology	374
Etiology	374
Clinical Manifestations	375
Diagnosis	375
Therapy/Prevention	375
Prognosis	375
Parasitic Pulmonary Diseases	375
Paragonimiasis	376
References	377

6 Gastrointestinal Infections

396

Gastroenteritis	396
Epidemiology	396
Pathogenesis	397
Etiology	399
Clinical Manifestations	403
Diagnosis	406
Treatment	409

Complications	411
Prevention	412
Rotavirus Infection	414
Epidemiology	414
Diagnosis	414
Clinical Manifestations	414
Treatment/Prevention	414
Salmonellosis	415
Pathogenesis	415
Epidemiology	415
Clinical Manifestations	416
Therapy	416
Control	417
Campylobacteriosis	417
Epidemiology	417
Clinical Manifestations	418
Complications	418
Treatment	419
Shigellosis	419
Diagnosis	419
Treatment	419
Complications	420
Yersiniosis	420
Epidemiology	420
Clinical Manifestations	421
Extragastrointestinal Manifestations	421
Treatment	422
Cholera	422
Epidemiology/Pathogenesis	422
Clinical Manifestations	424
Diagnosis	424
Treatment	424
Prevention	424
Giardiasis	424
Epidemiology	424
Clinical Manifestations/Treatment	425
Complications	425
Prevention	425
Amebiasis	426
Epidemiology	426
Clinical Manifestations	426
Extragastrointestinal Amebiasis	427
Diagnosis	427
Treatment	428
Therapy	428

xvi Contents

Stomatitis	428
Acute Stomatitis	428
Recurrent Stomatitis	430
Esophagitis	431
Pathogenesis	431
Etiology	432
Diagnosis	432
Treatment: Candida Esophagitis	432
Treatment: Herpes Esophagitis	433
Tuberculosis	433
Complications	433
Hepatitis	433
Epidemiology	433
Etiology	435
Clinical Manifestations	436
Diagnosis	438
Prognosis/Complications	440
Prevention	440
Parasitic Causes of Hepatitis	441
Hepatic, Splenic, and other Intraabdominal Abscesses	443
Pathogenesis/Etiology	443
Clinical Manifestations	443
Diagnosis	444
Treatment	444
Cholecystitis	444
Pathogenesis/Epidemiology	444
Etiology	444
Clinical Manifestations	445
Diagnosis	445
Treatment	445
Cholangitis	446
Clinical Features/Pathogenesis/Etiology	446
Diagnosis	446
Treatment	446
Pancreatitis	447
Pathogenesis	447
Etiology	447
Clinical Manifestations	447
Diagnosis	447
Complications	448
Management	449
Peritonitis	449
Pathogenesis	449
Etiology	449
Clinical Manifestations	451

Diagnosis	451
Treatment	452
Prevention	453
Complications	453
Appendicitis	454
Etiology	454
Differential Diagnosis	454
Clinical Manifestations	445
Complications	455
Treatment/Prevention	455
References	456

7 Skin Infections

476

Skin Infections	476
Nonspecific Rash and Systemic Infection	476
Mycoplasma	477
Rashes Involving the Palms and Soles	479
Specific Rashes	480
Skin Infection Associated with Animal Contact	481
Tick Bites	481
Viral and Presumably Viral Syndromes	481
Measles	481
Varicella	487
Herpes Zoster	492
Rubella	494
Hand, Foot, and Mouth Disease	494
Herpes Simplex Infections of the Skin	496
Warts	500
Molluscum Contagiosum	502
Roseola Infantum	503
Erythema Infectiosum	504
Mucocutaneous Lymph Node Syndrome (Kawasaki Disease)	505
Bacterial Skin Infections	509
Furunculosis/Abscess	509
Cellulitis	512
Impetigo	515
Staphylococcal Scalded Skin Syndrome	518
Toxic Shock Syndrome	521
Scarlet Fever	524
Wound Infection	525
Leprosy	528
Pinta	530
Yaws	531

Fungal Skin Infections	531
Classification	531
Etiology	533
Candida Skin Infections	536
Mucocutaneous Candidiasis	538
Sporotrichosis	540
Miscellaneous Causes of Skin Infection	542
Rocky Mountain Spotted Fever	543
Typhus/Rickettsialpox	546
Leishmaniasis	547
Filariasis/Onchocerciasis	549
Scabies	550
Pediculosis	552
References	553

8 Bone and Joint Infections **569**

Osteomyelitis	569
Epidemiology	569
Pathogenesis	570
Etiology	570
Diagnosis	573
Treatment	575
Prognosis	579
Arthritis	579
Pathogenesis	580
Etiology	581
Clinical Manifestations	582
Lyme Arthritis	582
Diskitis	583
Sacroiliac Arthritis	584
Diagnosis of Arthritis	584
Differential Diagnosis	587
Treatment	587
Followup and Prognosis	590
References	591

9 Neurologic Infections **596**

Meningitis	596
Pathogenesis	596
Etiology	597
Clinical Manifestations	599
Diagnosis	600

Treatment	603
Complications	608
Prevention	610
Aseptic Meningitis	611
Definition/Epidemiology	611
Etiology	613
Clinical Manifestations	613
Diagnosis	613
Management	614
Prognosis	614
Fungal Meningitis	615
Epidemiology/Etiology	615
Clinical Manifestations/Diagnosis	616
Management	616
Eosinophilic Meningitis	617
Central Nervous System Shunt Infections	618
Etiology/Pathogenesis	618
Clinical Manifestations	618
Diagnosis	619
Treatment	619
Prognosis	620
Prevention	621
Encephalitis	621
Epidemiology	623
Etiology	623
Clinical Manifestations	624
Diagnosis	625
Treatment	626
Prognosis	626
Herpes Simplex Encephalitis	626
Epidemiology/Pathogenesis	626
Etiology	627
Clinical Manifestations	627
Diagnosis	627
Treatment/Prognosis	628
Amebic Meningoencephalitis	629
Epidemiology/Pathogenesis/Etiology	629
Clinical Manifestations	630
Diagnosis	630
Treatment	630
Prognosis	630
Rabies	631
Brain Abscess	631
Pathogenesis	631
Etiology	632

Clinical Manifestations	633
Diagnosis	633
Treatment	634
Prognosis	635
Subdural/Epidural Abscess	635
Clinical Manifestations/Diagnosis	635
Management	636
Tetanus	636
Epidemiology	636
Etiology	636
Clinical Manifestations	637
Diagnosis	637
Treatment	638
Botulism	638
Etiology/Pathogenesis	638
Clinical Manifestations	638
Diagnosis	639
Therapy	639
Infant Botulism	639
Reye Syndrome	640
References	640

10 Genitourinary Infections

652

Urinary Tract Infections	652
Epidemiology/Pathogenesis	652
Etiology	654
Clinical Manifestations	655
Diagnosis	656
Treatment	659
Prognosis	662
Renal Abscess	663
Epidemiology/Pathogenesis	663
Etiology	663
Clinical Manifestations	664
Diagnosis	664
Treatment	664
Urethritis	664
Epidemiology/Pathogenesis	664
Etiology	665
Clinical Manifestations	666
Diagnosis	666
Treatment	666
Prostatitis	667
Vaginitis	667
Clinical Manifestations	667

Etiology	667	
Diagnosis	668	
Treatment	669	
Pelvic Inflammatory Disease	670	
Epidemiology/Pathogenesis	670	
Etiology	670	
Clinical Manifestations	670	
Diagnosis	671	
Treatment	672	
Complications	673	
Epididymitis/Orchitis	673	
Etiology/Clinical Manifestations	673	
Diagnosis	673	
Therapy	673	
Gonorrhea	674	
Clinical Manifestations	674	
Diagnosis	675	
Treatment	676	
Complications	676	
Genital Herpes	678	
Epidemiology/Etiology	678	
Clinical Manifestations	678	
Diagnosis	678	
Treatment	679	
Prognosis	679	
Chlamydial Genitourinary Infections	680	
Clinical Features	680	
Diagnosis	680	
Treatment	680	
Complications	681	
Lymphogranuloma Venereum	681	
Etiology/Diagnosis	681	
Syphilis	682	
Clinical Manifestations	682	
Diagnosis	683	
Treatment	683	
Chancroid	684	
Treatment	685	
Sexually Transmitted Diseases in Abused Pediatric Patients	685	
References	686	

11 Cardiovascular Infections

696

Endocarditis	696
Pathogenesis	696
Etiology	697

Clinical Manifestations	699
Diagnosis	700
Acute Complications	701
Treatment	702
Prevention	704
Prognosis	704
Fungal Endocarditis	705
Myocarditis	706
Epidemiology	706
Pathogenesis	706
Etiology	707
Clinical Manifestations	707
Diagnosis	708
Treatment	709
Complications	709
Prognosis	710
Pericarditis	710
Epidemiology/Pathogenesis	710
Etiology	710
Clinical Manifestations	711
Diagnosis	712
Treatment	713
Prognosis	714
References	714
12 Systemic Infections in Normal and Immunocompromised Hosts	719
Systemic Infections Presenting as Fever	719
Fever	719
Acute Fever	720
Persistent Fever/Fever of Unknown Origin (FUO)	722
Relapsing Fever	723
Fever and Myalgia	724
Typhoid and Enteric Fever	725
Epidemiology/Pathogenesis	725
Clinical Manifestations	725
Diagnosis	726
Treatment	726
Prevention	727
Bacteremia/Septicemia	727
Epidemiology/Etiology/Pathogenesis	727
Clinical Manifestations	728
Diagnosis	729
Treatment	731

Septic Shock	731
Etiology/Pathogenesis	731
Diagnosis/Clinical Manifestations	732
Treatment	733
Prognosis	736
Infectious Mononucleosis and Other Epstein-Barr Virus Infections	736
Epidemiology/Etiology	736
Clinical Manifestations	736
Diagnosis	738
Treatment	739
Prognosis	739
Leptospirosis	740
Epidemiology/Etiology	740
Clinical Manifestations	741
Diagnosis	741
Treatment	741
Brucellosis	742
Etiology/Pathogenesis	742
Clinical Manifestations	742
Diagnosis	742
Treatment	743
Tularemia	743
Epidemiology	743
Etiology	743
Clinical Manifestations	744
Diagnosis	745
Treatment	745
Prevention	746
Plague	746
Epidemiology/Etiology	746
Clinical Manifestations	746
Diagnosis	747
Treatment	747
Trichinosis	747
Epidemiology/Pathogenesis	747
Clinical Manifestations	748
Diagnosis	748
Treatment	749
Malaria	749
Epidemiology	749
Clinical Manifestations	750
Diagnosis	751
Treatment	751
Prevention	752
Trypanosomiasis	752

Epidemiology/Etiology	752
Clinical Manifestations	753
Diagnosis	753
Treatment	753
Opportunistic Infections	754
Etiology/Pathogenesis	754
Cancer/Leukemia	755
Diagnosis	756
Clinical Manifestations	758
Treatment/Prevention	758
Candidiasis	759
Epidemiology/Pathogenesis	759
Etiology	759
Clinical Manifestations	760
Diagnosis	761
Treatment	762
Prevention	762
Immune Deficiency	763
Etiology/Pathogenesis	763
Clinical Manifestations	763
Diagnosis	765
Down Syndrome	768
Treatment	769
Acquired Immunodeficiency Syndrome (AIDS)	770
Epidemiology/Pathogenesis	770
Clinical Manifestations	771
Treatment/Prognosis	772
References	772

13 Nosocomial Infections

790

Definition	790
Surveillance/Epidemiology	790
Control Measures	793
Special Units	797
Handwashing Facilities	797
Visiting Policies	797
Specific Recommendations	797
Definitions	808
Major Isolation Categories	808
Isolation and Precaution Techniques	808
Respiratory Isolation	808
Strict Isolation	809
Protective Isolation	809
Enteric Isolation	809

Wound and Skin Isolation	810
Secretion Precautions (Lesions and Oral)	810
Excretion Precautions	811
Blood Precautions	811
Personnel Guidelines	812
Respiratory Infection	812
Herpes Infection	812
General Considerations for Newborns	812
References	816

Index	819
-------	-----

Series Foreword

Comprehensive Manuals in Pediatrics are designed to broaden the practitioner's clinical scope by providing a wide range of diagnostic and management skills ordinarily considered to be the exclusive domain of the specialists. Although the series as a whole constitutes a comprehensive text in pediatrics, each volume stands on its own as a self-contained reference for the busy practitioner.

In order to maintain a uniform style and coverage of each subject, each manual is usually written by no more than one or two authors. Each author is an acknowledged expert in his or her field and provides a comprehensive, up-to-date account of the topic under discussion. Practically oriented, each volume offers concise guidelines and courses of treatment.

Michael Katz
E. Richard Stiehm

Preface

The preface—my opportunity to rationalize this labor, titillate the reader, philosophize or otherwise self-indulge. I'll take full advantage.

Why write a book? After fifteen years' experience as an infectious disease consultant, teacher and researcher, I feel it is time to speak out! I have spent the majority of my waking hours thinking, reading and writing about childrens' infectious disease problems, have amassed a veritable Fort Knox of publications on the subject and have been reasonably outspoken. Yet the field continues to progress with reckless speed and the gaps between our knowledge and effective communication of new information remain wide. I am eager to accept more responsibility for teaching yet my audience has been limited. This, added to my frustration with multi-authored texts, prompted me to write this book.

Who is the book intended for? This book is intended for and dedicated to those who will take the time to read it - my comrades in arms! Facetious as it may seem, readers are not as frequent as purchasers and purchasers not as frequent as health care providers. I hope the contents will appeal to students, primary care clinicians and their assistants, and trainees and practitioners in infectious diseases and clinical microbiology. They see a patient, have the courage to make a diagnosis, to change it if appropriate events arise, to withhold antibiotics, to admit their lack of knowledge, to seek help in these pages and from their colleagues, and to dedicate themselves to continue to learn from their patients and each other.

What is the book about? This book concerns common pediatric infectious disease problems. The system approach is used (e.g., respiratory, gastrointestinal, skin infections) and is considered in terms of viral, bacterial, and fungal causes of illness. Mycoplasma, protozoa, chlamydia, parasites and rickettsia are also included where appropriate, as are noninfectious causes. I give special consideration to immunizations, antimicrobial therapy and to particular groups, such as newborns. I refer to problems that I have seen repeatedly for purposes of teaching and illustration. Let's

face it, many of the common infectious diseases of children are self-limiting and benign and can be diagnosed and handled in several fashions, often of equal validity. The most important lessons for the doctor are often provided by the most difficult and unusual cases. Thus I am not taking an ivory tower view of infectious diseases, but rather trying to use the type of case a consultant like myself might see to illustrate principles of diagnosis and management applicable to common problems in practice.

How will this book achieve the goals of teaching students and helping practitioners? I often judge a book by consulting it several times in reference to specific problems about my patients or questions raised by students. After several attempts to consult the index to guide me to the information I am seeking, I can usually begin to evaluate the practical usefulness of the text. Drawing upon that experience, I hope the index of this book proves to be replete with useful citations so that readers may easily be guided to informative, well organized content. Emphasis on clinical presentation, and liberal use of tables for listing causes, differential diagnoses, diagnostic aids and therapies should be especially helpful. Recent references are offered throughout the text for those interested in additional reading and to support more contentious statements.

Finally, no preface would be complete without a philosophical note. When I began to write this book, I felt like an explorer embarking on a new journey. It was with a mixture of excitement and apprehension that I set sail, hoping to effectively bridge the gap between the microbiological sciences and clinical infectious diseases. I hope this has been a successful journey.

Melvin I. Marks

Acknowledgement

Writing a single-authored textbook is like having a child. This one was inspired by my teachers and role models, Henry Kempe, Keith Drummond, Mary Ellen Avery and Theodore Eickhoff. The opportunity was provided by Michael Katz, E. Richard Stiehm and Springer-Verlag. The long arduous gestation required much love and understanding from my wife Susan, and my children, Suzanne, Jennifer and Daniel. Birth was facilitated by expert care from Joyce Bagan, Rose Stursa and Harris Stutman. Finally, I acknowledge the readers who will share the reward, but also the responsibility for this book's future growth and development.

A

B

C

Figure 2-4. Three manifestations of antibiotic-associated erythema multiforme. **A:** Mucosal ulceration. **B:** Palmar rash. **C:** Hemorrhagic target lesions (see p. 44).

Figure 4-1. Herpangina lesions (white papules on a red base) on posterior palate (see p. 223).

Figure 6-3. Scleral and cutaneous jaundice in patient with acute hepatitis (see p. 437).

Figure 6-4. Papular acrodermatitis of Gianotti disease (see p. 437).

7-1a

7-1b

7-5

Figure 7-1. Cutaneous manifestations of ECHO virus 11 infection in two infants. (Courtesy of Dr. B. Brann.) (See p. 478).

Figure 7-5. Atypical measles rash on palms (see p. 485).

Figure 7-15. Streptococcal cellulitis (see p. 513).

Figure 7-22. Dermatitis due to *Epidermophyton floccosum*. (Courtesy of Dr. B. Brann.) (See p. 537).

Figure 12-3. Skin eruption after the administration of ampicillin in a patient with infectious mononucleosis (see p. 737).