

DIAGNOSTICS FRONTIER — IN — PAEDIATRIC INFECTION

Strategies for Indian Clinicians

Edition 1



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Diagnostics Frontier in Paediatric Infection

Strategies for Indian Clinicians



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First Edition

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Title of the Book: Diagnostics Frontier in Paediatric Infection Strategies for Indian Clinicians

First Edition – 2026

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E-ISBN: 978-93-7020-976-3

MRP Rs. 220/-

Publisher, Printer & Distributor:

Selfypage Developers Pvt Ltd.,
Pushpagiri Complex,
Beside SBI Housing Board,
K.M. Road Chikkamagaluru, Karnataka.
Tel.: +91-8861518868
E-mail: info@iipbooks.com

IMPRINT: IIP Iterative International Publishers

For Sales Enquiries:

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Foreword

It is a privilege to write this foreword for *Diagnostics Frontier in Paediatric Infection Strategies for Indian Clinicians*. As a microbiologist committed to advancing infectious disease care in India, I find this textbook both timely and highly relevant.

This work effectively bridges microbiological science with practical paediatric care, addressing challenges unique to Indian settings. It spans key areas including epidemiology, diagnostics, emerging infections, antimicrobial resistance, and special clinical scenarios such as neonatal sepsis and immunocompromised hosts. The content is evidence-based, aligned with IAP guidelines, and grounded in real-world clinical practice.

Under the leadership of Editor-in-Chief Dr. Lakshmi Jyothi Tadi, along with Co-Editors Dr. Ramakrishna Pai J and Dr. A. Jayavardhana, this book reflects strong academic collaboration. The contributions of Lead Author Dr. Aadam Najeeb and co-authors, including Dr. R. Someshwaran and colleagues, bring both depth and practical insight.

In an era of evolving infectious threats and resource constraints, this textbook serves as a valuable guide for clinicians—not only to diagnose and treat but also to anticipate and prevent infections, ultimately improving child health outcomes.

I strongly recommend this book to paediatricians, microbiologists, and healthcare professionals across India.



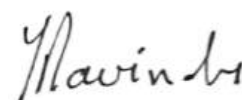
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Preface

Paediatricians encounter many challenges in the management of neonatal and childhood diseases. The scenario becomes more complex when dealing with paediatric infections. “Early Diagnosis Saves Lives”. Clinicians entail the support of Microbiologists to enhance clinical decision making and initiate appropriate treatment to prevent complications and mortality. Navigating the complexities of paediatric infections requires precision and insight. This book delves into the latest diagnostic frontiers, equipping clinicians with cutting-edge tools to tackle paediatric infections effectively.

This book is a unique blend of expertise from Paediatricians and Clinical Microbiologists, offering basic concepts of Paediatric infections, Infection control, Diagnostic and Antibiotic Stewardship. It also deals with system-based infections, vector borne infections and sepsis. Importance is given to Indian disease patterns, diagnostic algorithms for resource limited settings, infections in special situations and their prevention. Current concepts of infections related to climate change and the role of Artificial Intelligence tools in diagnosing paediatric infections are also included. I appreciate the dedicated efforts of the authors and editors for providing effective strategies to diagnose paediatric infections particularly in the Indian context.

Best wishes for Happy Learning.



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About Editor-in-Chief

Dr. Lakshmi Jyothi Tadi, MBBS MD is Additional Professor in the Department of Microbiology at AIIMS Bibinagar, India.

She has extensive experience in clinical microbiology, antimicrobial resistance, and infection control. She is actively involved in academic teaching, postgraduate training, and research in infectious diseases.

As Editor-in-Chief, she has guided the book toward integrating microbiological evidence with practical paediatric clinical care.



Dr. Lakshmi Jyothi Tadi
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About Co-Editor

Dr. Ramakrishna Pai J, MBBS, MD, MBA, PDCR, CPHIC, is Additional Professor of Microbiology and Nodal Officer (CSSD) at AIIMS Mangalagiri, India.

His areas of interest include hospital infection control — particularly sterilisation and disinfection — quality systems, diagnostics, biosafety and biosecurity in the mycobacteriology section, and overall healthcare safety practices. He has actively contributed to implementing and strengthening CSSD procedures and protocols in hospital settings.

His editorial contribution to this book emphasizes practical laboratory and hospital-based diagnostic protocols, ensuring applicability to real-world clinical and infection-control practice.



A handwritten signature in blue ink, appearing to be 'RKP', with a horizontal line underneath it.

Dr. Ramakrishna Pai J.
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About Co-Editor

Dr. A. Jayavardhana, MBBS MD is Professor and Head, Department of Paediatrics, PSG Institute of Medical Sciences & Research, Coimbatore, India.

He has extensive clinical experience in paediatric medicine with special focus on infectious diseases and critical care. He has trained numerous undergraduate and postgraduate medical students and promotes rational clinical evaluation in paediatric practice.

His contribution ensures the book remains clinically relevant to practising paediatricians.

A handwritten signature in blue ink, appearing to read 'Jayavardhana'.

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Acknowledgement

The successful completion of *Diagnostics Frontier in Paediatric Infection Strategies for Indian Clinicians* is the result of a remarkable collective effort marked by intellectual generosity, clinical wisdom, and an unwavering commitment to advancing child health in India. This book would not have been possible without the dedicated contributions of every individual who poured their expertise, time, and passion into its creation.

We are deeply grateful to the Editorial Team for their visionary leadership, meticulous guidance, and tireless coordination that unified diverse perspectives into a cohesive and practical resource.

Our heartfelt thanks go to the all Authors and Chapter Contributors whose scholarly depth, clinical insights, and innovative ideas have enriched every chapter, transforming complex microbiological and paediatric concepts into actionable strategies for Indian clinicians.

We sincerely appreciate the peer reviewers for their critical and constructive feedback, which significantly strengthened the scientific rigor, clarity, and clinical relevance of the manuscript.

We extend our gratitude to the publishing team for their professionalism, attention to detail, and seamless support throughout the production process.

We also acknowledge the academic institutions that provided the supportive environment for research, discussion, and refinement of ideas that now fill these pages.

On a personal note, we thank the families and loved ones of everyone involved for their patience, understanding, and encouragement during the many late nights and demanding deadlines.

Above all, this book is dedicated to the countless children and families across India who face the daily burden of infectious diseases. It is our sincere hope that this collective work will equip clinicians with the knowledge and tools to reduce suffering, improve outcomes, and build a healthier future for the next generation.

With deep appreciation and respect,

The Editorial Team

Diagnostics Frontier in Paediatric Infection Strategies for Indian Clinicians

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ABOUT THE BOOK

Diagnostics Frontier in Paediatric Infection: Strategies for Indian Clinicians Edition 1 is a practical, clinically oriented guide designed to help paediatricians and clinicians diagnose and manage childhood infections in real-world settings.

The book integrates:

- Indian epidemiology
- Diagnostic algorithms
- Antimicrobial stewardship
- Emerging infections
- Resource-appropriate investigations

It provides case-based discussions, flowcharts, and point-of-care approaches that help clinicians move beyond theory to bedside decision-making.

Special emphasis is placed on rational testing, avoiding over-treatment, and tackling antimicrobial resistance key challenges in modern paediatric practice.

This textbook serves as a bridge between microbiology laboratory data and clinical management, making it valuable for paediatricians, residents, microbiologists, and general practitioners.

ABOUT AUTHORS

The Authors and Editors are experienced paediatricians, microbiologists, and medical educators from premier institutions, including AIIMS and PSG Institute of Medical Sciences & Research. With expertise in clinical care, laboratory diagnostics, infection control, and medical education, they provide practical insights tailored to Indian healthcare settings, supporting clinicians in making accurate, timely, and evidence-based decisions in the management



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E-ISBN: 978-93-7020-976-3



9 789370 209763

MRP Rs. 220/-



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