

# Pediatric and Neonatal Mechanical Ventilation

Second Edition

**Praveen Khilnani** MD FAAP FCCM (USA)  
Senior Consultant and Incharge  
Pediatric Intensivist and Pulmonologist  
Max Hospitals, New Delhi, India

*Foreword*

**RN Srivastav**

LIBRARY  
TECHNICAL RESOURCES CENTER  
GREENVILLE TECHNICAL COLLEGE  
P. O. BOX 5616  
GREENVILLE, S. C. 29606-5616



**JAYPEE BROTHERS MEDICAL PUBLISHERS (P) LTD**

New Delhi • St Louis • Panama City • London

**DOCKET  
ALARM**

Find authenticat

Mallinckrodt Hosp. Prods. IP Ltd.  
Exhibit 2029  
Praxair Distrib., Inc. et al., v. Mallinckrodt Hosp. Prods. IP Ltd.  
Case IPR2016-00780

[www.jaypee.com](http://www.jaypee.com)

Published by

**Jaypee Brothers Medical Publishers (P) Ltd**

**Corporate Office**

4838/24, Ansari Road, Daryaganj, New Delhi 110 002, India  
Phone: +91-11-43574357, Fax: +91-11-43574314

**Offices in India**

- **Ahmedabad**, e-mail: ahmedabad@jaypeebrothers.com
- **Bengaluru**, e-mail: bangalore@jaypeebrothers.com
- **Chennai**, e-mail: chennai@jaypeebrothers.com
- **Delhi**, e-mail: jaypee@jaypeebrothers.com
- **Hyderabad**, e-mail: hyderabad@jaypeebrothers.com
- **Kochi**, e-mail: kochi@jaypeebrothers.com
- **Kolkata**, e-mail: kolkata@jaypeebrothers.com
- **Lucknow**, e-mail: lucknow@jaypeebrothers.com
- **Mumbai**, e-mail: mumbai@jaypeebrothers.com
- **Nagpur**, e-mail: nagpur@jaypeebrothers.com

**Overseas Offices**

- **North America Office, USA**, Ph: 001-636-6279734  
e-mail: jaypee@jaypeebrothers.com, anjulav@jaypeebrothers.com
- **Central America Office, Panama City, Panama**, Ph: 001-507-317-0160  
e-mail: cservice@jphmedical.com, Website: www.jphmedical.com
- **Europe Office, UK**, Ph: +44 (0) 2031708910  
e-mail: info@jpmedpub.com

**Pediatric and Neonatal Mechanical Ventilation**

© 2011, Jaypee Brothers Medical Publishers

All rights reserved. No part of this publication and DVD-ROM should be reproduced, stored in a retrieval system, or transmitted in any form or by any means: electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the editor and the publisher.

This book has been published in good faith that the material provided by contributors is original. Every effort is made to ensure accuracy of material, but the publisher, printer and editor will not be held responsible for any inadvertent error(s). In case of any dispute, all legal matters are to be settled under Delhi jurisdiction only.

*First Edition: 2006*

*Second Edition: 2011*

ISBN 978-93-5025-245-1

*Typeset at JPBMP typesetting unit*

*Printed at Rajkamal Electric Press, Plot No. 2, Phase-IV, Kundli, Haryana.*

*Dedicated to  
my mother  
Late Shrimati Laxmi Devi Khilnani  
who left for heavenly abode on 13th May, 2001.  
She always knew I could do it whenever I thought I couldn't.  
She was the one who taught me to be always optimistic and hardworking.  
God will take care of the rest.*



*Late Smt Laxmi Devi Khilnani  
(19th Jan, 1930 – 13th May, 2001)*

## Contributors

**Jeffrey C Benson**  
Pediatric Intensivist  
Children's Hospital of Wisconsin  
Wisconsin, Michigan, USA

**Satish Deopujari**  
Consultant Pediatric Intensivist  
Child Hospital  
Nagpur, Maharashtra, India

**Garima Garg**  
PICU Fellow  
Max Superspeciality Hospital  
New Delhi, India

**Shipra Gulati**  
PICU Fellow  
Max Superspeciality Hospital  
New Delhi, India

**Praveen Khilnani**  
Senior Consultant and Incharge  
Pediatric Intensivist and  
Pulmonologist, Max Hospitals  
New Delhi, India

**Sankaran Krishnan**  
Pediatric Pulmonologist  
Cornell University  
New York, USA

**Anjali A Kulkarni**  
Senior Consultant Neonatologist  
IP Apollo Hospitals  
New Delhi, India

**Veena Raghunathan**  
PICU Fellow  
Sir Ganga Ram Hospital  
New Delhi, India

**Meera Ramakrishnan**  
Sr Consultant Incharge PICU  
Manipal Hospital  
Bengaluru, Karnataka, India

**S Ramesh**  
Pediatric Anesthesiologist  
KK Child Trust Hospital  
Chennai, Tamil Nadu, India

**Suchitra Ranjit**  
Incharge PICU  
Apollo Childrens Hospital  
Chennai, Tamil Nadu, India

**Reeta Singh**  
Consultant Pediatrics  
Sydney, Australia

**Anil Sachdev**  
Senior Consultant PICU  
Sir Ganga Ram Hospital  
New Delhi, India

**Ramesh Sachdeva**  
Pediatric Intensivist  
Vice President  
Children's Hospital of Wisconsin  
Wisconsin, Michigan, USA

viii

**Deepika Singhal**  
Consultant Pediatric Intensivist  
Pushpanjali Crosslay Hospital  
Ghaziabad, Uttar Pradesh, India

**Rajiv Uttam**  
Senior Consultant  
Pediatric Intensivist  
Dr BL Kapoor Memorial Hospital  
New Delhi, India

Pediatric and Neonatal Mechanical Ventilation

**Nitesh Singhal**  
Consultant  
Pediatric Intensivist  
Max Superspeciality Hospital  
New Delhi, India

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.