

**NICU Primer for Pharmacists**

Holmes AP. ASHP Publications, Bethesda, Maryland, 2015. ISBN 978-1-58528-477-1. Softcover, 250 pages. US\$43 for ASHP members (\$48 for nonmembers).

*NICU Primer for Pharmacists* is an introductory guide to neonatal care, written for practitioners with no prior exposure to the neonatal intensive care unit (NICU). The book's aims are to introduce NICU practice, beyond simply checking for the accuracy of weight-based dosing, and to provide baseline information that will allow readers to better understand the primary literature.

These objectives are successfully achieved through 18 chapters. Chapter 1 covers general NICU considerations and familiarizes readers with the language used in neonatal medicine. Concepts in neonatal pharmacology, pharmacokinetics, and pharmacodynamics are described in Chapter 2. Chapter 3 outlines parenteral nutrition, including components and complications of its use. Chapter 4 describes considerations when assessing the risks of medication transfer into breast milk. The remaining 14 chapters discuss common neonatal conditions and practices: neonatal abstinence syndrome, apnea of prematurity, respiratory distress syndrome and bronchopulmonary dysplasia, patent ductus arteriosus, pain and sedation, bacterial sepsis and meningitis, congenital infections, respiratory syncytial virus, necrotizing enterocolitis, gastrointestinal reflux and constipation, vaccines, persistent pulmonary hypertension of the newborn, seizures, and extracorporeal membrane oxygenation (ECMO).

The book's contributors are 9 US-based pharmacists, a PharmD candidate, and a postgraduate year 1 (PGY1) resident. It is apparent that the authors' priority was to write a quick reference guide. Notable features include clear language; concise, easily readable chapters with content that is supported by references; an index of "Common Abbreviations in Neonatal Medicine"; and suggested readings at the end of each chapter.

Improvements in organization could make the book better. Some of the disease state-related chapters are systematic about presenting information under the same headings (e.g., epidemiology, pathophysiology, presentation), but others are not. This variability can make it difficult to find information quickly and could be resolved if all disease-related chapters followed the same template. With the exception of chapters 1 and 2, the book's

chapters can be seen as independent units that do not need to be read sequentially to be understood. This allows for rapid and targeted reading but may also prevent readers from recognizing that related content can appear in multiple chapters. For example, developmental pharmacokinetics is discussed in chapter 2, but unless readers check the book's index, they are not alerted to important discussions about pharmacokinetics in the critically ill neonate in chapter 9 or pharmacokinetics in neonates who are receiving ECMO therapy in chapter 18. Increased usage of illustrations, flow diagrams, and summary tables with "key messages" would have been helpful for visualizing concepts. It would also have been valuable if each disease-related chapter had clearly marked sections for common drug therapy problems or pitfalls in pharmacotherapy. This would help new NICU practitioners appreciate what to look for when caring for neonates and where their help as medication experts might be needed by the medical team. This information is present in the book, but is interspersed throughout the text.

This well-written book is suitable for pharmacy learners and pharmacists with no prior experience in the NICU. Practitioners with NICU experience will need to seek alternative references for more detailed information.

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