

DISCLOSURE OF POTENTIAL CONFLICTS OF INTEREST

Consultancies: Jeffrey J. Cies (Atlantic Diagnostic Laboratories)

Stock Ownership: Jennifer Young (Pfizer)

Royalties:

Grants: Jeffrey J. Cies (Thermo Fisher Scientific; Merck; Allergan); David E. Procaccini (Grifols Pharmaceutical)

Honoraria: Jeffrey J. Cies (Thermo Fisher); Keliana O'Mara (Vygon)

Other: Brady S. Moffett (employed by Novartis)

Nothing to disclose: Renad Abu-Sawwa; Megan Allen; Laura L. Bio; Deborah S. Bondi; Brian K. Brown; Kelli Lee Crowley; Jennifer Eshelman; Karen Gradischer; Aaron Harthan; Peter N. Johnson; Michael A. Lahart; Maida Lawrence; Jennifer L. Morris; Jeffrey Moss; Hong Ton Nguyen; Lucas E. Orth; Jenna R. Pacheco Bowen; Kristine A. Parbuoni; Karla V. Resendiz; Emma L. Ross; Emily Rowe; Cassandra Ann Ruggles; Miranda Sahrhage; Dimitrios A. Savva; Lindsay Schray; Gideon Stitt

ACCP Staff/Series Leader Disclosures

Nothing to disclose: Edward Alderman; Peter Burns; Joanna Gillette; Joseph M. LaRochelle; Bernard R. Lee; Kirsten H. Ohler; Brent Paloutzian; Kimma Sheldon-Old; Keri A. Sims

Note: All relevant financial relationships listed for these individuals have been mitigated.

ROLE OF BPS: The Board of Pharmacy Specialties (BPS) is an autonomous division of the American Pharmacists Association (APhA). To maintain its strict, independent standards for certification, BPS does NOT endorse or provide review information, preparatory courses, or study guides for Board Certification Examinations. The Board, through its specialty councils, is responsible for specialty examination content, administration, scoring, and all other aspects of its certification programs. BPS is totally separate and distinct from ACCP. PedSAP has been approved by BPS for use in BCPPS recertification. Information about the BPS recertification process is available [online](#).

Questions regarding BCPPS recertification should be directed to:

[Board of Pharmacy Specialties](#)

2215 Constitution Avenue NW

Washington, DC 20037

(202) 429-7591

Critical Care I Panel

Series Editors:

Bernard R. Lee, Pharm.D., BCPS, BCPPS

Clinical Pharmacist
Department of Pharmacy
Mease Countryside Hospital
BayCare Health System
Safety Harbor, Florida

Kirsten H. Ohler, Pharm.D., FCCP, BCPS, BCPPS

*Clinical Associate Professor, Pharmacy Practice
Program Director, PGY1 Pharmacy Residency
Clinical Pharmacist, NICU/Pediatrics*
University of Illinois at Chicago College of Pharmacy
University of Illinois Hospital & Health Sciences System
Chicago, Illinois

Faculty Panel Chair:

Joseph M. LaRochelle, Pharm.D., FCCP, BCPPS

*Coleman Endowed Professor of Pharmacy
Practice and Vice Chair*
Division of Clinical and Administrative Sciences,
Xavier University of Louisiana College of Pharmacy
Clinical Professor
Louisiana State University Health Sciences
Center School of Medicine
New Orleans, Louisiana

Inhalation Lung Injuries

Author

Karla V. Resendiz, Pharm.D., BCPPS, BCCCP

Clinical Pharmacy Specialist
Department of Pharmacy Services
Children's Hospital of Philadelphia
Philadelphia, Pennsylvania

Reviewers

Gideon Stitt, Pharm.D., BCPPS, BCCCP

Post-Doctoral Research Fellow
Center for Clinical Pharmacy
Children's Hospital of Philadelphia
Philadelphia, Pennsylvania

Karen Gradischer, Pharm.D., BCPPS

Pediatric Clinical Pharmacist
Department of Pharmacy
Connecticut Children's
Hartford, Connecticut

Therapeutic Hypothermia

Author

Megan Allen, Pharm.D., BCPS, BCPPS

Clinical Pharmacy Specialist—Pediatrics
Department of Pharmacy
AdventHealth Tampa
Tampa, Florida

Reviewers

Emma L. Ross, Pharm.D., BCPPS

Clinical Pharmacy Specialist
Department of Pharmacy
Children's Hospital Colorado
Aurora, Colorado

Jennifer Young, Pharm.D., BCPPS

Clinical Pharmacy Specialist
Department of Pharmacy
St. Louis Children's Hospital
St. Louis, Missouri

Critical Care II Panel

Series Editors:

Bernard R. Lee, Pharm.D., BCPS, BCPPS

Clinical Pharmacist
Department of Pharmacy
Mease Countryside Hospital
BayCare Health System
Safety Harbor, Florida

Kirsten H. Ohler, Pharm.D., FCCP, BCPS, BCPPS

*Clinical Associate Professor, Pharmacy Practice
Program Director, PGY1 Pharmacy Residency
Clinical Pharmacist, NICU/Pediatrics*
University of Illinois at Chicago College of Pharmacy
University of Illinois Hospital & Health Sciences System
Chicago, Illinois

Faculty Panel Chair:

Joseph M. LaRochelle, Pharm.D., FCCP, BCPPS

*Coleman Endowed Professor of Pharmacy
Practice and Vice Chair*
Division of Clinical and Administrative Sciences,
Xavier University of Louisiana College of Pharmacy
Clinical Professor
Louisiana State University Health Sciences
Center School of Medicine
New Orleans, Louisiana

Pediatric Sepsis

Author

Aaron Harthan, Pharm.D., BCPPS

Lead Pediatric Critical Care Pharmacist
Department of Clinical Pharmacy
OSF Healthcare Children's Hospital of IL
Peoria, Illinois

Reviewers

Miranda Sahrhage, Pharm.D., BCPPS

Pediatric Clinical Pharmacy Specialist
Department of Pharmacy
St. Louis Children's Hospital
St. Louis, Missouri

Maida Lawrence, Pharm.D., BCPPS

Pediatric Clinical Pharmacist
Department of Pharmacy
St. Joseph's Children's Hospital, BayCare Health System
Tampa, Florida

Acute Pulmonary Hypertension

Author

Michael A. Lahart, Pharm.D., MBA, BCPPS

Clinical Pharmacy Specialist
Department of Pharmacy
St. Louis Children's Hospital
St. Louis, Missouri

Reviewers

David E. Procaccini, Pharm.D., MPH, BCPS, BCPPS, CACP, CPHQ

*Clinical Pharmacy Specialist, Pediatric Cardiac
Intensive Care & Heart Transplant*
Department of Pharmacy
The Johns Hopkins Hospital
Baltimore, Maryland

Jennifer Eshelman, Pharm.D., BCPPS

Pediatric Pharmacy Supervisor
Department of Pharmacy
Sacred Heart Medical Center & Children's Hospital
Spokane, Washington

The American College of Clinical Pharmacy thanks Brady S. Moffett for his contribution to the Acute Pulmonary Hypertension chapter. Dr. Moffett's contribution to the chapter took place before his employment with Novartis.

Critical Care III Panel

Series Editors:

Bernard R. Lee, Pharm.D., BCPS, BCPPS

Clinical Pharmacist
Department of Pharmacy
Mease Countryside Hospital
BayCare Health System
Safety Harbor, Florida

Kirsten H. Ohler, Pharm.D., FCCP, BCPS, BCPPS

*Clinical Associate Professor, Pharmacy Practice
Program Director, PGY1 Pharmacy Residency
Clinical Pharmacist, NICU/Pediatrics*
University of Illinois at Chicago College of Pharmacy
University of Illinois Hospital & Health Sciences System
Chicago, Illinois

Faculty Panel Chair:

Joseph M. LaRochelle, Pharm.D., FCCP, BCPPS

*Coleman Endowed Professor of Pharmacy Practice
and Vice Chair*
Division of Clinical and Administrative Sciences,
Xavier University of Louisiana College of Pharmacy
Clinical Professor
Louisiana State University Health Sciences Center
School of Medicine
New Orleans, Louisiana

ICU Psychosis and Delirium

Author

Peter N. Johnson, Pharm.D., FPPA, FCCM, FASHP, BCPPS

Professor and President's Associate Presidential Professor
Department of Pharmacy: Clinical and
Administrative Sciences
University of Oklahoma College of Pharmacy
Oklahoma City, Oklahoma

Reviewers

Emily Rowe, Pharm.D., MS, BCPPS, BCPS

Senior Clinical Pharmacy Specialist
Department of Pharmacy
Tufts Medical Center
Boston, Massachusetts

Renad Abu-Sawwa, Pharm.D., BCPPS

Clinical Assistant Professor
College of Pharmacy
University of Florida
Gainesville, Florida

Iatrogenic Withdrawal Syndromes

Author

Jenna R. Pacheco Bowen, Pharm.D., BCPPS

Senior Clinical Pharmacy Specialist
Department of Pharmacy
Tufts Medical Center
Boston, Massachusetts

Lucas E. Orth, Pharm.D., BCPPS

Assistant Professor of Pharmacy
Department of Clinical Pharmacy
University of Colorado Skaggs School of
Pharmacy and Pharmaceutical Sciences
Aurora, Colorado

Reviewers

Kristine A. Parbuoni, Pharm.D., BCPPS

Associate Professor
Department of Pharmacy Practice and Science
University of Maryland School of Pharmacy
Baltimore, Maryland

Hong Ton Nguyen, Pharm.D., BCPPS

Clinical Pharmacist
Department of Pharmacy
Medical City Hospital of Dallas/Medical City
Children's Hospital
Dallas, Texas

Critical Care IV Panel

Series Editors:

Bernard R. Lee, Pharm.D., BCPS, BCPPS

Clinical Pharmacist
Department of Pharmacy
Mease Countryside Hospital
BayCare Health System
Safety Harbor, Florida

Kirsten H. Ohler, Pharm.D., FCCP, BCPS, BCPPS

*Clinical Associate Professor, Pharmacy Practice
Program Director, PGY1 Pharmacy Residency
Clinical Pharmacist, NICU/Pediatrics*
University of Illinois at Chicago College of Pharmacy
University of Illinois Hospital & Health Sciences System
Chicago, Illinois

Faculty Panel Chair:

Joseph M. LaRochelle, Pharm.D., FCCP, BCPPS

*Coleman Endowed Professor of Pharmacy Practice
and Vice Chair*
Division of Clinical and Administrative Sciences,
Xavier University of Louisiana College of Pharmacy
Clinical Professor
Louisiana State University Health Sciences
Center School of Medicine
New Orleans, Louisiana

Interactive Case: Neonatal Sepsis Calculators

Author

Keliana O'Mara, Pharm.D.

NICU Clinical Pharmacist Specialist
Department of Pharmacy
WakeMed Health and Hospitals
Raleigh, North Carolina

Reviewers

Deborah S. Bondi, Pharm.D., FCCP, BCPS, BCPPS

*Pediatric Clinical Coordinator and NICU
Clinical Pharmacy Specialist*
Department of Pharmacy
University of Chicago Medicine, Comer Children's Hospital
Chicago, Illinois

Dimitrios A. Savva, Pharm.D., BCPPS

Clinical Pharmacy Manager—Pediatric Critical Care
Department of Pharmacy
NewYork-Presbyterian Hospital/Morgan Stanley
Children's Hospital
New York, New York

Recorded Webcast: Antimicrobial Dosing in the PICU

Author

Jeffrey J. Cies, Pharm.D., MPH, FCCP, FCCM, FPPA, BCPS-AQ ID, BCPPS

*Pharmacy Clinical Coordinator, Critical Care and
Infectious Diseases Clinical Pharmacist*
Department of Pharmacy
St. Christopher's Hospital for Children
Philadelphia, Pennsylvania

Reviewers

Laura L. Bio, Pharm.D., BCPS, BCIDP

*Clinical Pharmacy Specialist, Antimicrobial Stewardship
Program Director, PGY2 Infectious Diseases*
Department of Pharmacy
Lucille Packard Children's Hospital Stanford
Palo Alto, California

Lindsay Schray, Pharm.D., BCPPS

Clinical Pharmacy Specialist—Neonatal Intensive Care
Department of Pharmacy
Spectrum Health Helen DeVos Children's Hospital
Grand Rapids, Michigan

Kelli Lee Crowley, Pharm.D., BCPS, BCPPS

Clinical Pharmacist, Pediatric Critical Care
Pharmacy Department
UPMC Children's Hospital of Pittsburgh
Pittsburgh, Pennsylvania

Interactive Case: Complex Acid-Base Disorders in Critical Care

Author

Jennifer L. Morris, Pharm.D., FCCM, BCPPS

*Clinical Pharmacy Specialist—Transitional
Intensive Care and Chronic Dialysis Program*
Department of Pharmacy
Texas Children's Hospital
Houston, Texas

Reviewers

Jeffrey Moss, Pharm.D., BCCCP

Clinical Specialist Pharmacist
Department of Pharmacy
Lucile Packard Children's Hospital Stanford
Palo Alto, California

Brian K. Brown, Pharm.D., BCPS, BCPPS

Pediatric/Women and Infants Clinical Pharmacist
Department of Pharmacy
Tampa General Hospital
Tampa, Florida

Cassandra Ann Ruggles, Pharm.D., BCPPS, BCCCP

Pharmacy Clinical Coordinator Pediatric Intensive Care Unit
Department of Pharmacy
Akron Children's Hospital
Akron, Ohio