

# Neonatal Pharmacology Conference 2019: Incorporating Evidence-Based Practice into Clinical Decision Making



**November 13–15, 2019**  
Francis Marion Hotel  
Charleston, South Carolina

Presented by the Medical University of South Carolina  
Neonatal Nurse Practitioner Team, Division of Neonatology,  
and the Office of Continuing Medical Education

Neonatal Pharmacology Conference 2019:  
Incorporating Evidence-Based  
Practice into Clinical  
Decision Making



Office of Continuing Medical Education  
96 Jonathan Lucas Street, HE 221A  
MSC 754  
Charleston, SC 29425



# Neonatal Pharmacology Conference 2019: Incorporating Evidence-Based Practice into Clinical Decision Making

## COURSE FACULTY

### David Annibale, M.D.

Professor, Department of Pediatrics  
Director, Division of Pediatric Neonatology  
Medical University of South Carolina  
Charleston, SC

### Kristy L. Brittain, Pharm.D., BCPS, CDE

Associate Professor, South Carolina College of Pharmacy  
Clinical Pharmacy and Outcome Sciences  
Clinical Pharmacy Specialist, Medical University of South Carolina  
Residency Program Director, Ambulatory Care  
Charleston, SC

### David Bundy, M.D.

Professor, Department of Pediatrics  
Chief Patient Safety Officer, MUSC Health  
Medical University of South Carolina  
Charleston, SC

### Brian Carter, M.D.

Sirridge Professor of Medical Humanities & Bioethics  
UMKC School of Medicine  
Professor of Pediatrics (Neonatology & Fetal Health)  
Co-Director, Pediatric Bioethics Certificate Course  
Children's Mercy Bioethics Center  
Kansas City, MO

### Brittany Carter, MHA, RRT-NPS

ECMO Specialist, Pediatric Respiratory Department  
Medical University of South Carolina  
Charleston, SC

### Reese H. Clark, M.D.

Vice President of Clinical Research  
MEDNAX Inc  
Clinical Professor of Pediatrics  
USC Greenville School of Medicine  
Greenville, SC

### Toby Cox, PharmD

Clinical Specialist, Pediatrics/Neonatology  
Clinical Assistant Professor  
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Charleston, SC

### Ryan Cuff, M.D.

Assistant Professor  
Department of OB/GYN  
Division of Maternal-Fetal Medicine  
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Charleston, SC

### Sandeep Kuril, M.D.

Assistant Professor, Department of Pediatrics  
Division of Pediatric Hematology-Oncology  
Medical University of South Carolina  
Charleston, SC

### Heidi Murphy, M.D.

Assistant Professor of Pediatrics  
Division of Neonatal-Perinatal Medicine  
Medical University of South Carolina  
Charleston, SC

### Henry Rohrs, M.D.

Clinical Associate Professor, Pediatric Endocrinology  
Associate Director, Pediatric Residency Program  
University of Florida  
Gainesville, FL

### Rita Ryan, M.D.

Professor, Department of Pediatrics  
Division of Neonatal-Perinatal Medicine  
Medical University of South Carolina  
Charleston, SC

### Thomas H. Shaffer, M.S.E., Ph.D.

Professor of Physiology and Pediatrics  
Lewis Katz School of Medicine at Temple University  
Professor of Pediatrics  
Sidney Kimmel Medical College at Thomas Jefferson University  
Director, Center for Pediatric Research  
Director, Pediatric Lung Research  
Associate Director of Biomedical Research  
Alfred I. duPont Hospital for Children  
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### Alanna Shiflett, APRN, MSN, NNP-BC

Neonatal Nurse Practitioner  
Medical University of South Carolina  
Charleston, SC

### Sarah N. Taylor, M.D., MSCR

Associate Professor of Pediatrics  
Yale School of Medicine  
New Haven, CT

### Katherine Vincent, APRN, MSN, NNP-BC

Neonatal Nurse Practitioner  
Medical University of South Carolina  
Charleston, SC



## CONFERENCE DESCRIPTION

The need for evidenced-based practice in neonatology is increasingly important as clinical decisions and treatments are made. The conference is designed to help NICU professionals including physicians, nurse practitioners, nurse managers and experienced staff nurses make those decisions. The goal of the conference is to share evidence based approaches in the care of the neonate.

## LEARNING OBJECTIVES

At the completion of this conference you should be able to achieve the objectives listed under each topic. The conference will be presented in lecture format with question and answer sessions.

## REGISTRATION FEES

|   | Early | Regular | One Day |
|---|-------|---------|---------|
| NP, RN, & Other<br>Healthcare Professionals | \$450 | \$500   | \$200   |
| Physicians                                  | \$490 | \$540   | \$275   |
| Printed Syllabus                            | \$40  | \$40    | \$40    |

Early registration fees apply if registration is received on or before August 16, 2019.

Fee includes tuition, breaks, and certificates of attendance.

Please make your check payable to Medical University of South Carolina and mail with the registration form included in this brochure to: Elizabeth Gossen, MUSC Office of CME, 96 Jonathan Lucas Street, HE221A, MSC 754, Charleston, SC 29425.

Pre-Registrations will be accepted until November 9, 2019 **or until conference capacity is reached**. After November 9, 2019, call the MUSC Office of CME at 843-876-1925 to see if space is still available. If space is still available you may be directed to register at the conference.

## REGISTRATION METHODS

*(Please use ONE of these methods to register. Do not mail if previously faxed or telephoned).*

- **Mail** registration form with check made out to "Medical University of South Carolina" or credit card information to:  
Elizabeth Gossen, Office of CME, Medical University of South Carolina,  
96 Jonathan Lucas Street, HE 221A, MSC 754, Charleston, SC, 29425
- **Telephone:** (843) 876-1925 – Registration by credit card only
- **Fax:** (843) 876-1931 – Registration by credit card only
- **Online:** Visit [www.musc.edu/cme](http://www.musc.edu/cme) and select "CME Conferences" on the left hand side, then scroll down to find this activity, select the blue "Register" button, and follow directions as prompted.

## CREDIT DESIGNATION

The Medical University of South Carolina designates this live activity for a maximum of **20.00 AMA PRA Category 1 Credit(s)**<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.



**Nursing Credit:** This activity has been submitted to the South Carolina Nurses Association for approval to award contact hours. The South Carolina Nurses Association is accredited as an approver of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

**Advanced Practice Registered Nurses:** This continuing education activity awards a total of **20.00 PH** (pharmacology hours). Hours for controlled substances are 2.0.

## ACCREDITATION

The Medical University of South Carolina College of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

## DISCLOSURE STATEMENTS

In accordance with the ACCME Essentials & Standards, anyone involved in planning, presenting or moderating at this educational activity will be required to disclose any relevant financial relationships with commercial interests in the health care industry. This information will be made available to participants at the beginning of the activity. Speakers who incorporate information about off-label or investigational use of drugs or devices will be required to disclose that information at the beginning of their presentation.

## ANNUAL MEETING OF THE SOUTH CAROLINA NEONATAL MEDICINE CONSORTIUM

On **Thursday, November 14, 2019** (following the conclusion of that day's meeting), there will be the Annual Meeting of South Carolina Neonatal Medicine Consortium. This meeting will run from 2:00-6:00 pm and is open to any providers from a South Carolina Level II or Level III Medical Center. There is no extra charge to attend this meeting.

The Medical University of South Carolina designates this live activity for a maximum of **2.0 AMA PRA Category 1 Credit(s)**<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**Nursing Credit:** Most states accept CMEs that apply to a specific nursing specialty as nursing continuing education. Please check with your respective State Board of Nursing to ascertain the equivalent number of contact hours offered for **2.0 AMA PRA Category 1 Credit(s)**<sup>™</sup>.

To RSVP for the Annual Meeting of South Carolina Neonatal Medicine Consortium, please see the SC Consortium section on the registration form.



# Neonatal Pharmacology Conference 2019: Incorporating Evidence-Based Practice into Clinical Decision Making

**COURSE AGENDA** *At the end of each presentation, learners should be better able to achieve the respective objectives stated.*

## Wednesday, November 13, 2019

- 7:00 am **Registration/Breakfast/Exhibits**
- 7:30 **Neonatal Medication Safety: Implementing Safe Systems for the Small, Smaller, and Smallest Patients**, *David Bundy, M.D.*  
Describe the epidemiology and key drivers of medication-related harm in neonates; Compare the effectiveness of individual- and system-focused approaches to neonatal medication safety; Predict how electronic health records can both contribute to and compromise neonatal patient safety; Apply at least one new medication safety strategy in their nurseries.
- 8:30 **Neonatal Sepsis: Understanding and Implementing the New Guidelines**, *Heidi Murphy, M.D.*  
Describe the epidemiology of neonatal early-onset sepsis; Describe the risk factors for neonatal early-onset sepsis; Apply new guidelines for suspected or confirmed early-onset bacterial sepsis in the management of neonates born at  $\geq 35$  weeks' gestation; Apply new guidelines for suspected or confirmed early-onset bacterial sepsis in the management of neonates born at  $\leq 34$  weeks' gestation
- 9:30 **Break/Exhibits**
- 10:00 **Keepin' It Renal: Nephrotoxic Acute Kidney Injury**, *Katherine Vincent, NNP*  
Describe the pathophysiology of acute kidney injury; Recognize nephrotoxic medications and understand how they cause acute kidney injury; Identify laboratory and imaging studies needed to diagnose acute kidney injury; Explain long term effects of nephrotoxic acute kidney injury
- 11:00 **Medications for the Prevention of Bronchopulmonary Dysplasia (BPD)**, *Rita Ryan, M.D.*  
Recognize the choices of medications for the prevention of BPD
- 12:00 pm **Lunch (on your own)**
- 1:15 **Aerosol Surfactant Delivery**, *Rita Ryan, M.D.*  
Realize surfactant can be delivered by aerosol now
- 2:15 **Non-Invasive Ventilation**, *Thomas Shaffer, M.S.E., Ph.D.*  
Provide an overview of respiratory support for the preterm infant; Characterize the complexity of prematurity and respiratory support; Provide an overview of the transition from invasive mechanical ventilation support to non-invasive respiratory support; Characterize the types of non-invasive respiratory support; Provide a rationale for what works when
- 3:15 **Break/Exhibits**
- 3:45 **Liquid Ventilation: From Concept to Clinical Studies**, *Thomas Shaffer, M.S.E., Ph.D.*  
Provide an overview of liquid ventilation concepts; Characterize liquid properties & mechanism of action; Overview of prior preclinical & clinical studies; Update on current preclinical & clinical studies
- 4:45 **Holistic Therapies in Women & Children**, *Kristy Brittain, Pharm.D.*  
Describe current self-care holistic therapies used in pregnant and nursing women, and infants and children; Effectively assess patient use of holistic therapies; Evaluate holistic therapies considering safety and efficacy in select populations (women, infants, children); Counsel mothers appropriately regarding holistic therapies
- 5:45 pm **Adjourn for the day**

## Thursday, November 14, 2019

- 7:00 am **Registration/Breakfast/Exhibits**
- 7:30 **Where's the Beef/Evidence? How is Neonatal Care Changing?**, *Reese Clark, M.D.*  
Discuss clinical applications of and the ethical challenges of genomics in the NICU; Discuss new approaches to the management of neonatal abstinence; Discuss new guidelines for assessing neonatal nutrition
- 8:30 **Where's the Beef/Evidence? Notable articles 2018-2019**, *Reese Clark, M.D.*  
Discuss how the care for infants with retinopathy (ROP) is changing; Discuss the new guidelines for managing neonatal sepsis and infants born to moms with chorioamnionitis; Discuss the safety and efficacy of hydrocortisone in the NICU
- 9:30 **Break/Exhibits**
- 10:00 **Big Data and Administrative Data Sets—Good or Bad?**, *Reese Clark, M.D.*  
Discuss three important observations from big data sets; Discuss the three limitations to using administrative data; Name three approaches to minimizing sample bias
- 11:00 **Growing the Brain: Which Very Preterm Growth Patterns Make a Difference?**, *Sarah Taylor, M.D.*  
Identify which preterm infant growth patterns are positively associated with neurodevelopment & the methods utilized to achieve these patterns
- 12:00 pm **Efficient NICU Nutrition Monitoring: Which Tests are Worth Performing?**, *Sarah Taylor, M.D.*  
Determine the evidence supporting common NICU nutrition laboratory monitoring and how to use the available test to optimize neonatal care
- 1:00 pm **Adjourn for the day**
- 2:00 pm **Annual Meeting of South Carolina Neonatal Medicine Consortium**  
*See Following Page for Consortium Agenda*



# Neonatal Pharmacology Conference 2019: Incorporating Evidence-Based Practice into Clinical Decision Making

## Annual Meeting of South Carolina Neonatal Medicine Consortium

(2.0 AMA PRA CATEGORY 1 CREDITS™)

Open to providers from SC Level II and Level III centers

- 2:00 pm **Intro & Light Snack**, *David Annibale, M.D.*
- 2:30 **Quality Data Review (No CME Credit)**, *David Annibale, M.D.*
- 3:00 **Implementation of Bubble CPAP with Intact Cord: A Quality Improvement Project**, *Brittany Carter, MHA, RRT-NPS*  
Identify the importance of immediate establishment and maintenance of functional residual capacity in the neonate; Describe the relationship between the use of continuous positive airway pressure (CPAP) immediately after birth and its relationship with recruiting and maintaining alveolar expansion; Identify the effect of successful CPAP application in regards to its impact on reduced intubations and surfactant usage; Apply safe practices regarding Bubble CPAP in the delivery room to reduce rates of intubation and surfactant usage in the neonate; Assist the clinician with achievement and preservation of functional residual capacity through application of Bubble CPAP in patients at risk for, or with early signs of, respiratory distress syndrome.
- 4:00 **Placental Safety Following Delivery: Placentophagy & Lotus Births**, *Ryan Cuff, M.D.*  
Describe what is known as a lotus birth; Describe the trends in and rationale for both lotus birth and placentophagy over time; Discuss the evidence related to the proposed benefits of placentophagy, including its effect on mood, lactation, and nutrition in the postpartum period; Describe the risks related to placentophagy and lotus birth, specifically as they relate to infection, including late onset GBS sepsis; Describe the impact of placentophagy and lotus birth on situations where histologic examination of the placenta is warranted.
- 4:30 **Rapid Whole-Genome Sequencing in the NICU... Ready for Prime Time?**, *Bryan Carter, M.D.*  
List three ethical issues raised by rapid WGS in neonatology; List three potential benefits of precision medical management in the NICU following rapid WGS.
- 5:00 pm **Adjourn**

## COURSE AGENDA (CONTINUED)

Friday, November 15, 2019

- 7:00 **Registration/Breakfast**
- 7:30 **Neonatal Cancer/Chemotherapy**, *Sandeep Kuril, M.D.*  
Discuss common neonatal cancer; To discuss principles of chemotherapy treatment in neonatal cancer; To discuss different chemotherapeutic agents and its toxicity in neonates
- 8:30 **Taking the Ambiguity Out of Congenital Adrenal Hyperplasia (CAH)**, *Henry Rohrs, M.D.*  
Outline the physiology of the adrenal gland in CAH; Describe the causes of CAH and know the differences in presentation of each; Interpret CAH testing results on the newborn screen; Describe treatment regimens and monitoring for CAH; Participate in the debate of prenatal treatment by understanding the genetics of CAH
- 9:30 **Break**
- 9:45 **How to Navigate Thyroid Disease in the Neonate**, *Henry Rohrs, M.D.*  
Describe normal thyroid embryology and physiology; Review the anatomical abnormalities and other causes of congenital hypothyroidism and causes of acquired hypothyroidism; Interpret thyroid function testing results on the newborn screen; Formulate diagnosis and management plans for patients with hypothyroidism
- 10:45 **Mystery Diagnosis: An Unusual Presentation of Post-hemorrhagic Hydrocephalus**, *Alanna Shiflett, NNP*  
Describe at least 2 key features of the mystery case diagnosis; Identify test and procedures that would be relevant to diagnosing the mystery case; Name drugs of choice for treatment of mystery case diagnosis; Identify pertinent follow up care for mystery diagnosis
- 11:45 **Lunch (on your own)**
- 1:15 pm **Dexmedetomidine for Analgesation in Mechanically Ventilated Newborns and Infants in the Neonatal Intensive Care Unit**, *Toby Cox, PharmD*  
Explain why analgesia and sedation are an important part of the management of newborns and infants requiring mechanical ventilation in the neonatal intensive care unit; Describe the concept of analgesation; Discuss complications associated with continuous infusion sedatives and analgesics in the NICU; Identify the pharmacologic properties of dexmedetomidine; Recognize the limitations of the available clinical evidence for the use of dexmedetomidine in the NICU
- 2:15 **Medications for Neonatal and Young Infant End-of-Life: More Than Morphine**, *Brian Carter, M.D.*  
List 3 routes of administration of opioids for pain & agitation at the end-of-life; Describe how clonidine may work as an adjunct in treating pain and neuro-irritability, as well as NAS; Define delirium in the newborn and young infant
- 3:15 **Break**
- 3:30 **The Wild New World of Pharmacogenomics: The Good, The Bad, and The Ugly**, *Brian Carter, M.D.*  
Distinguish pharmacogenomics from pharmacokinetics and pharmacodynamics; Describe how genetic determinates impact drug clearance
- 4:30 pm **Adjourn until 2020**





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## CANCELLATIONS

A refund will be made upon written request prior to October 13, 2019; however, \$100 will be retained for administrative costs. No refunds will be made after October 13, 2019. We reserve the right to cancel the program if necessary. Full registration fees will be refunded for cancelled programs. The Medical University of South Carolina cannot be responsible for reimbursement of airline or other transportation fares, hotel or rental car charges, including penalties. ***By registering for this conference, you agree to this cancellation policy.***

## ELECTRONIC SYLLABUS

We're going green! In our efforts to "go green", the syllabus will be provided online. Information will be emailed to you the week prior to the conference so that you may download a copy. A printed syllabus is available upon request at the time of your registration for an additional fee of \$40.00.

## AMERICANS WITH DISABILITIES ACT

It is the policy of the Medical University of South Carolina not to discriminate against any person on the basis of disabilities. If you feel you need services or the auxiliary aids mentioned in this act in order to fully participate in this continuing education activity, please call the Office of Continuing Medical Education at (843) 876-1925, or attach a note to your registration.

## MORE INFORMATION

For more information, visit [www.musc.edu/cme](http://www.musc.edu/cme), call the Office of CME at (843) 876-1925, or email [gossen@musc.edu](mailto:gossen@musc.edu).

## HISTORIC CHARLESTON

Charleston has stood throughout History as the cultural capital of the South and is considered by many to be a living museum, with a wonderful variety of things to do and see. In this beautifully preserved city you can experience tours through historic landmarks, including 18th century homes and plantations, the Battery, museums, churches and the city market. It also boasts numerous art galleries that display the city's impressive appreciation for the visual arts, wonderful shops and some of the best restaurants to be found anywhere in the United States.

## HOTEL ACCOMMODATIONS

### The Francis Marion Hotel

387 King Street  
Charleston, SC 29403  
(843) 722-0600

The Francis Marion Hotel, historic Charleston's landmark full service hotel, is in the heart of Charleston's historic district. Located at the newly restored Marion Square, the Francis Marion Hotel is only a few blocks from the Charleston Visitor Center, South Carolina Aquarium, restaurants, boutiques, galleries, museums, antique shops and night life. The hotel offers valet parking, spa, concierge, retail shops and the Swamp Fox Restaurant & Bar. Special group rates start at **\$189.00**, plus tax, per night. A limited number of guest rooms have been reserved and are being offered on a first come, first serve basis. The room block will be held until **Sunday, October 13, 2019** however the room block may be filled prior to this date. In such a case, neither the group rate nor guest room availability can be guaranteed. Therefore, we recommend you make your reservation as soon as possible. Reservations can be made by calling the hotel directly at 843-722-0600 or 877-756-2121 and identifying yourself as being a participant in this meeting, or by following the online directions below. Link for online reservations:

**Online Booking Link:** <http://tinyurl.com/FMH-neonatal2019>  
**Online Booking Code:** NEONATAL 19

**Parking:** Valet parking at the hotel is available at \$25.00 plus tax, per day and can be added to your guest folio. In addition, self-parking is available at \$20.00 per day (cash). Rates are subject to change with notice.



## REGISTRATION FORM

# Neonatal Pharmacology Conference 2019 Incorporating Evidence-Based Practice into Clinical Decision Making

November 13–15, 2019

Francis Marion Hotel • Charleston, South Carolina

*By Registering for this conference, you acknowledge and agree to the cancellation policy stated in this brochure.*

Name \_\_\_\_\_ Personal ID# XXX - XX - \_\_\_\_\_  
*As you would like it printed on your name badge. Please use the last four digits of your SSN*

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Specialty \_\_\_\_\_ Degree/Credentials \_\_\_\_\_

Daytime Phone ( \_\_\_\_\_ ) \_\_\_\_\_ - \_\_\_\_\_ Business Fax ( \_\_\_\_\_ ) \_\_\_\_\_ - \_\_\_\_\_

Email \_\_\_\_\_  
*Please use the email address you check most regularly to ensure receipt of all CME Credit emails.*

☐ I do not want my name included on a list of participants to be included in handouts at the conference.

### Annual Meeting of South Carolina Neonatal Medicine Consortium

Thursday, November 14, 2019 • 2:00-5:00 pm

This meeting is open to any providers from a SC Level II or Level III Medical Center. There is no extra charge to attend this meeting.

- ☐ YES, I will attend the Annual Meeting of South Carolina Neonatal Medicine Consortium.  
☐ NO, I will NOT attend the Annual Meeting of South Carolina Neonatal Medicine Consortium.

## Registration Fees

NP, RN, Healthcare Professionals  
Physicians  
Printed Course Syllabus

Early Bird Fees  
Received on or by 8/16/19

- ☐ \$450  
☐ \$490  
☐ \$40

Regular Fees  
Received after 8/16/19

- ☐ \$500  
☐ \$540  
☐ \$40

One Day Only\*\*

- ☐ \$200  
☐ \$275  
☐ \$40

Total Registration Fee Included: \$ \_\_\_\_\_

\*\*If you selected One Day Only, indicate which day: \_\_\_\_\_

### Payment must accompany registration:

- ☐ Check Payable to Medical University of South Carolina  
☐ MasterCard ☐ Visa ☐ American Express

Cardholder's Name \_\_\_\_\_

Card Number \_\_\_\_\_

Expiration Date \_\_\_\_\_

*Registration fees include tuition, breaks, and certificates of attendance. Please direct any inquiries to Elizabeth Gossen, Office of CME 843.876.1925 or gossen@musc.edu*

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