



**Penn Medicine**  
Continuing Medical and  
Interprofessional Education

# NORA EDUCATION

for **PRACTITIONERS**

**CME/CE-ACCREDITED ENDURING MATERIAL**

**COURSE DIRECTOR**

**Mark S. Weiss, MD**

Assistant Professor of Anesthesiology  
and Critical Care  
Director, Inpatient Endoscopy Services  
Penn Medicine  
Philadelphia, PA

**AVAILABLE THROUGH JULY 2022**



<https://upenn.cloud-cme/pennmedicinenora>



This array of courses, “*Non-Operating Room Anesthesia (NORA) Education for Practitioners*,” has value not only to residency training programs, but can also be a standard teaching tool for the entire anesthesia provider team, including Staff Anesthesiologists, Certified Registered Nurse Anesthetists, and Procedural Physicians supervising the delivery of anesthesia in the NORA setting.

#### **HOSTING DEPARTMENT**

*Non-Operating Room Anesthesia (NORA) Education for Practitioners* is hosted by the Department of Anesthesiology and Critical Care at Penn Medicine.

#### **DEVELOPED IN COLLABORATION WITH**



Innovation Center for Online Medical Education

#### **REGISTRATION FEES**

There are five (5) courses available, each requiring registration. You may take one or all courses, in any order you choose. The registration fee for each course is \$49 for physicians, \$37.50 for CRNA's, nurse anesthetists, healthcare professionals and nurses and \$25 for fellows, residents and students. Registration for each module is available online at <https://upenn.cloud-cme.com/pennmedicinora>

Course registrations for groups of learners are available for purchase by institutions. Please contact us at [penncme@pennmedicine.upenn.edu](mailto:penncme@pennmedicine.upenn.edu) to make arrangements.

#### **CANCELLATION AND REFUND POLICY**

Once the registration fee is paid, attendees will have automatic access to the course(s) you have registered for. Therefore, no refunds will be issued.

#### **CERTIFICATES AND TRANSCRIPTS**

After the course(s) have been viewed along with the completion of the evaluation and post-test, all participants will be able to submit a request for credit. The earned credits will be available for viewing on your transcript or by printing your certificate of attendance. Certificates are not mailed/emailed.

#### **ACCREDITATION**



JOINTLY ACCREDITED PROVIDER™  
INTERPROFESSIONAL CONTINUING EDUCATION

In support of improving patient care, Penn Medicine is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.



# COURSE 1

## Non-Operating Room Anesthesia (NORA) Safety and the Human Factor Element

### LEARNING OBJECTIVES

After participating in this activity, the learner should be able to:

- Constructively review medical errors that may occur in anesthesia
- Compare and contrast the incidence of errors in OR versus NORA settings
- Describe a systems-based approach to safety improvement and patient outcomes
- Explain the role of the anesthesia team in creating safer systems

### DESIGNATION OF CREDIT

**Physicians:** Penn Medicine designates this enduring material for a maximum of 0.75 *AMA PRA Category 1 Credits*<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**AANA (Nurse Anesthetists):** This program has been prior approved by the American Association of Nurse Anesthetists for .75 Class A CE credits; Code Number 1038318; Expiration Date 07/25/22.

**Nurses:** This activity is approved for 0.75 contact hours.

**Physician Assistants:** AAPA accepts certificates of participation for educational activities certified for *AMA PRA Category 1 Credit*<sup>™</sup> from organizations accredited by ACCME or a recognized state medical society. PAs may receive a maximum of 0.75 Category 1 credits for completing this activity.

### COURSE PRESENTER

William Bramble, PhD

Senior Human Performance Investigator  
National Transportation Safety Board  
Washington, DC

---

### DISCLOSURES

Penn Medicine, Office of Continuing Medical and Interprofessional Education, adheres to the ACCME *Standards for Commercial Support*. Faculty and planners' disclosure information will be made available in the conference materials and syllabus. Faculty members are also expected to disclose to participants any discussions of off-label and/or investigational uses of pharmaceutical products within their presentations.





## COURSE 2

### Anesthesia in the Electrophysiology Lab: Part I

#### LEARNING OBJECTIVES

After participating in this activity, the learner should be able to:

- Summarize the reasons behind the growth in NORA/EP cases
- Discuss key points in the patient evaluation and the anesthetic preparation of the laboratory during the pre-procedural period
- Cite examples of the various options for anesthetic management and the rationale behind those choices to optimize patient safety and outcome
- Describe the common “Holding Room” procedures, such as NIPS, DFTs, and cardioversion

### Anesthesia in the Electrophysiology Lab: Part II

#### LEARNING OBJECTIVES

After participating in this activity, the learner should be able to:

- Compare and contrast the 3 groupings of Radiofrequency Ablation (RFA) in the electrophysiology suite
- Discuss different options of airway management, including High Frequency Jet Ventilation (HFJV)
- Explain management of the patient during post ablative testing, such as the Isoproterenol Challenge
- Plan for the care and management of the post-procedural patient to increase patient safety and improve outcome

#### DESIGNATION OF CREDIT

**Physicians:** Penn Medicine designates this enduring material for a maximum of 0.75 *AMA PRA Category 1 Credits*<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**AANA (Nurse Anesthetists):** This program has been prior approved by the American Association of Nurse Anesthetists for .75 Class A CE credits; Code Number 1038319; Expiration Date 07/25/22.

**Nurses:** This activity is approved for 0.75 contact hours.

**Physician Assistants:** AAPA accepts certificates of participation for educational activities certified for *AMA PRA Category 1 Credit*<sup>™</sup> from organizations accredited by ACCME or a recognized state medical society. PAs may receive a maximum of 0.75 Category 1 credits for completing this activity.

#### COURSE PRESENTER

Roger A. Moore, MD

Professor of Clinical Anesthesiology and Critical Care

Penn Medicine

Philadelphia, PA

Past President, American Society of Anesthesiologists and Society of Cardiac Anesthesiologists



## COURSE 3

### Anesthesia for GI Endoscopic Procedures: Part I

#### LEARNING OBJECTIVES

After participating in this activity, the learner should be able to:

- Explain the reasons behind the rise of GI procedures in NORA
- Categorize the types of procedures, both basic and advanced, commonly done in the GI suite
- Identify the challenges of common endoscopic procedures, including management of the “shared airway,” abnormal positioning, and pain control, to improve patient safety
- Develop a practical approach to airway management in the GI suite, including criteria for endotracheal intubation, to improve patient outcome

### Anesthesia for GI Endoscopic Procedures: Part II

#### LEARNING OBJECTIVES

After participating in this activity, the learner should be able to:

- Explain how the use of closed claims cases can illuminate the difficulties and dangers of the NORA suite to improve patient safety
- Explain the value of the ETCO<sub>2</sub> monitor and why oximetry alone does not ensure safe outcome
- Identify the common co-morbidities that many NORA patients have and how these issues may affect patient care
- Summarize the controversy of providing anesthesia services for ASA I and II patients undergoing routine colonoscopy
- Apply the “Pearls” from the presentation to develop a practical strategy for implementing a collaborative team-based approach to care

#### DESIGNATION OF CREDIT

**Physicians:** Penn Medicine designates this enduring material for a maximum of 0.75 *AMA PRA Category 1 Credits*<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**AANA (Nurse Anesthetists):** This program has been prior approved by the American Association of Nurse Anesthetists for .75 Class A CE credits; Code Number 1038320; Expiration Date 07/25/22.

**Nurses:** This activity is approved for 0.75 contact hours.

**Physician Assistants:** AAPA accepts certificates of participation for educational activities certified for *AMA PRA Category 1 Credit*<sup>™</sup> from organizations accredited by ACCME or a recognized state medical society. PAs may receive a maximum of 0.75 Category 1 credits for completing this activity.

#### COURSE PRESENTER

Mark S. Weiss, MD

Assistant Professor of Anesthesiology and Critical Care

Director, Inpatient Endoscopy Services

Penn Medicine

Philadelphia, PA



## COURSE 4

### Anesthesia for Interventional Pulmonology Procedures: Part I

#### LEARNING OBJECTIVES

After participating in this activity, the learner should be able to:

- List the types of procedures done by interventional pulmonologists in the bronchoscopy suite
- Describe the unique challenges encountered by the anesthesia team in the bronchoscopy suite that may affect patient outcome
- Compare and contrast diagnostic bronchoscopy and therapeutic bronchoscopy and review the basic procedural issues that may arise
- Review the different types of procedures used for therapeutic bronchoscopy, including:
  - Rigid Bronchoscopy
  - Thermal Modalities

### Anesthesia for Interventional Pulmonology Procedures: Part II

#### LEARNING OBJECTIVES

After participating in this activity, the learner should be able to:

- Discuss anesthetic techniques for basic interventional pulmonary procedures
- Assess and mitigate common problems in the interventional pulmonary suite to increase patient safety and improve outcome
- Discuss the basics of rigid bronchoscopy and jet ventilation
- Explain central airway obstruction and its implications for the anesthesia team in the care of the patient

#### DESIGNATION OF CREDIT

**Physicians:** Penn Medicine designates this enduring material for a maximum of 0.75 *AMA PRA Category 1 Credits*<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**AANA (Nurse Anesthetists):** This program has been prior approved by the American Association of Nurse Anesthetists for .75 Class A CE credits; Code Number 1038321; Expiration Date 07/25/22.

**Nurses:** This activity is approved for 0.75 contact hours.

**Physician Assistants:** AAPA accepts certificates of participation for educational activities certified for *AMA PRA Category 1 Credit*<sup>™</sup> from organizations accredited by ACCME or a recognized state medical society. PAs may receive a maximum of 0.75 Category 1 credits for completing this activity.

#### COURSE PRESENTERS

**Richard C. Month, MD**  
Assistant Professor of Clinical  
Anesthesiology and Critical Care  
Penn Medicine  
Philadelphia, PA  
President, Pennsylvania Society of Anesthesiologists

**Anthony R. Lanfranco, MD**  
Assistant Professor of Clinical Medicine  
Director, Interventional  
Pulmonology Fellowship  
Penn Medicine  
Philadelphia, PA





## COURSE 5

### Anesthesia for Electroconvulsive Therapy (ECT)

#### LEARNING OBJECTIVES

After participating in this activity, the learner should be able to:

- Describe the indications for ECT
- List the general sequence of events for performing this procedure
- Address the challenges of providing a general anesthetic at a rapid pace in a remote location with high patient turnover in order to improve patient safety
- Discuss the indications of the various administered medications necessary to achieve a successful ECT treatment
- Review and prepare for the potential adverse effects that may occur during the ECT procedure, such as emergency airway rescue or problematic hemodynamic changes, to improve patient outcome

#### DESIGNATION OF CREDIT

**Physicians:** Penn Medicine designates this enduring material for a maximum of 0.75 *AMA PRA Category 1 Credits*<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**AANA (Nurse Anesthetists):** This program has been prior approved by the American Association of Nurse Anesthetists for .75 Class A CE credits; Code Number 1038322; Expiration Date 07/25/22.

**Nurses:** This activity is approved for 0.75 contact hours.

**Physician Assistants:** AAPA accepts certificates of participation for educational activities certified for *AMA PRA Category 1 Credit*<sup>™</sup> from organizations accredited by ACCME or a recognized state medical society. PAs may receive a maximum of 0.75 Category 1 credits for completing this activity.

#### COURSE PRESENTER

**Kathryn W. Cobb, MD**

Assistant Professor of Anesthesiology

Division Chief, Satellite Anesthesia Care

University of North Carolina at Chapel Hill School of Medicine

Chapel Hill, NC

---

**NONDISCRIMINATION STATEMENT** The University of Pennsylvania values diversity and seeks talented students, faculty, and staff from diverse backgrounds. The University of Pennsylvania does not discriminate on the basis of race, sex, sexual orientation, gender identity, religion, color, national or ethnic origin, age, disability, or status as a Vietnam Era Veteran or disabled veteran in the administration of educational policies, programs or activities; admissions policies; scholarship and loan awards; athletic, or other University administered programs or employment. Questions or complaints regarding this policy should be directed to Executive Director, Office of Affirmative Action and Equal Opportunity Programs, 3600 Chestnut Street, Sansom Place East Suite 228, Philadelphia, PA 19104-6106 or 215-898-6993 (Voice) or 215-898-7803 (TDD). [www.upenn.edu/affirm-action](http://www.upenn.edu/affirm-action).