

Introducing the Perioperative Point-of-Care Ultrasound (PoCUS) Special Interest Group (SIG)

At a casual glance, one may wonder, “What does point-of-care ultrasound (PoCUS) have to do with ASRA?” Well, two important pieces of information make it clear that PoCUS is a “natural” extension of regional anesthesiology and ASRA’s mission:

1. Ultrasound (US) guidance has transformed regional anesthesia from the practice of relatively few academic experts to an “everyday” tool widely used by most anesthesiologists. US imaging is now used in virtually every anesthesiology practice in the United States to guide interventions such as regional anesthesia procedures (both central neuraxial and peripheral nerve blocks) and vascular access.
2. ASRA has been a powerful advocate for improving patient safety and care related to regional anesthesia (e.g., management of local anesthetic toxicity and anticoagulation guidelines). In addition, ASRA has successfully collaborated with the American Society of Anesthesiologists to create guidelines and a certification process in the POC use of ultrasound-guided regional anesthesia.

ASRA’s longtime commitment to expanding the use of ultrasound by regional anesthesiologists, in addition to a strong track record on improving safety and outcomes in regional anesthesia, has led to the creation of a special interest group (SIG) that melds those two missions. This SIG, therefore, represents an opportunity for ASRA to stay at the forefront as a leader in anesthesiology when it comes to the ever-evolving use of US in the perioperative setting!

WHAT IS PoCUS?

By definition, PoCUS applications involve a focused or limited examination aimed at answering a simple, well-defined clinical question to guide patient management with the intention of improving patient outcomes. The examination is performed at the bedside by the physician providing patient care. Many studies have shown that minimal training is required to become proficient at basic, yet potentially life-saving POCUS skills.^{1,2}

WHY A PoCUS SIG?

The perioperative PoCUS SIG encourages regional anesthesiologists with an interest in perioperative ultrasound to advance the knowledge and expand the scientific body of perioperative PoCUS, with the aims of improving care and outcomes of patients undergoing regional anesthesia. For example, PoCUS will allow regionalists to more accurately diagnose and manage adverse events related to regional anesthesia such as pneumothorax,



Jan Boublik, MD, PhD
Assistant Professor of
Anesthesiology
Stanford School of Medicine
Department of Anesthesiology,
Perioperative and Pain Medicine
Stanford, California



Stephen Haskins, MD
Assistant Attending Anesthesiologist
Hospital for Special Surgery
Clinical Assistant Professor of
Anesthesiology
Weill Cornell Medical College
New York, New York

Section Editor: Melanie Donnelly, MD

“The perioperative PoCUS SIG encourages regional anesthesiologists with an interest in perioperative ultrasound to advance the knowledge and expand the scientific body of perioperative PoCUS.”

hemiaphragmatic paresis, and hemodynamic instability in the setting of high spinal/epidural. Of note, PoCUS diagnostic applications relevant to regional anesthesia practice are, in many cases, superior to traditional imaging modalities and clinical assessment tools. In addition, many PoCUS

applications, such as pulmonary assessment of acute respiratory events, are well-established in intensive care and emergency medicine practices.

- Ultrasound is superior to chest X-ray to rule out pneumothorax and better than fluoroscopy to diagnose hemidiaphragmatic paresis.^{3,4} Lung ultrasound is also an excellent tool to diagnose other lung pathology such as chronic obstructive pulmonary disease (COPD) and interstitial syndromes including congestive heart failure (CHF), acute respiratory distress syndrome (ARDS), and pneumonia.⁵
- Focused transthoracic echocardiography (TTE; also called focused cardiac ultrasound) is an important tool in the hands of anesthesiologists and critical care physicians to supplement clinical evaluation and optimize cardiopulmonary resuscitation in the perioperative setting.⁶ As opposed to transesophageal echocardiography (TEE), TTE allows for assessment without a general anesthetic, making it more accessible and amenable to a regional anesthesiologist.

- Other relevant PoCUS applications include use of (1) abdominal ultrasonography to identify patients at increased risk for postoperative pain following hip arthroscopy due to intra-abdominal fluid extravasation, (2) airway assessment, (3) gastric content and aspiration risk evaluation, and (4) assessment of intracranial pressure.⁷⁻¹¹

HISTORY OF THE PoCUS SIG (SO FAR)

The ASRA Board approved the creation of the PoCUS SIG in September 2015, and our first meeting was held at the 41st annual spring meeting in 2016 in New Orleans, Louisiana. After starting with our 20 founding members committed to support and growth, the SIG has since seen tremendous membership growth to more than 600 members and counting.

Current stated goals from our mission statement are as follows.

Educational:

- Define and prioritize educational needs and dissemination of educational material pertaining to perioperative ultrasonography.
- Define and integrate perioperative ultrasonography topics relevant to anesthesiology residents as well as the regional anesthesia and acute pain fellows.

Science:

- Identify current gaps and encourage clinical and outcomes research in the area of perioperative ultrasonography.
- Advance the body of knowledge in perioperative ultrasonography and creation of publications relevant to ASRA members with an interest in the area.

Practice:

- Integrate perioperative ultrasonography into the practice of regional anesthesiologists to improve patient care and outcomes.
- Develop and standardize of indications, approaches, and techniques of perioperative ultrasonography.

We have proposed the following activities.

- I. Recommend perioperative PoCUS modules to the annual meeting scientific/education planning committee for incorporation into the annual meeting curricula or other educational venues as decided by ASRA leadership.
- II. Offer advice and provide support for implementation of educational activities.
- III. Publish an article in the *ASRA News* every 12–18 months pertaining to a topic relevant to the practice of perioperative PoCUS for the regional anesthesiologist.

HOW CAN I JOIN THE PoCUS SIG?

Members can join the PoCUS SIG during renewal or upon becoming an ASRA member.

Current members are able to join by contacting membership services at 855-795-ASRA or by e-mail: asramembership@asra.com. Or simply press the Join button on the ASRA POCUS SIG webpage [LINK TO <https://www.asra.com/page/189/perioperative-point-of-care-ultrasound-sig>].

HOW MUCH DOES IT COST TO JOIN THE PoCUS SIG?

Nothing! There is no cost other than regular society dues.

WHEN WILL THE PoCUS SIG MEET?

The PoCUS SIG will meet at the 42nd Annual Regional Anesthesiology and Acute Pain Meeting, which will be held April 6–8, 2017, at the Marriott Marquis in San Francisco, CA.

HOW CAN I GET INVOLVED AND PROVIDE INPUT?

Feedback and suggestions can be directed to the PoCUS SIG at pocus@asra.com.

We look forward to your suggestions, comments, and participation in this exciting, growing area of ASRA!

- IV. Create a dedicated page for perioperative PoCUS on the ASRA website.
- V. Provide a communication platform for ASRA members interested in perioperative PoCUS.
- VI. Create a curriculum of perioperative PoCUS for residents and fellows in regional anesthesia and acute pain medicine to recommend to fellowship directors.

To date, we have implemented the following.

1. Created a stand-alone, 2-day course separate from the annual meeting, “Introduction to Perioperative Point-of-Care Ultrasound.” For all interested, we would like to cordially invite you to join us at the inaugural course on February 25–26, 2017, in San Diego! Click here to register and take advantage of the early bird rates (Figure 1).
2. Integration of several perioperative ultrasound modules at the past spring meeting in New Orleans as well as the upcoming 42nd Annual Regional Anesthesiology and Acute Pain Meeting in San Francisco, California, on April 6–8, 2017.
3. Our SIG PoCUS website is a work in progress, with content to be added.
4. Publication of an article on Lung Ultrasonography for the Regional Anesthesiologist in the November 2015 issue of the *ASRA News*, publication of a Gastric Ultrasound article in the upcoming February 2017 issue of the *ASRA News*, with more in the works.

Figure 1



Although we believe this is a solid start, there are several other projects in the pipeline, and we welcome you to join and participate in this exciting and meaningful work!

REFERENCES

1. Monti JD, Younggren B, Blankenship R. Ultrasound detection of pneumothorax with minimally trained sonographers: a preliminary study. *J Spec Oper Med* 2009;9:43–46.
2. Cowie B, Kluger R. Evaluation of systolic murmurs using transthoracic echocardiography by anaesthetic trainees. *Anaesthesia* 2011;66(9):785–790.
3. Ding W, Shen Y, Yang J, He X, Zhang M. Diagnosis of pneumothorax by radiography and ultrasonography: a meta-analysis. *Chest* 2011;140(4):859–866.
4. Houston JG, Fleet M, Cowan MD, McMillan NC. Comparison of ultrasound with fluoroscopy in the assessment of suspected hemidiaphragmatic movement abnormality. *Clin Radiol* 1995;50(2):95–98.
5. Lichtenstein DA, Mezière GA. Relevance of lung ultrasound in the diagnosis of acute respiratory failure: the BLUE protocol. *Chest* 2008;134(1):117–125.
6. Jensen MB, Sloth E, Larsen KM, Schmidt MB. Transthoracic echocardiography for cardiopulmonary monitoring in intensive care. *Eur J Anaesthesiol* 2004;21(9):700–707.
7. Haskins S, Desai N, Fields K, et al. Diagnosis of intra-abdominal fluid extravasation following hip arthroscopy with point-of-care ultrasonography can identify patients at an increased risk for postoperative pain [published online August 22, 2016]. *Anesth Analg*
8. Muslu B, Sert H, Kaya A et al.. Use of sonography for rapid identification of esophageal and tracheal intubations in adult patients. *J Ultrasound Med* 2011;30:671–676.
9. Perlas A, Mitsakakis N, Liu L et al. Validation of a mathematical model for ultrasound assessment of gastric volume by gastroscopic examination. *Anesth Anal* 2013;116(2):357–363.
10. Van de Putte P, Perlas A. Ultrasound assessment of gastric content and volume: a systematic review of the literature. *Br J Anesth* 2014;113(1):12–22.
11. Rajajee V, Vanaman M, Fletcher JJ, Jacobs TL. Optic nerve ultrasound for the detection of raised intracranial pressure. *Neurocrit Care* 2011;15(3):506–515.



American Society of Regional Anesthesia and Pain Medicine
Advancing the Science and Practice of Regional Anesthesia and Pain Medicine



42nd Annual Regional Anesthesiology & Acute Pain Medicine Meeting

April 6-8, 2017 | Marriott Marquis, San Francisco, California

Submit abstracts by January 9th; early-bird deadline: February 8th

www.asra.com/raapm