

Point of Care Ultrasound Program Implementation for an Advanced Practice Provider Cohort



Scott J. Tilton MSN, AGACNP-BC, CCRN,

K. Melissa Smith Hayes, DNP, ANP-BC, CHFNP,

Susanna Rudy DNP, MSN, MFS, AG-ACNP, FNP-BC, ENP, CCRN

Introduction:

Point of Care Ultrasound (POCUS) is an emerging field of bedside diagnostics that facilitates provider assessment for life-threatening causes of shock and the response to bedside interventions. Compared to traditional echocardiography or ultrasound, clinicians perform POCUS at the bedside via smaller, affordable, cart-based, or even handheld devices. These attractive features and its potential to increase the quality of care have caused exponential growth of its utilization across acute care settings.

Problem:

- Ultrasound fellowships, board certifications, and credentialing for physicians have emerged alongside this increased utilization of POCUS to guide medical decision-making.,
- Advanced practice providers (APP) currently lack formal guidance from their regulatory bodies on training standards or required training to perform POCUS.
- Healthcare institutions are operating without formal guidance, training requirements, or credentialing pathways for POCUS users, potentially compromising patient safety (Raiten et al., 2020).
- This has led to individual institutions or healthcare system-level efforts to standardize ultrasound training, credentialing, and equipment (Smalley et al., 2020).
- Specific to this project setting at UPHS, the Heart and Vascular Intensive Care Unit (HVICU) at Penn Presbyterian Medical Center (PPMC) utilizes APPs in a high acuity setting. The number of APPs has grown from three in 2017 to ten in 2021, and only three have attended a formal POCUS course. Therefore, it was of the utmost importance to address the educational gap in POCUS use for APPs in this specific setting.

Aim:

Increase the APP's confidence and knowledge of POCUS through the implementation of the POCUS curriculum for the advanced practice provider and to serve as a model for future advanced practice cohorts.

Objectives:

- 1: Develop and implement a 4-hour POCUS training program for the advanced practice provider cohort within the Heart and Vascular Intensive Care Unit, which will provide the APP with an educational foundation for basic cardiac and lung ultrasound, as well as the assessment of the patient in shock.
- 2: Prior to and after the training program, confidence and knowledge levels will be assessed using a confidence and knowledge survey of POCUS that has been adapted from Gopal et al., 2021.

Results

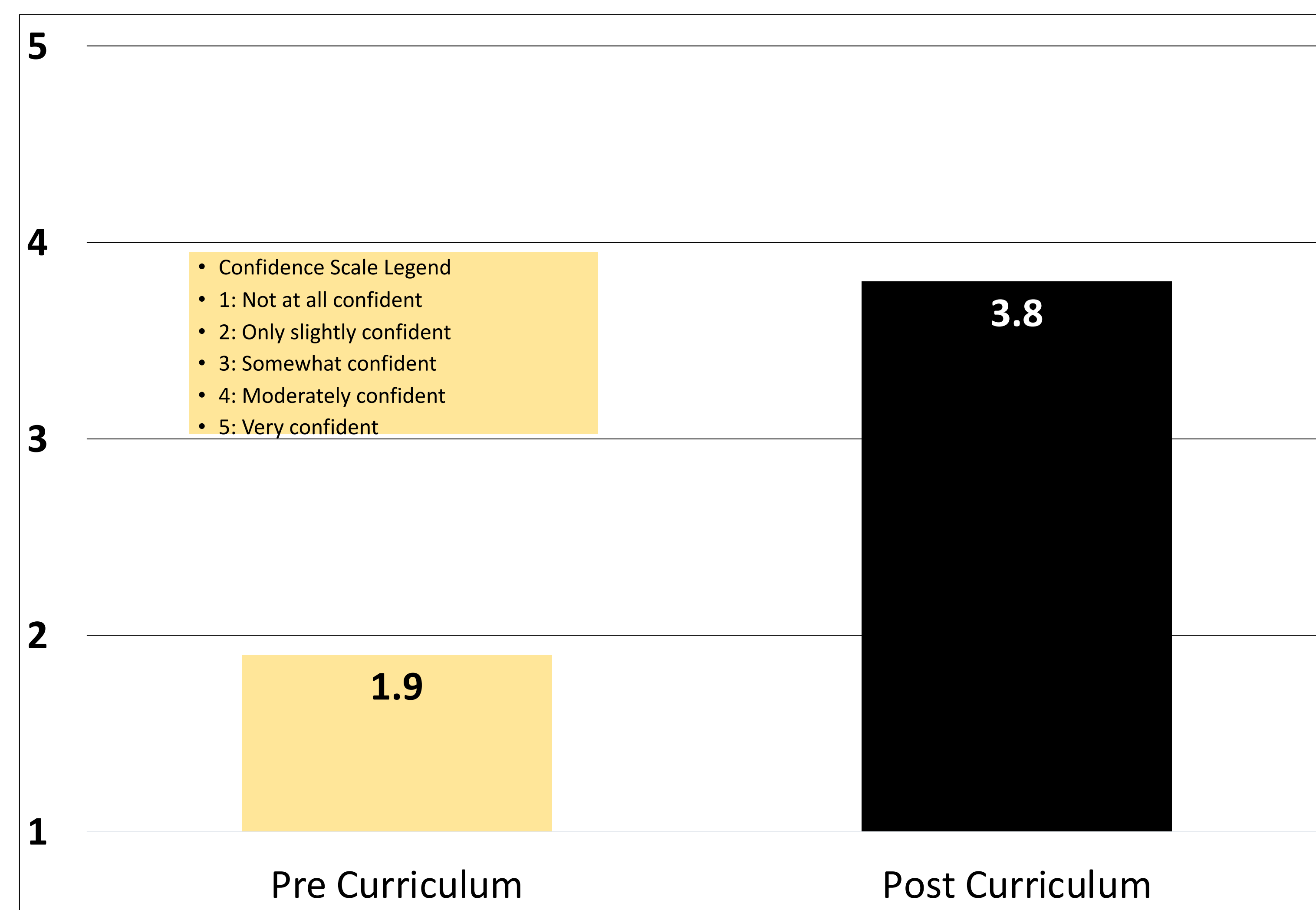


Chart 1. Self-reported confidence mean for POCUS Pre to Post Curriculum

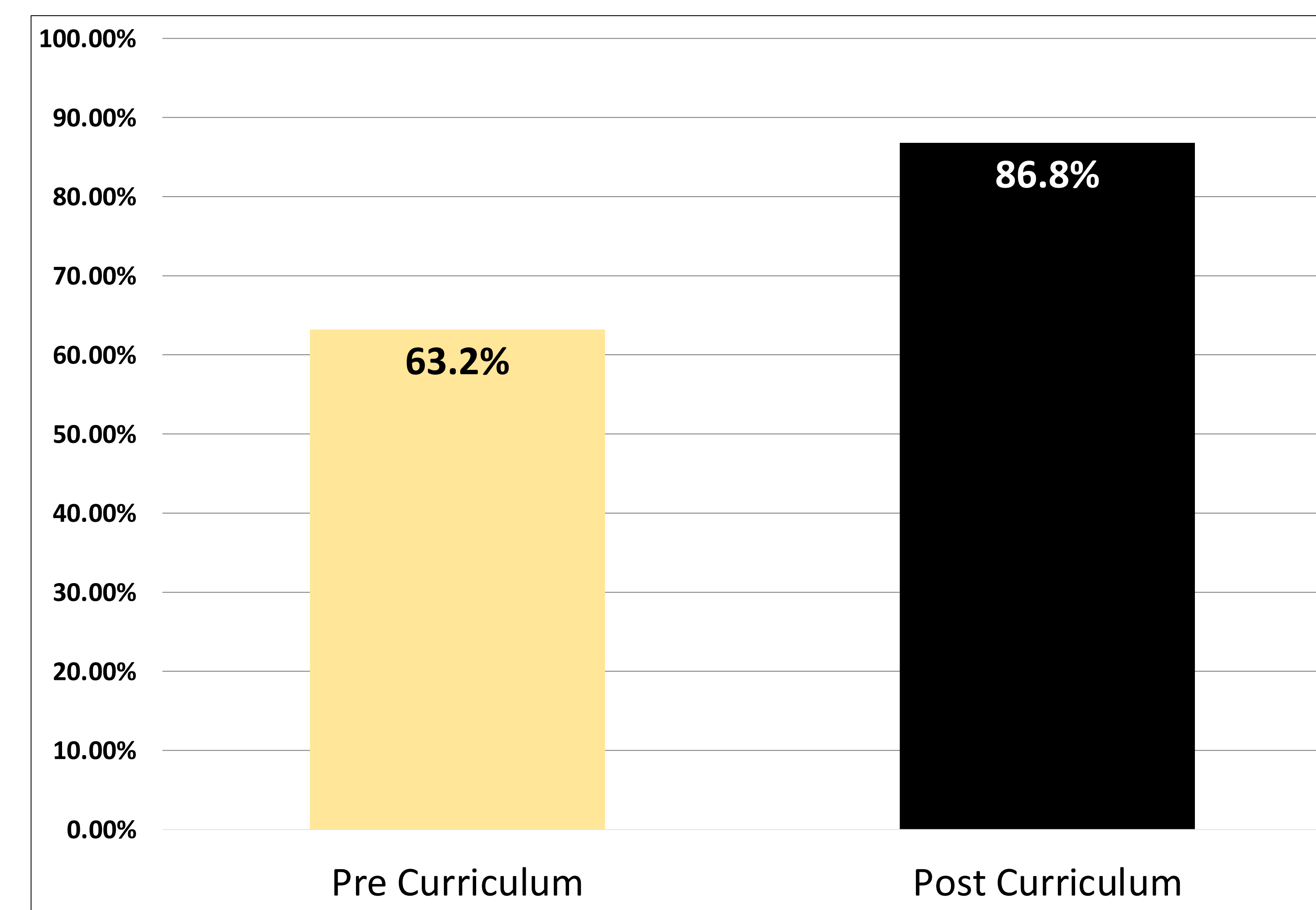
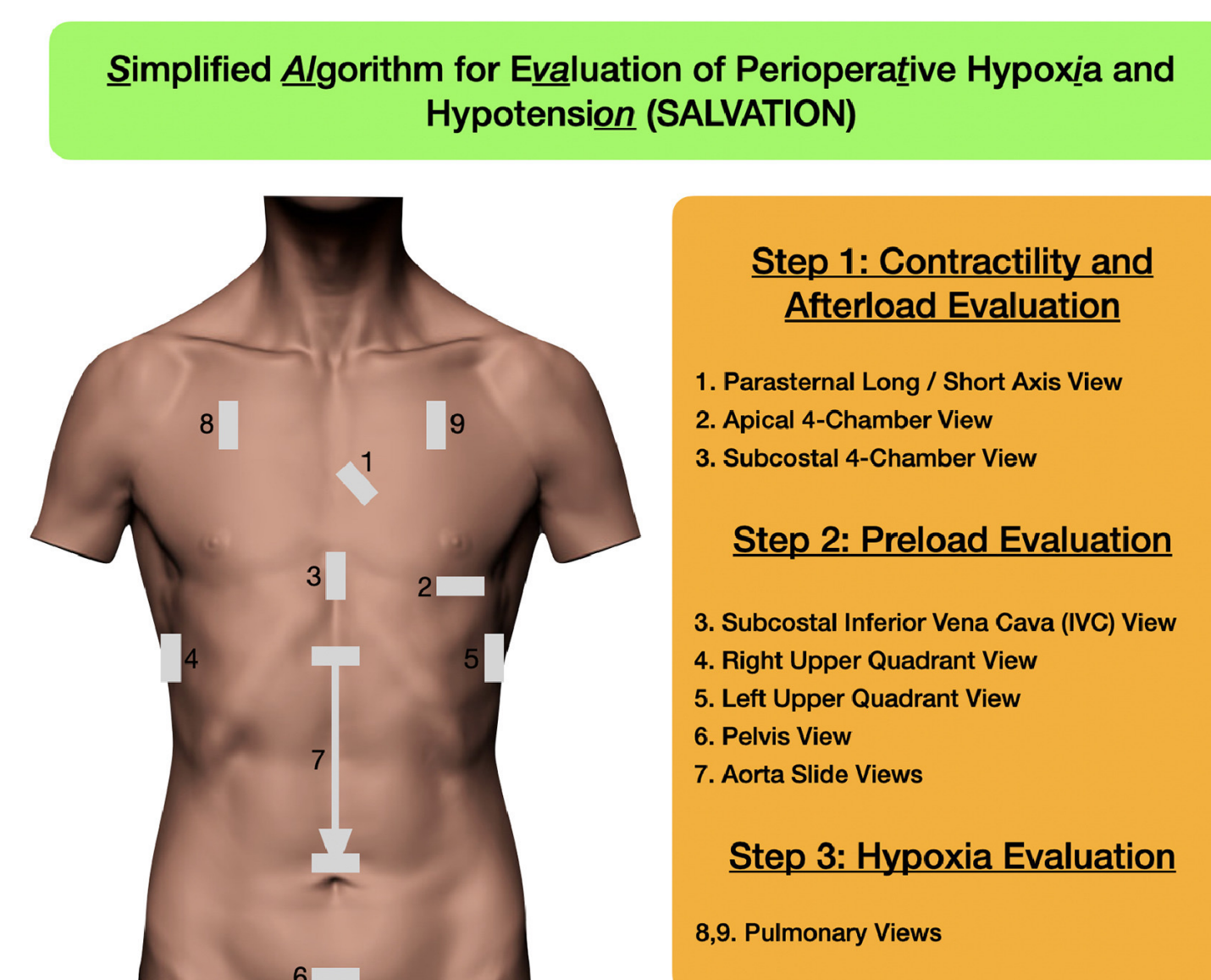
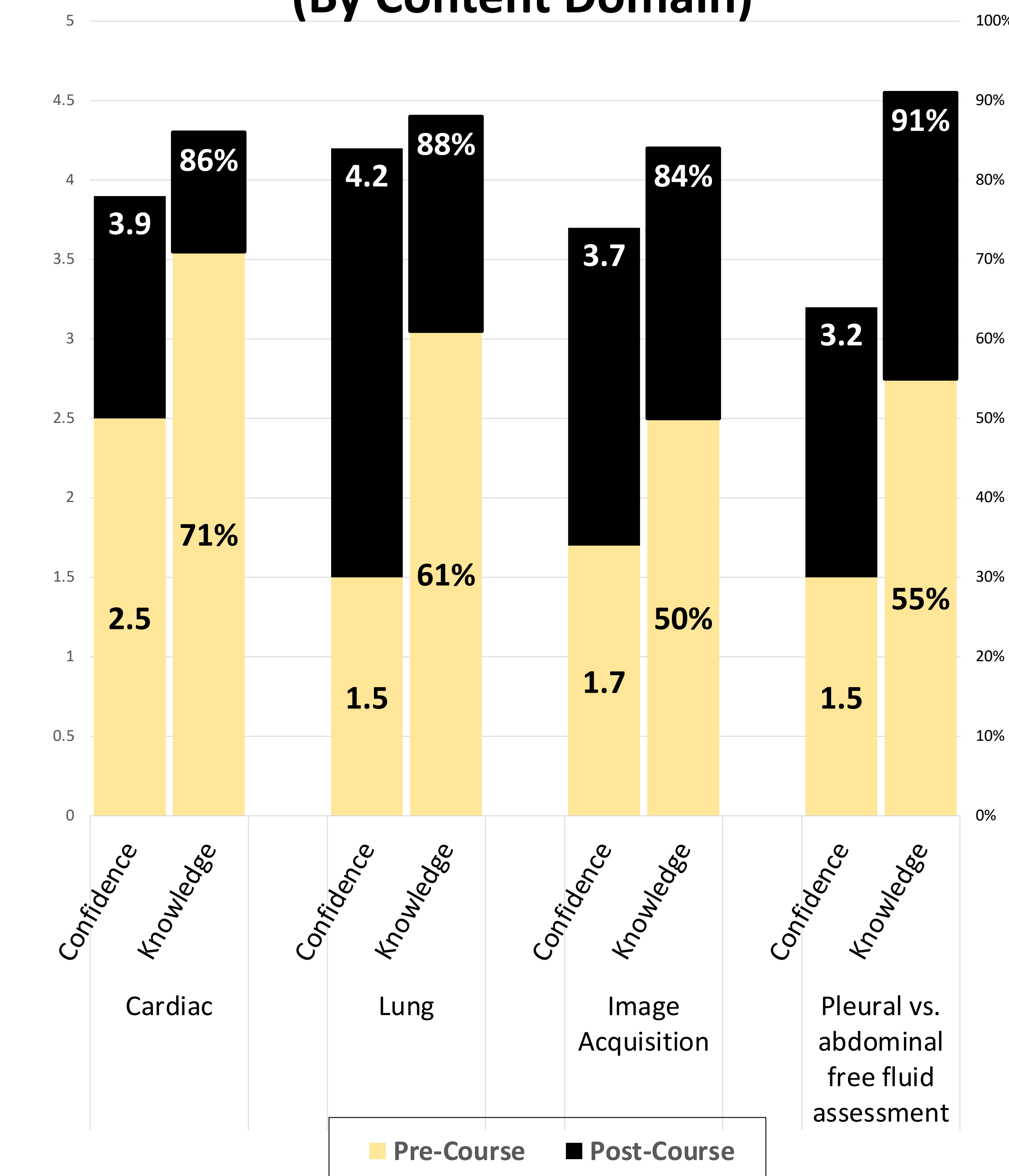


Chart 2. Mean Scores Pre to Post Curriculum

Confidence & Knowledge Mean Comparison (By Content Domain)



Curriculum: (SALVATION) protocol laminated cards provided to students for teaching POCUS views (Fatima et al., 2021).

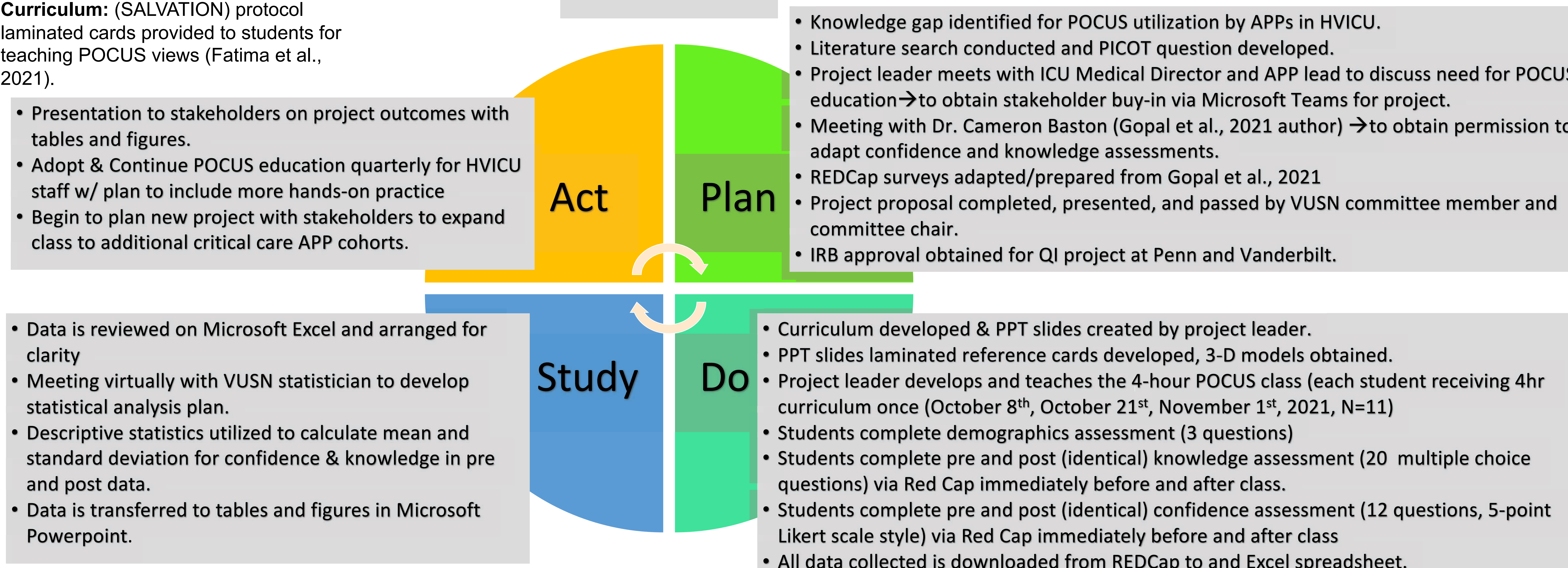
POCUS Curriculum Composition (4hrs)

- Introduction to Ultrasound (History, Physics Knowledge)
- Modes of Ultrasound (2D/B, M-Mode, Brief Intro to Doppler, Types of Ultrasound Probes)
- Cardiac/Pulmonary Qualitative Assessment,
- Assessment for Intraabdominal Free Fluid
- Clinical Syndromes of Shock: Tamponade, Tension Pneumothorax, Hypovolemia, Pulmonary Embolus/Cor Pulmonale, Aortic Dissection..
- "Hands on" Practice/Demonstration of Cardiac, Pulmonary, Intraabdominal Views



Curriculum: 3D Printed Heart Models from National Institute of Health Library (Bramlet, 2016)

Methods



Implications for Practice

- Implementation of a POCUS curriculum for advanced practice providers (APPs) can provide the APP with an educational foundation for basic cardiac and lung ultrasound and the assessment of the patient in shock.
- This curriculum demonstrated, on average, that students' confidence levels increased from "only slightly confident" to "moderately confident" across all domains of knowledge. Students should become confident in a skillset as it could increase their utilization of POCUS, potentially reinforcing the student to continue training on their own.
- Due to the increased utilization of POCUS across acute care settings amongst physician colleagues, APPs should understand this evolving assessment methodology as evidence to support its usage grows.
- This curriculum can serve as a model for future advanced practice cohorts that are seeking to address the current gap in POCUS education and training.



Take a picture to view course content and references

