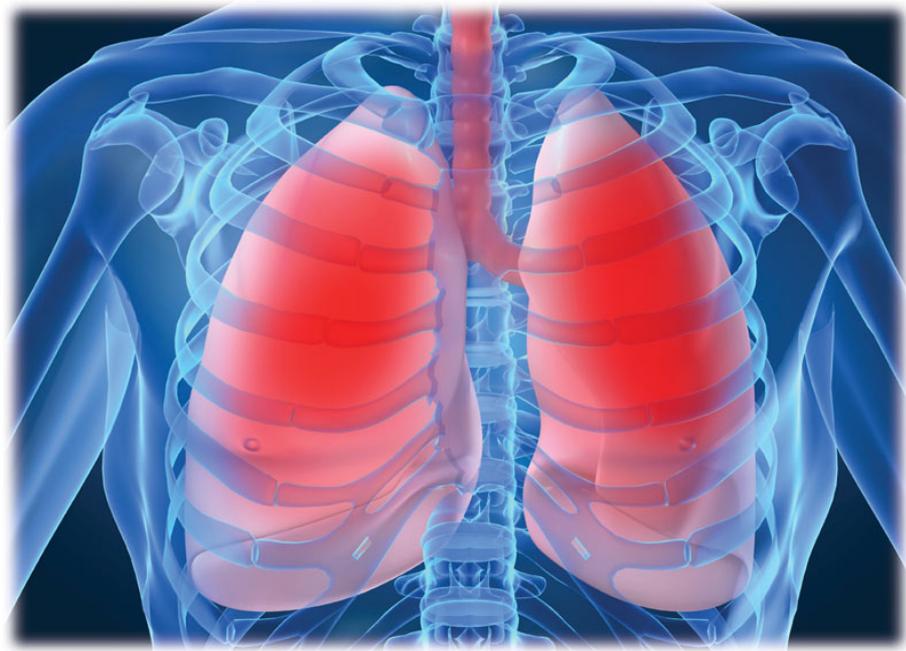




NATIONAL ASSOCIATION FOR CONTINUING EDUCATION



Update in PE and CTEPH

Final Outcome Report

Challenges in Pulmonary and Critical Care: 2013

**Presented at:
Cleveland Clinic Florida
Weston, Florida
December 7, 2013**

Report Date: December 26, 2013

Course Director

Franck Rahaghi, MD, MHS, FCCP

Director, Pulmonary Hypertension Clinic
Director, Pulmonary Education and Rehabilitation
Cleveland Clinic Florida
Weston, FL

Course Accreditation

The National Association for Continuing Education is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The National Association for Continuing Education designates this live activity for a maximum of 7 *AMA PRA Category 1 Credits*[™]. Physicians should only claim the credit commensurate with the extent of their participation in the activity.

National Association for Continuing Education is approved as a provider of nurse practitioner continuing education by the American Association of Nurse Practitioners. AANP Provider Number 121222. This program has been approved for 7.0 contact hours of continuing education (which includes 0.75 pharmacology hours).

Commercial Support

Challenges in Pulmonary and Critical Care: 2013 CME activity was supported through educational grants from the following companies:

Actelion

Baxter Healthcare

Boehringer Ingelheim Pharmaceuticals, Inc.

Boston Scientific

CSL Behring

Genentech

Grifols

Agenda

7:00-7:45	Continental Breakfast and Registration	12:15- 1:00	Lunch Break/Exhibits
7:45-8:00	Welcome Remarks Franck Rahaghi, MD, MHS, FCCP	1:00-2:00	Update in PE and CTEPH Charles D. Burger, MD
8:00-9:00	Pulmonary Hypertension: A Disease in Evolution Murali Chakinala, MD, FCCP	2:00-3:00	Idiopathic Pulmonary Fibrosis: What have we learned and where are we going? Franck Rahaghi, MD, MHS, FCCP
9:00-10:00	Update in Interventional Bronchoscopy 2013 Eduardo C. Oliveira, MD	3:00-3:15	Break/Exhibits
10:00- 10.15	Break/Exhibits	3:15-4:15	Lung Cancer: State of the Art 2013 Jinesh Mehta, MD
10:15-11:15	COPD: New Developments, New Treatment Horizons Anas Hadeh, MD, FCCP	4:15-4:30	Concluding Remarks Franck Rahaghi, MD, MHS, FCCP
11:15-12:15	Alpha-1 Antitrypsin Deficiency: 50th Anniversary of a Disease Robert A. Sandhaus, MD, PhD		

Levels of Evaluation

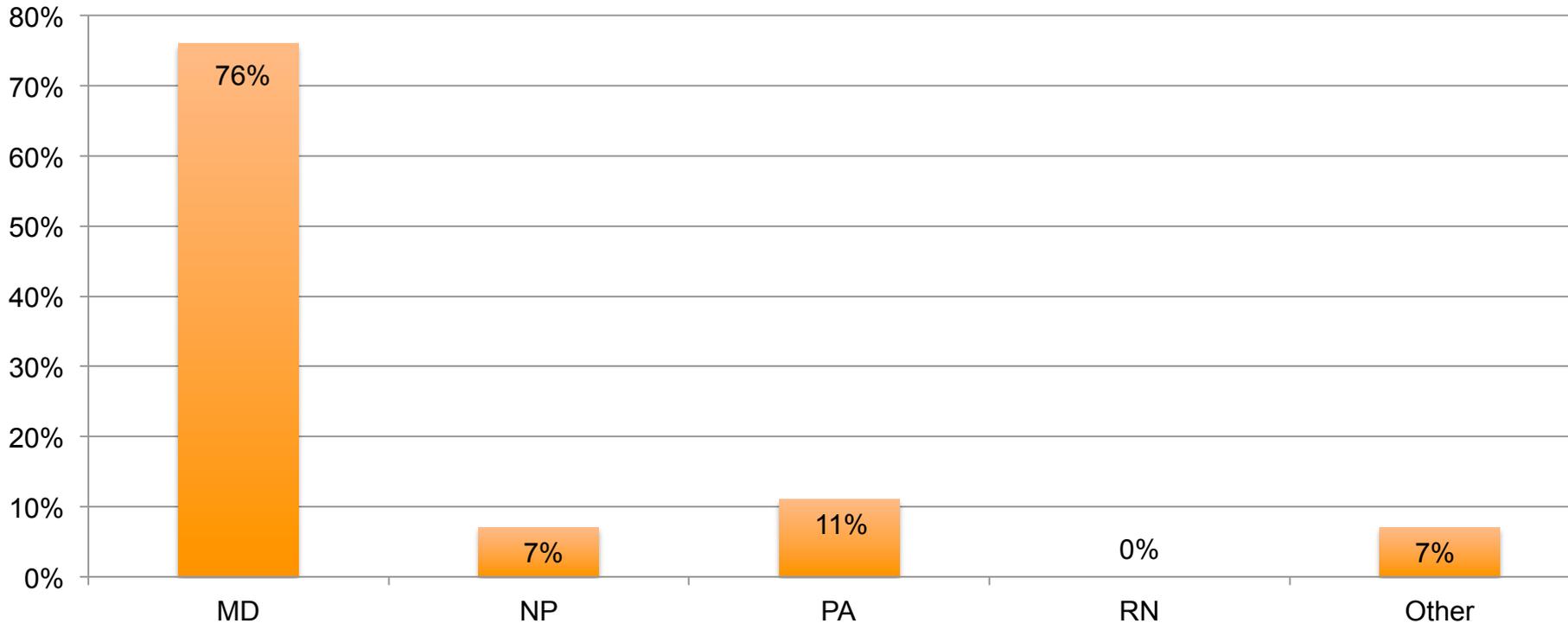
Consistent with the policies of the ACCME, NACE evaluates the effectiveness of all CME activities using a systematic process based on the following model:

1. Participation
2. Satisfaction
3. Learning
 - A. Declarative Knowledge
 - B. Procedural Knowledge
4. Competence
5. Performance
6. Patient Health
7. Community Health

Moore DE Jr, Green JS, Gallis HA. Achieving desired results and improved outcomes: integrating planning and assessment throughout learning activities. J Contin Educ Health Prof. 2009 Winter;29(1):1-15.

Level 1: Participation

- 129 attendees
- 76% Physicians; 7% NPs; 11% PAs; 0% RNs; 7% Other
- Over 46% in community-based practice
- 45% PCPs, 33% Pulmonologists; 3% Rheumatology; 3% Dermatology; 16% Other or did not respond



N = 57

Did we reach the right audience? **Yes!**

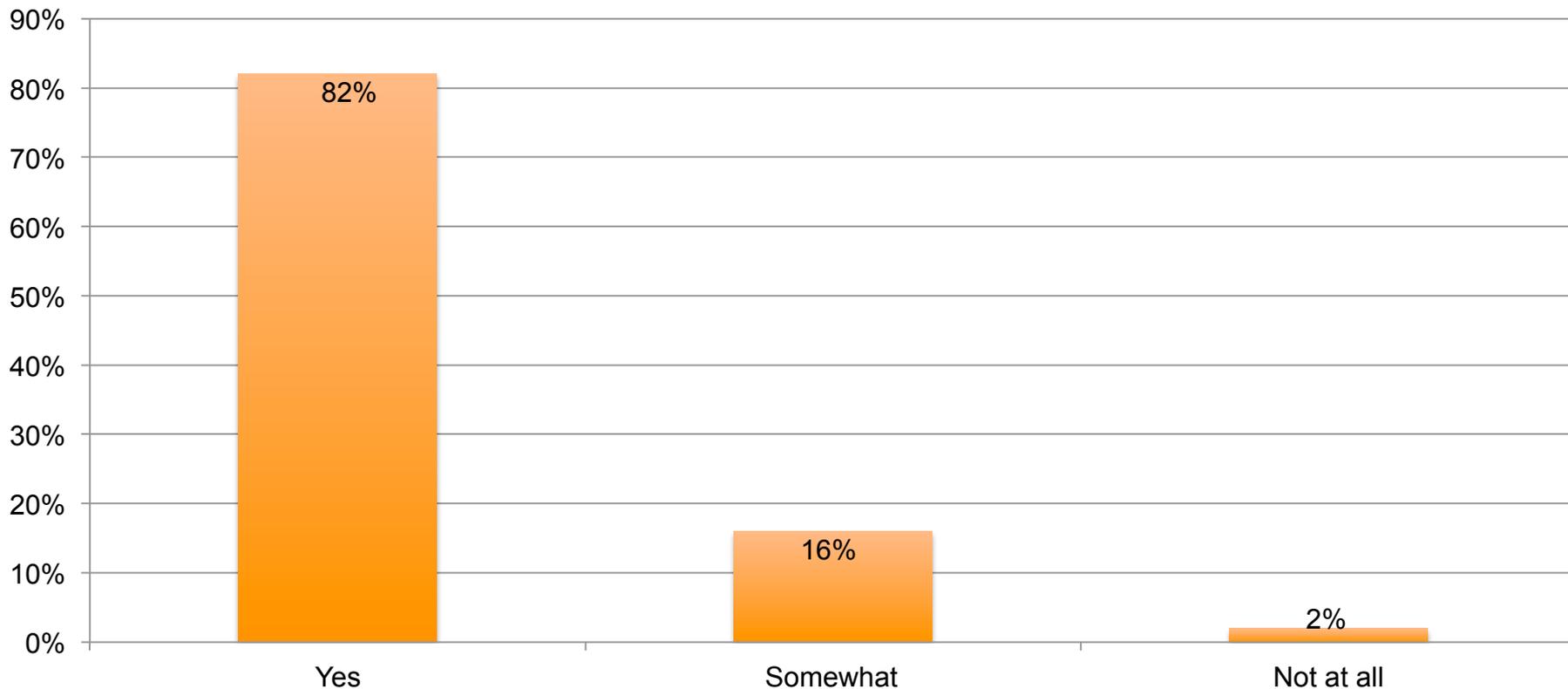
Level 2: Satisfaction

- 100% rated the activity as very good to excellent
- 98% indicated the activity improved their knowledge
- 96% stated that they learned new strategies for patient care
- 79% said they would implement new strategies that they learned in their practice
- 100% said the program was fair-balanced and unbiased

Were our learners satisfied? **Yes!**

Level 2: Satisfaction

Upon completion of this activity, I can now – Address the diagnosis of pulmonary embolism (PE) and chronic thromboembolic pulmonary hypertension (CTEPH) with emphasis on the role of the ventilation perfusion (VQ) scan; Describe the current management of PE; Explain surgical and new therapeutic options for CTEPH.



Did learners indicate they achieved the learning objectives? **Yes! 98% believed they did.**

Outcome Study Methodology

Goal

To determine the effect this CME activity had on learners with respect to competence to apply critical knowledge, confidence in treating patients with diseases or conditions discussed, and change in practice behavior.

Dependent Variables

1. Level 3-5: Knowledge, Competence, and Performance

Case-based vignettes and pre- and post-test knowledge questions were asked with each session in the CME activity. Identical questions were also asked to a sample of attendees 4 weeks after the program to assess retention of knowledge. Responses can demonstrate learning and competence in applying critical knowledge. The use of case vignettes for this purpose has considerable predictive value. Vignettes, or written case simulations, have been widely used as indicators of actual practice behavior.¹

2. Practitioner Confidence

Confidence with the information relates directly to the likeliness of actively using knowledge. Practitioner confidence in his/her ability to diagnose and treat a disease or condition can affect practice behavior patterns.

3. Level 5: Self-Reported Change in Practice Behavior

Four weeks after CME activity, practitioners are asked if they changed practice behavior.

1. Peabody, J.W., J. Luck, P. Glassman, S. Jain, J. Hansen, M. Spell and M. Lee (2004). *Measuring the quality of physician practice by using clinical vignettes: a prospective validation study*. Ann Intern Med 14(10): 771-80.

Outcome Study Methodology (Cont.)

4. Readiness to Change Behavior (Prochaska and DeClemente Model)

CME activities can motivate providers to move through different stages of change which can ultimately lead them to take action and modify their practice behavior in accordance with the objectives of the education. Movement through these stages of change is an important dependent variable to consider in evaluating the impact of CME. Participants were asked to evaluate their stage of change with respect to specific topics being presented.

- **Pre-contemplation stage:** I do not manage (XXX illness), nor do I plan to this year.
- **Contemplation stage:** I did not manage (XXX illness) before this course, but as a result of attending this course I'm thinking of managing it now.
- **Pre-contemplation/confirmation stage:** I do manage patients with (XXX Illness) and this course confirmed that I do **not** need to change my treatment methods.
- **Preparation for action stage:** I do manage patients with (XXX illness) and this course helped me change my treatment methods.

Update in PE and CTEPH

Faculty

Charles D. Burger, MD
Division of Pulmonary Medicine
Department of Internal Medicine Mayo Clinic
Professor of Medicine, Mayo Clinic College of Medicine
Medical Director, Pulmonary Hypertension Clinic
Mayo Clinic Florida
Jacksonville, FL

Learning Objectives

- Address the diagnosis of pulmonary embolism (PE) and chronic thromboembolic pulmonary hypertension (CTEPH) with emphasis on the role of the ventilation perfusion (VQ) scan;
- Describe the current management of PE
- Explain surgical and new therapeutic options for CTEPH

Key Findings

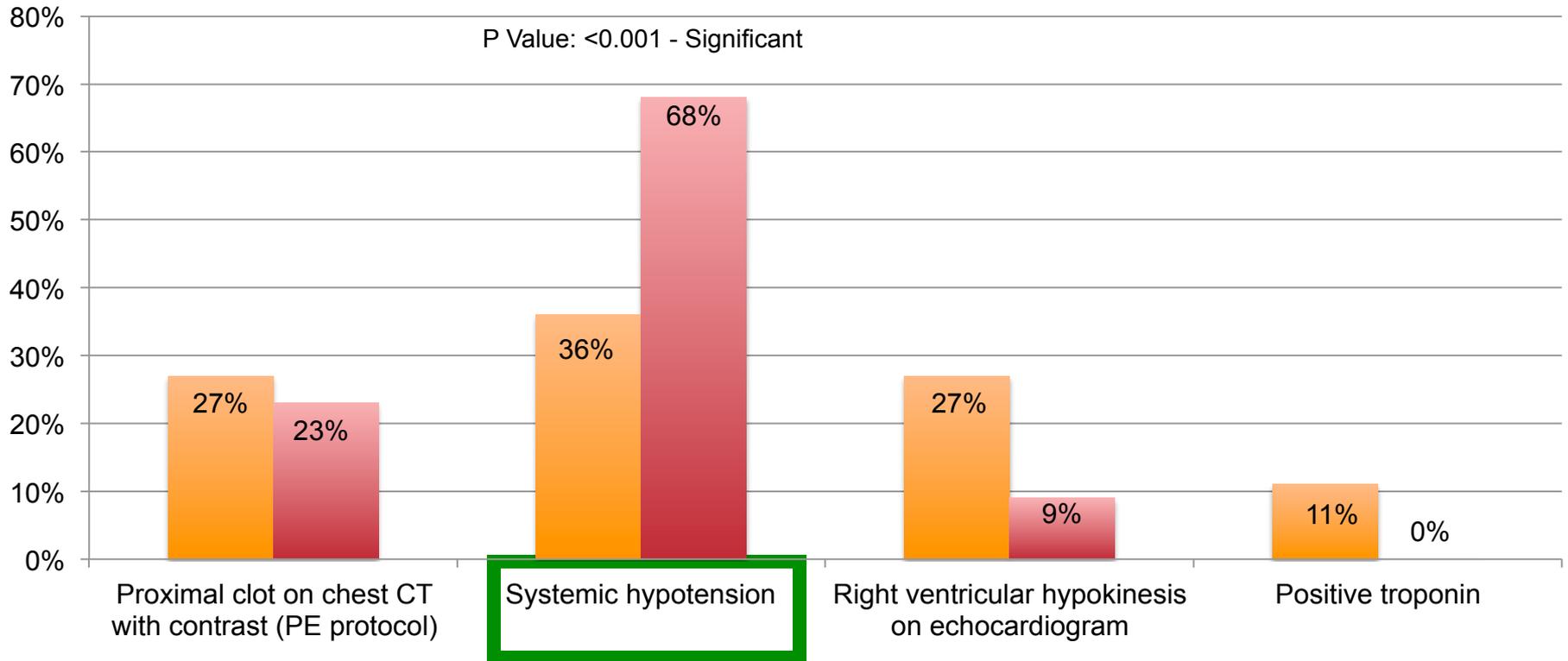
Update in PE and CTEPH

Knowledge/Competence	Learners demonstrated significant improvement in their answers from pre to post-testing on two of the three case-based questions regarding Pulmonary Embolism (PE) and Chronic Thromboembolic Pulmonary Hypertension (CTEPH).
Confidence	Whereas the majority of learners rated themselves as having low confidence in their understanding of treating Pulmonary Embolism (PE) and Chronic Thromboembolic Pulmonary Hypertension (CTEPH) before the education most of the learners showed gains in confidence after the program.
Intent to Perform	As a result of this program, 9% of learners who did not manage Pulmonary Embolism (PE) and Chronic Thromboembolic Pulmonary Hypertension (CTEPH) before are considering doing so, while 48% indicated that they will change their treatment methods.
Change of Practice Behavior N=61	88% of learners who responded to our four week survey indicated that they had changed their practice behavior to implement the learning objectives of this program within four weeks after they attended the activity.

Case Vignette Knowledge and Competence Assessment Questions

(Presented before and after lecture. Boxed answer is correct.)

What is the Best Indication for Thrombolytic Therapy in Acute PE?



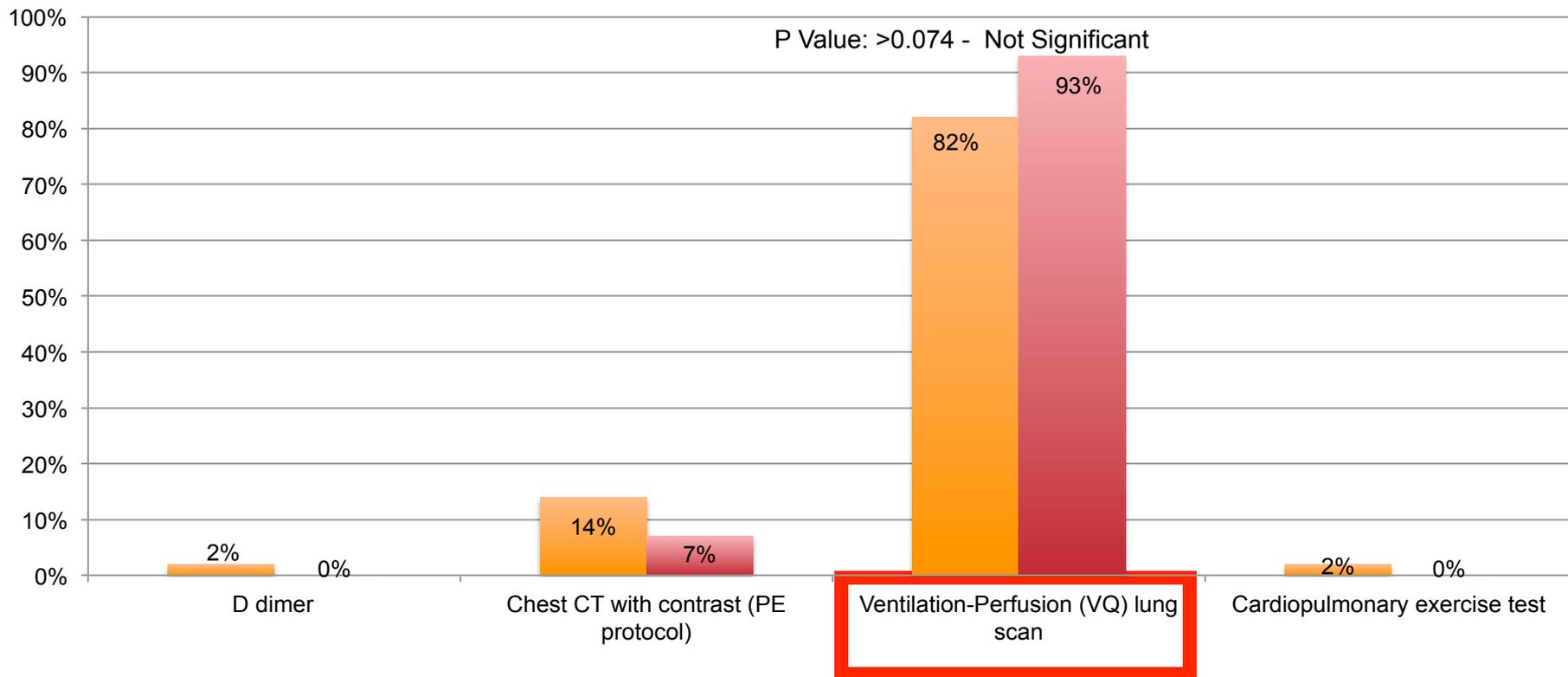
N =45

Green highlight indicates significant difference between pre and post testing.

Case Vignette Knowledge and Competence Assessment Questions

(Presented before and after lecture. Boxed answer is correct.)

What is the Best Test for Chronic Thromboembolic Disease PH?



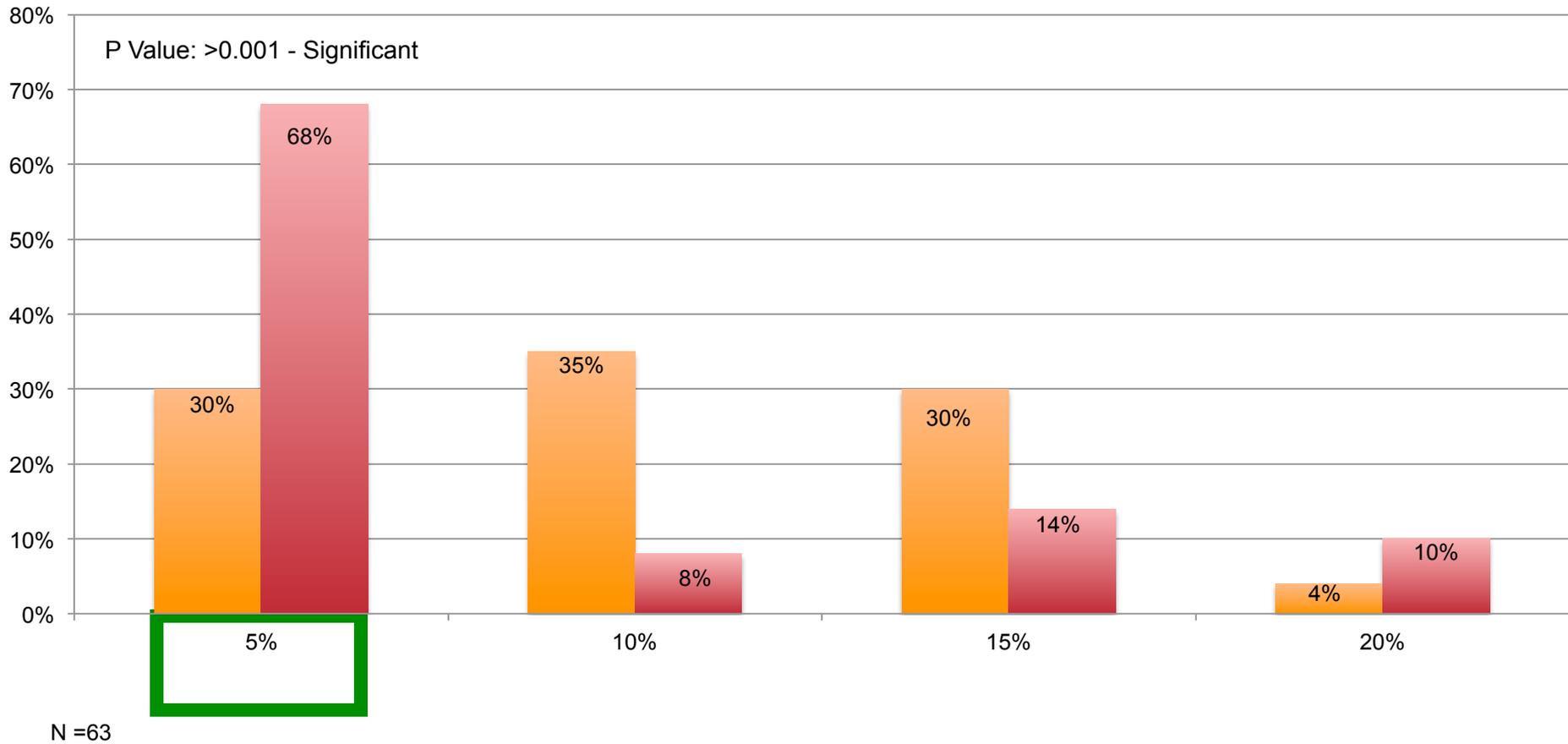
N =59

Red highlight indicates no significant difference between pre and post testing.

Case Vignette Knowledge and Competence Assessment Questions

(Presented before and after lecture. Boxed answer is correct.)

What is the Mortality for Pulmonary Thromboendarterectomy?

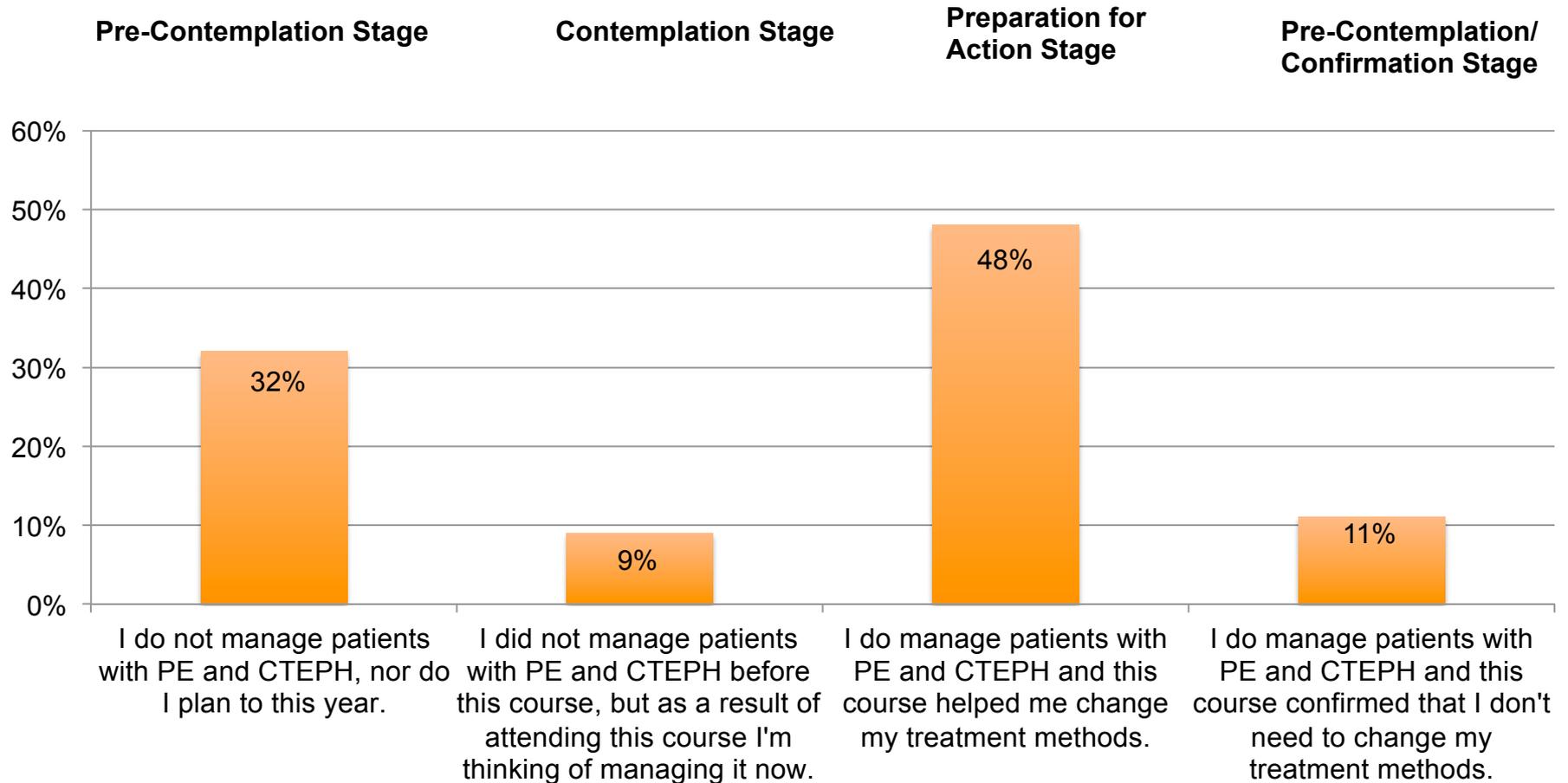


Green highlight indicates significant difference between pre and post testing.

Change in Practice Behavior Question

Presented after lecture.

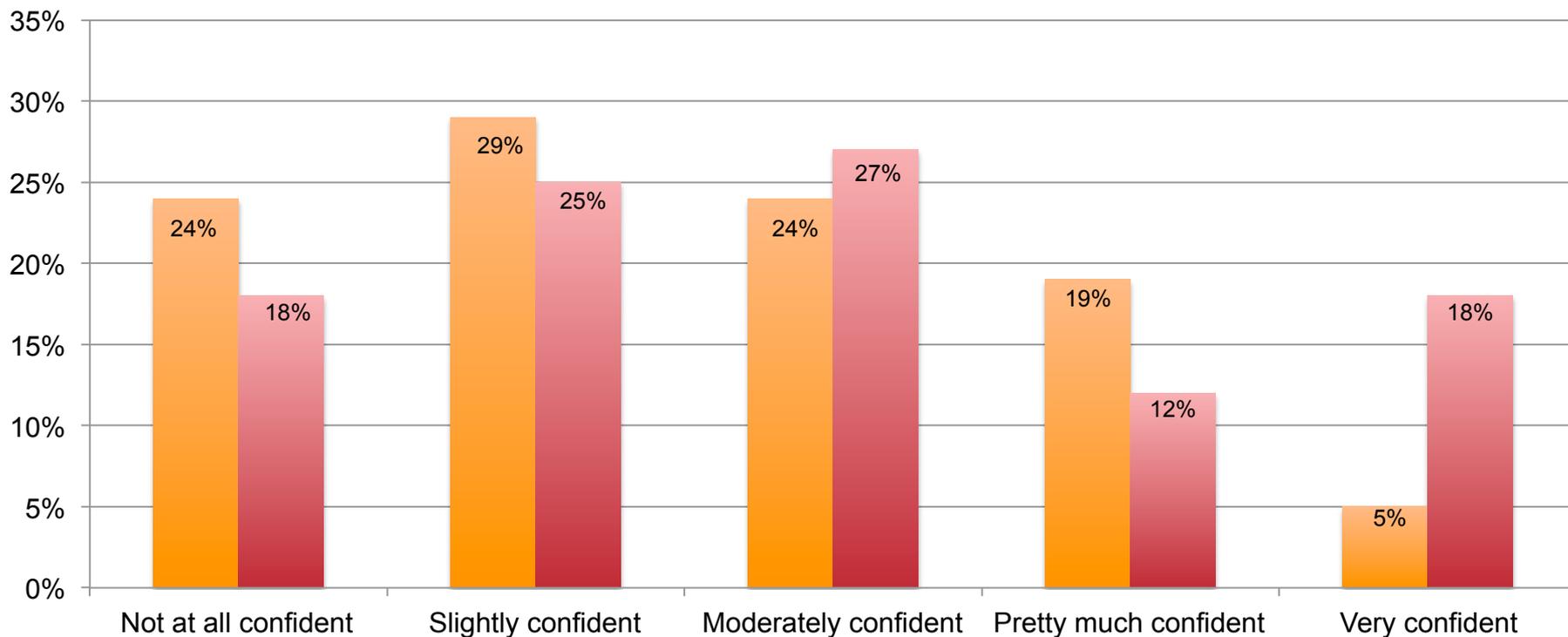
Which of the statements below describes your approach to diagnosing and treating patients with PE and CTEPH?



Changes in Confidence from Pre to Post-Testing

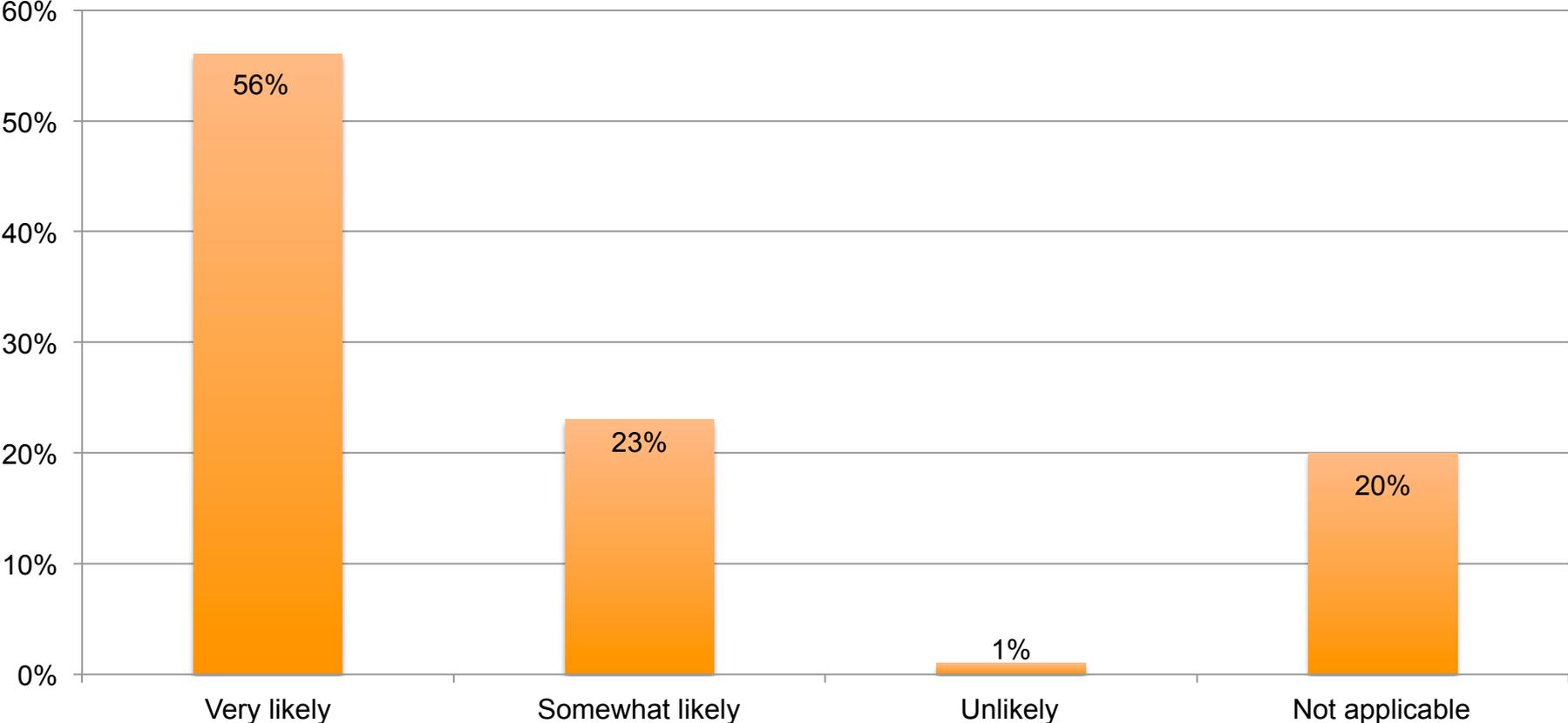
Update in PE and CTEPH

On a scale of 1 to 5: Please rate how confident you would be treating a patient with PE and CTEPH?



N = 51

Intention to Change Practice Behavior and Implement Learning



N =119

Discussion and Implications

Update in PE and CTEPH

Obstruction of the pulmonary vascular bed by non-resolving thromboemboli can lead to chronic thromboembolic pulmonary hypertension (CTEPH). The increased pulmonary vascular resistance leads to progressive pulmonary hypertension (PH) and right heart failure. CTEPH can develop following acute PE, recurrent PE, or DVT. The objective of this activity was to enable attendees to explain, discuss therapy for patients with CTEPH, and examine novel therapies and future directions.

Knowledge/Competence: Attendee knowledge was assessed at 2 points for this activity—prior to and immediately following the activity using the case vignettes and questions described earlier. The results indicated an improvement in knowledge in all four questions asked, in a statistically significant manner.

Readiness for Practice Change: Forty-eight percent of attendees noted that they currently treat patients with CTEPH and that this course provided information that would lead to changes in their treatment methods for this condition. Nine percent indicated that they did not treat patients with CTEPH/PE prior to taking this course, but would do consider doing so after having been exposed to the information taught.

Confidence: Participants indicated an increase in self-reported confidence levels in managing patients with CTEPH with a notable increase in the very confident category from 5 to 18%.

Change in Practice Behavior: Fifty-six percent of participants reported that they were very likely to utilize information learned from this activity in their practice.

Summary: Future programming should continue to educate clinicians on current practices in diagnosis as well as new, effective therapies for CTEPH.