

# Effectiveness of Medical Education at Improving Physician Knowledge, Competence, and Confidence of Pulmonary Arterial Hypertension Treatment Approaches

**Margaret Harris, PhD; Kelly Hanley; Alison O'Connor; Catherine C. Capparelli, MBA, CHCP:** Medscape Education, NY, New York;  
**Victor Hatcher, PhD; Stacy Atkinson, MS, CMP, CHCP:** Center for Continuing Medical Education, Albert Einstein College of Medicine, Montefiore Medical Center;  
**Murali Chakinala, MD:** Washington University, St. Louis, Missouri; **Martha Kingman, FNP, DNP:** University of Texas, Dallas, Texas; **Vallerie V. McLaughlin, MD:** University of Michigan, Ann Arbor, Michigan

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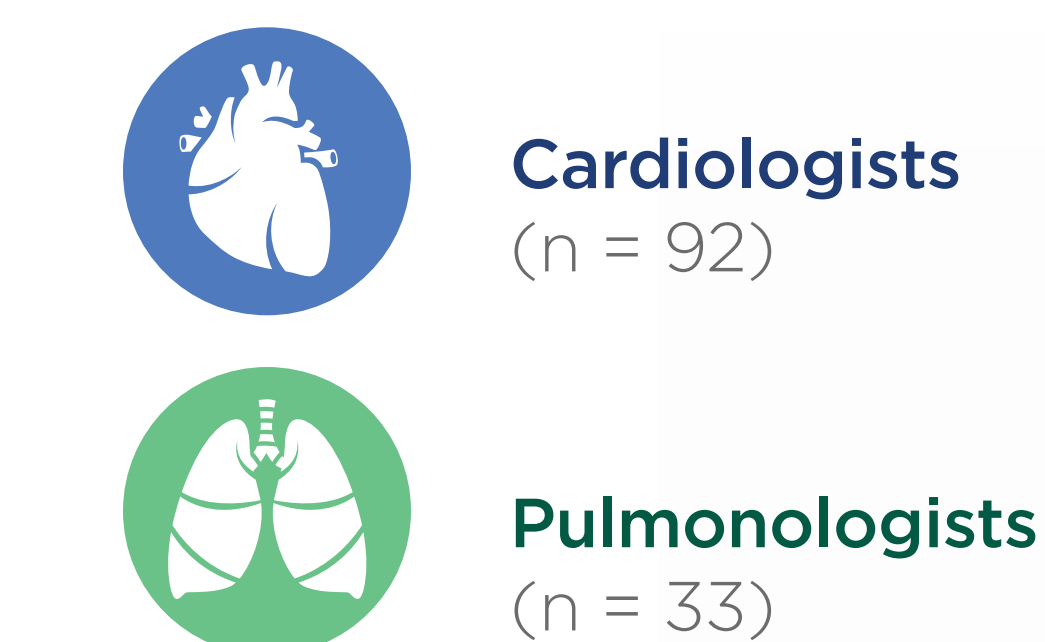
## BACKGROUND

We sought to determine if online continuing medical education (CME) could improve the knowledge, competence and confidence of cardiologists and pulmonologists related to the use of prostacyclin therapy for the treatment of pulmonary arterial hypertension (PAH).



## METHODS

This CME intervention comprised of a 30-minute online video-based roundtable discussion between 3 expert faculty. Educational effect was assessed using a repeated-pair design with pre-/post-assessment. Three multiple choice questions assessed knowledge and competence, and 1, rated on a Likert-type scale, assessed confidence. A paired samples t-test was conducted on overall average number of correct responses and for confidence rating, and a McNemar's test was conducted at the question level (significance level,  $P < .05$ ). The activity launched June 5, 2023 and data were collected through August 29, 2023.

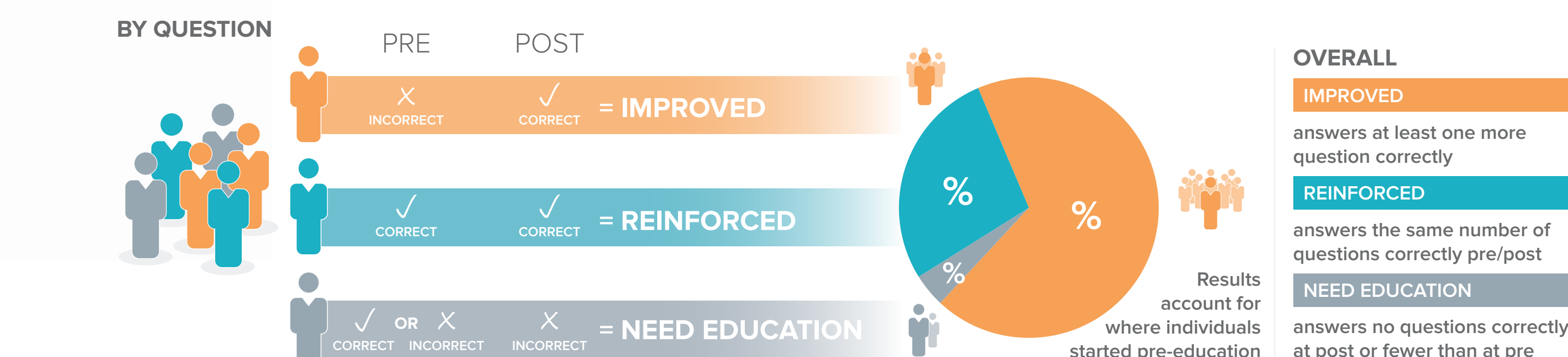


## How to Read the Linked Learner Assessment

**OUTCOMES COMPLETERS**  
Each individual completed BOTH the pre and post-education questions – *SAME individuals pre and post-education*



**LINKED LEARNER**  
Each individual tracked pre and post-education – *Learners serve as their own controls*

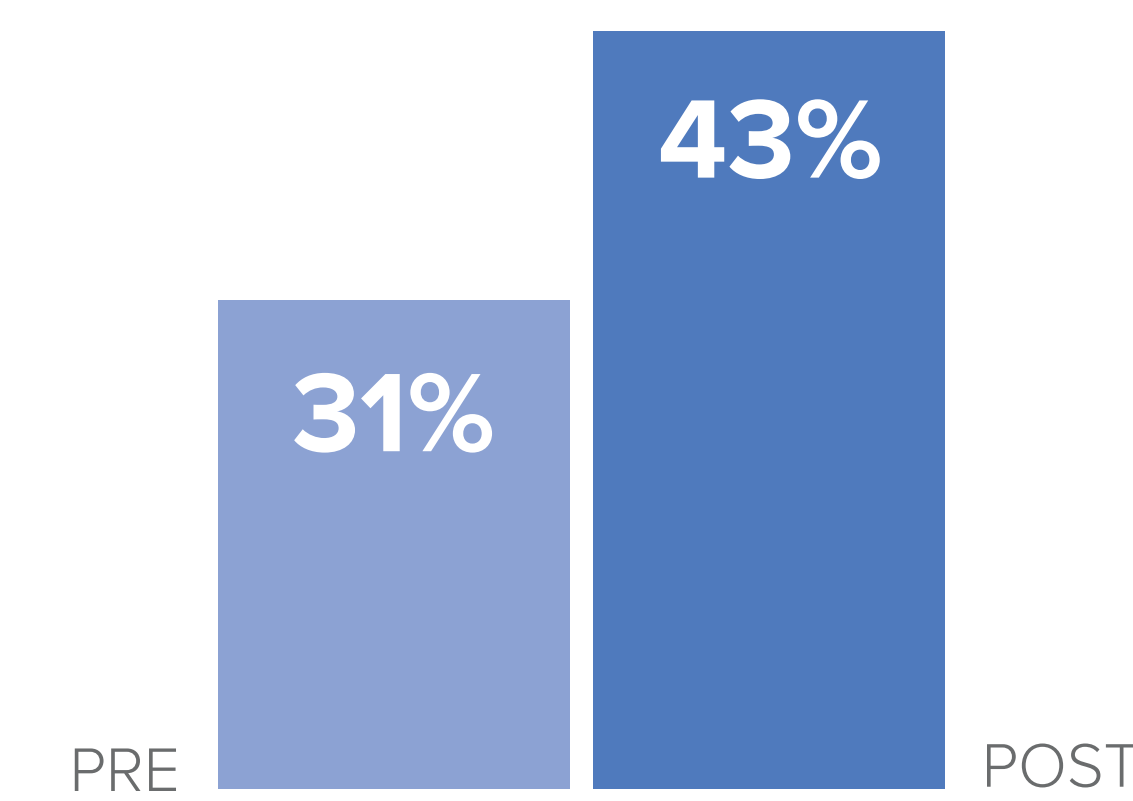


## RESULTS

### OVERALL

**Cardiologists (n = 92)**

**AGGREGATED RESULTS**

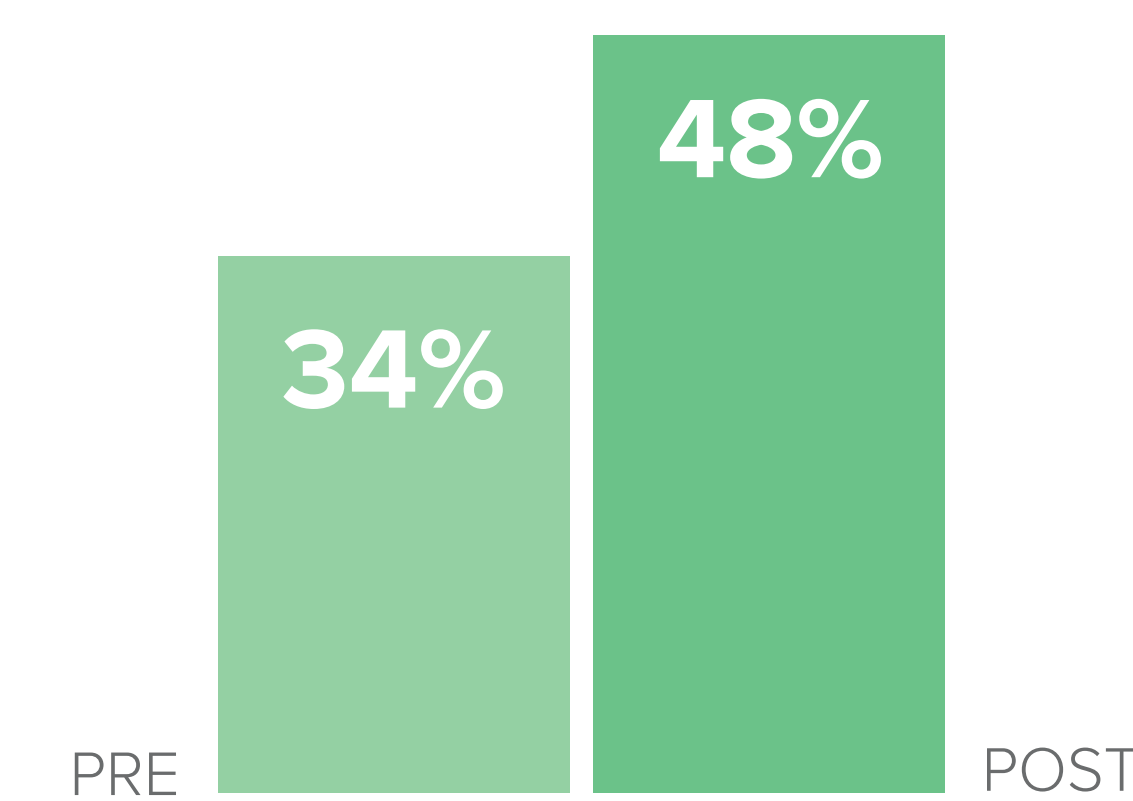


**CHI-SQUARE TEST  $P < .001$**

SIGNIFICANCE ( $P < .05$ )

**Pulmonologists (n = 33)**

**AGGREGATED RESULTS**



**CHI-SQUARE TEST  $P < .001$**

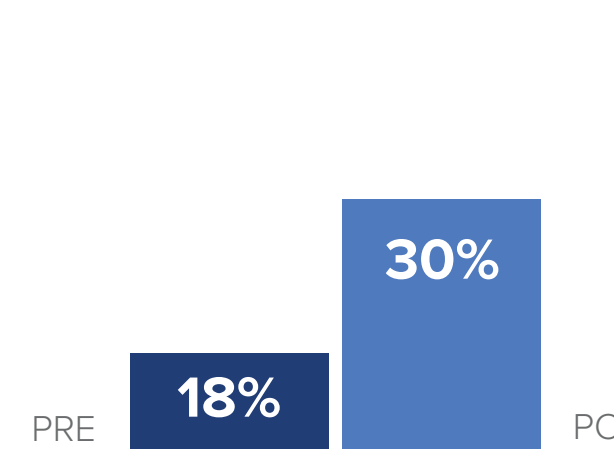
SIGNIFICANCE ( $P < .05$ )

### QUESTION 1 RESULTS

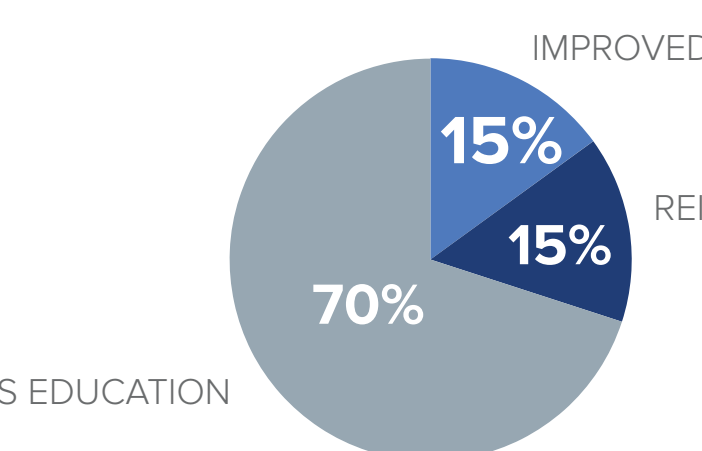
Knowledge regarding the long-term benefits of prostacyclin therapy for the treatment of PAH.

**Cardiologists (n = 92)**

**AGGREGATED RESULTS**



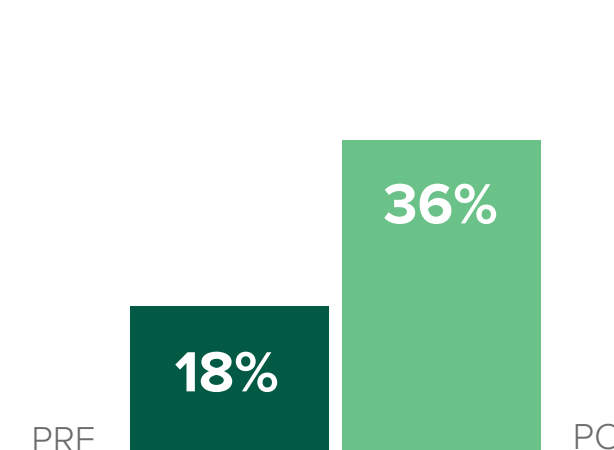
**LINKED LEARNING RESULTS**



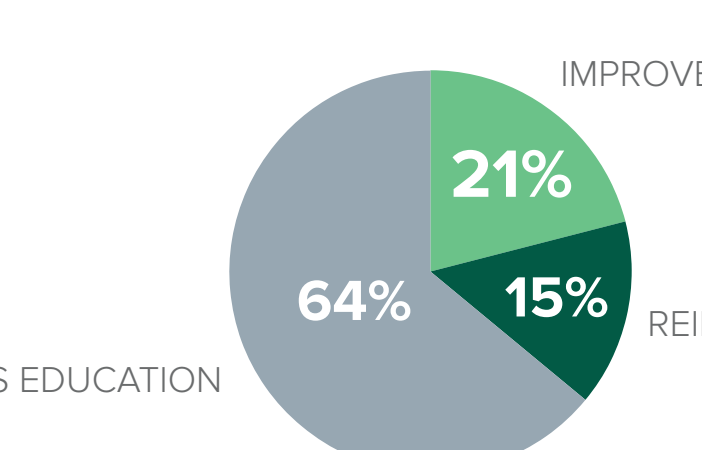
$P < .01$

**Pulmonologists (n = 33)**

**AGGREGATED RESULTS**



**LINKED LEARNING RESULTS**



$P < .05$

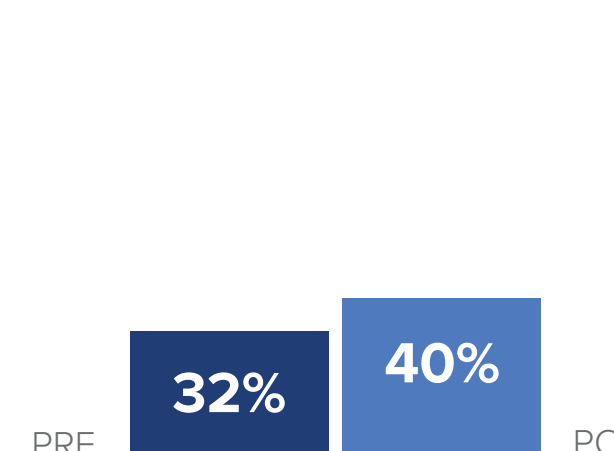
**QUESTION:** A patient was just diagnosed with pulmonary arterial hypertension (PAH). She does not have any cardiopulmonary comorbidities but is deemed high-risk. What is the best initial treatment for this patient according to the European Society of Cardiology (ESC)/European Respiratory Society (ERS) guidelines? (Correct Answer: ERA plus PDE5 inhibitor and intravenous (IV)/subcutaneous (SC) prostacyclin analog)

### QUESTION 3 RESULTS

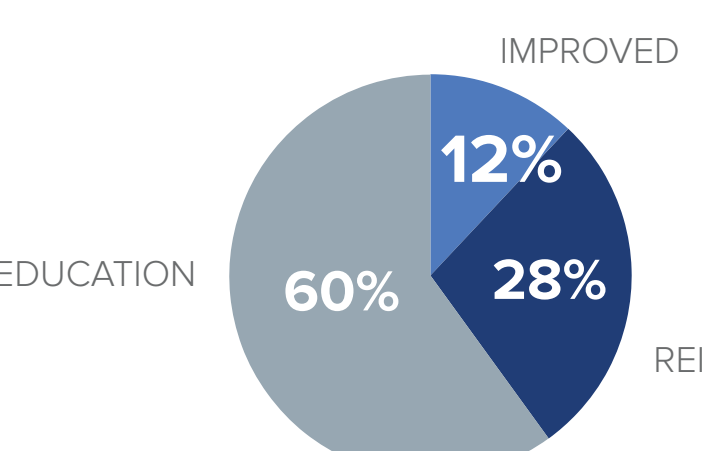
Competence related to communication with patients about risks/benefits of prostacyclin therapy for PAH treatment.

**Cardiologists (n = 92)**

**AGGREGATED RESULTS**



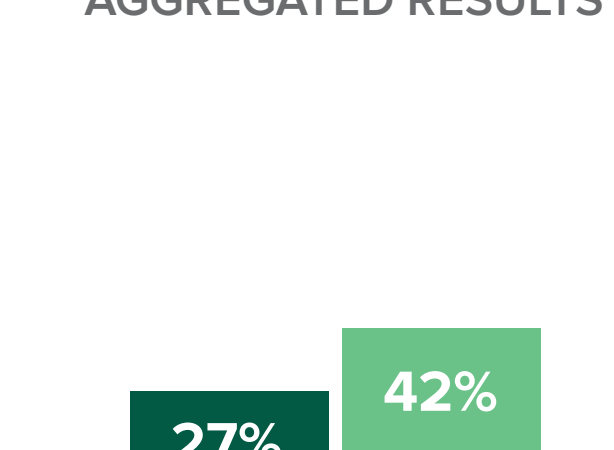
**LINKED LEARNING RESULTS**



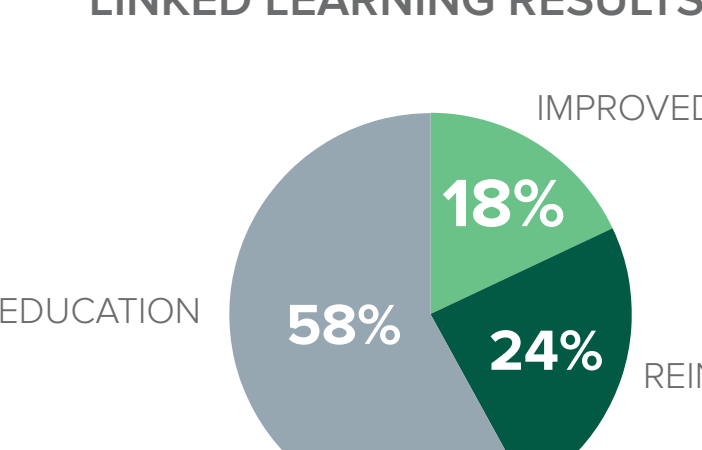
$P < .05$

**Pulmonologists (n = 33)**

**AGGREGATED RESULTS**



**LINKED LEARNING RESULTS**



$P = .058$

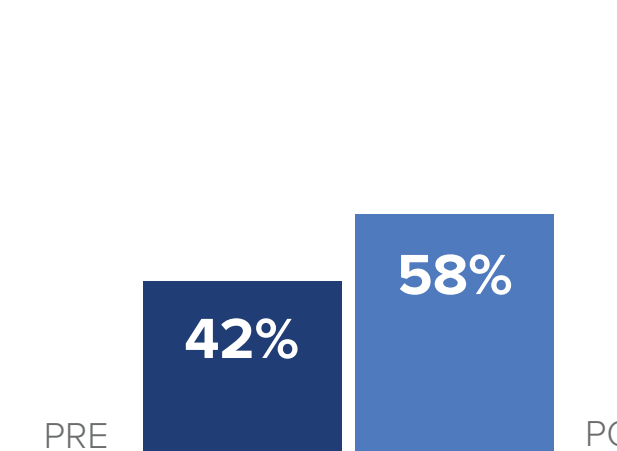
**QUESTION:** A patient diagnosed with PAH was started on tadalafil and macitentan. After being unable to tolerate tadalafil, she was started on treprostinil instead while still taking macitentan. What is the best next step in managing this patient? (Correct Answer: Educate the patient on medication compliance)

### QUESTION 2 RESULTS

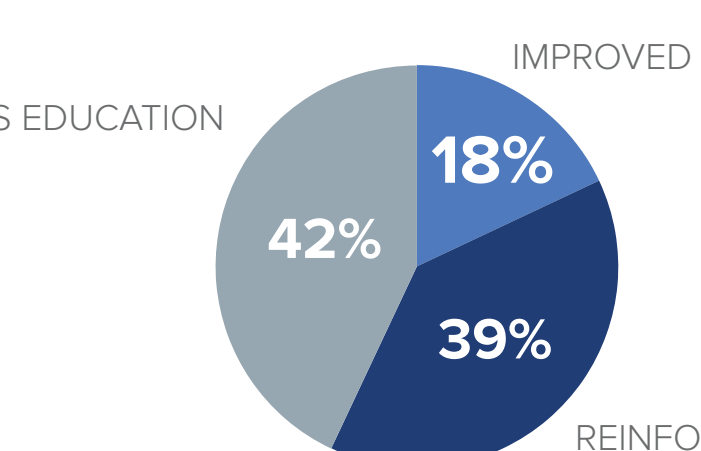
Competence related to appropriate use of prostacyclin therapy in patients with PAH.

**Cardiologists (n = 92)**

**AGGREGATED RESULTS**



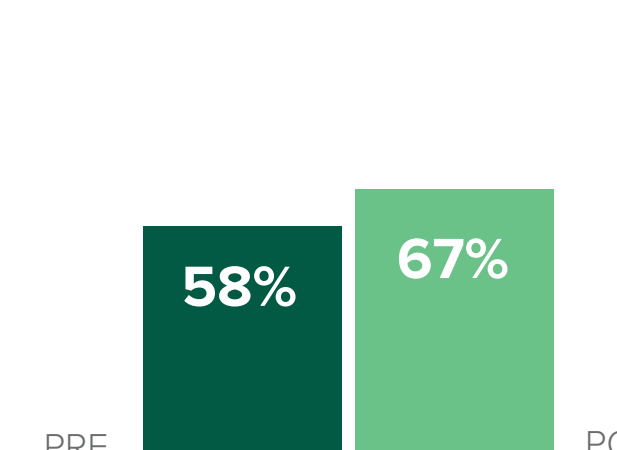
**LINKED LEARNING RESULTS**



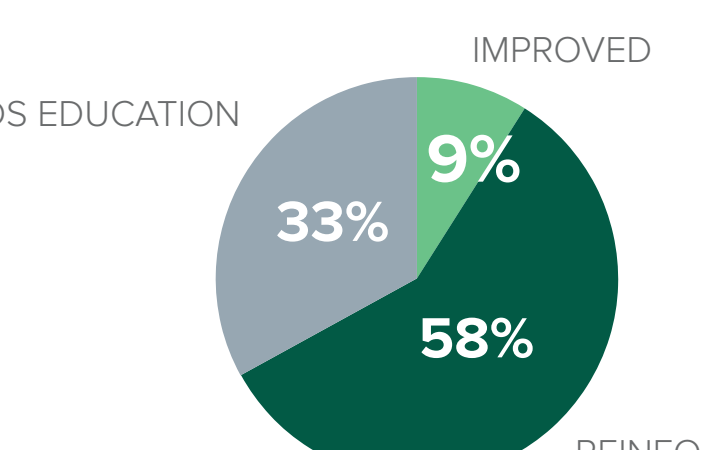
$P < .01$

**Pulmonologists (n = 33)**

**AGGREGATED RESULTS**



**LINKED LEARNING RESULTS**



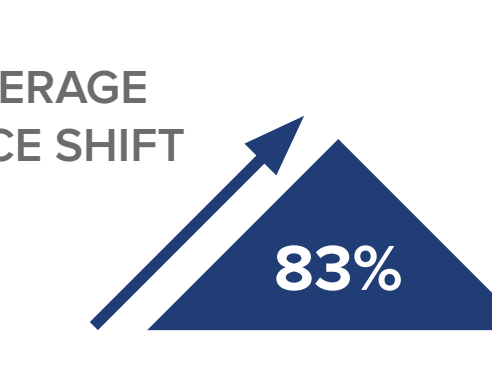
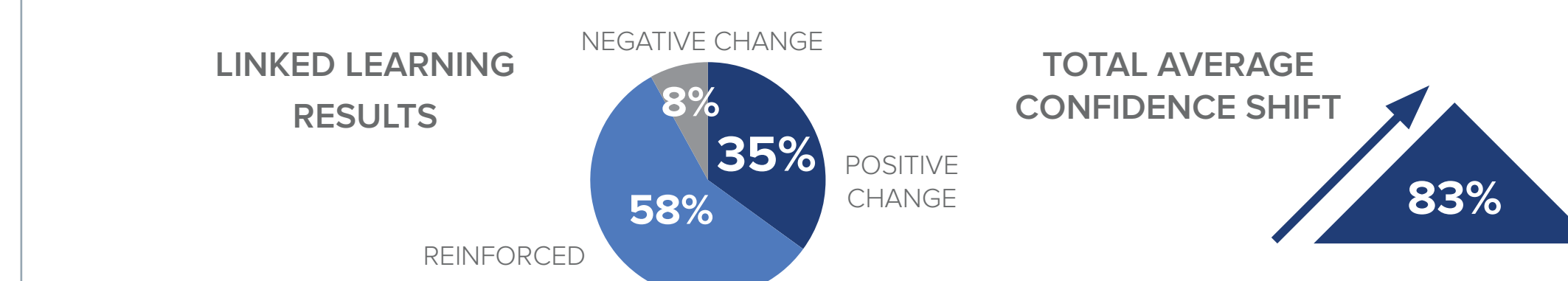
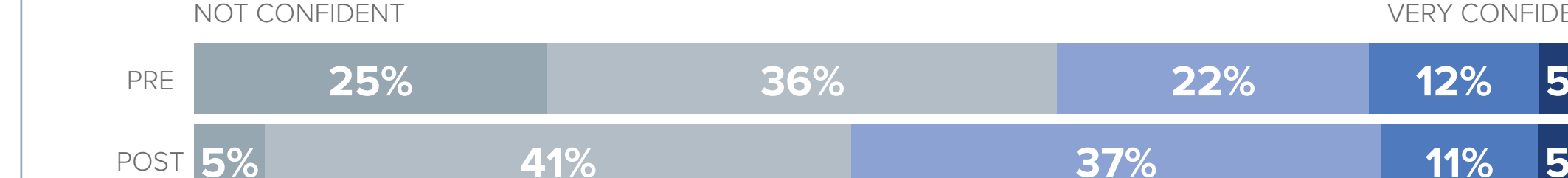
$P = .083$

**QUESTION:** After regular follow-up assessment, your patient remains at intermediate-low risk status despite initial therapy with an ERA and PDE5 inhibitor. What is the best next step in treating this patient according to ESC/ERS guidelines? (Correct Answer: Add a prostacyclin receptor agonist)

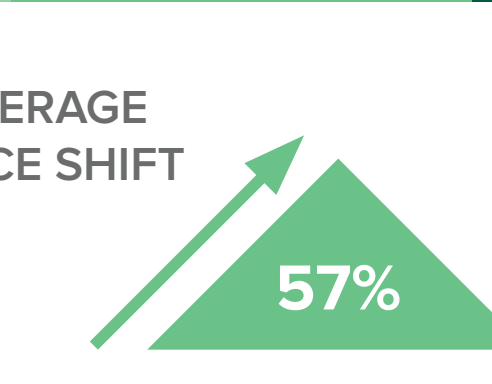
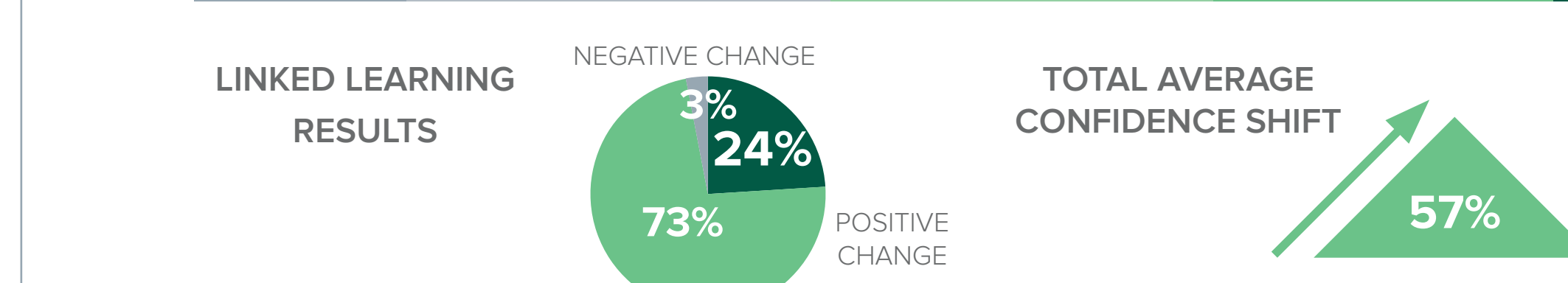
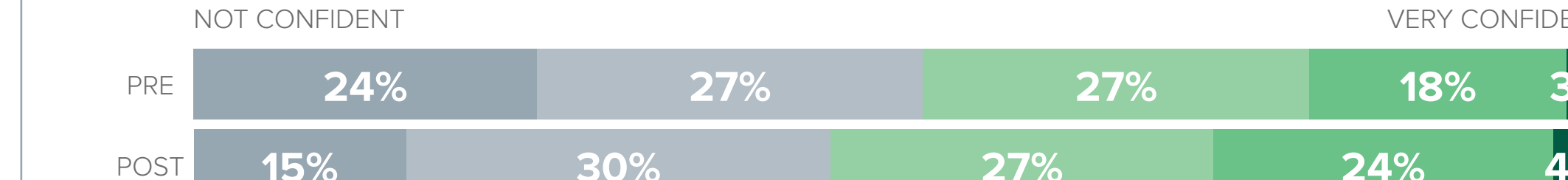
### CONFIDENCE ANALYSIS

Confidence in ability to collaborate with the interprofessional team to improve/address patient adherence to prostacyclin therapy ( $P < .05$ ).

**Cardiologists (n = 92)**



**Pulmonologists (n = 33)**



**QUESTION:** How confident are you right now in your ability to collaborate with the interprofessional team to improve/address patient adherence to prostacyclin therapy? (Select ranking from 1 [Not confident] to 5 [Very confident])

## CONCLUSIONS

This study demonstrates the success of online CME on improving knowledge, competence, and confidence of physicians related to the use of prostacyclin therapy for PAH management. Continued gaps were identified for future educational targets.

### ACKNOWLEDGEMENTS

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For more information, contact:

Margaret Harris, PhD, Director, Clinical Strategy  
mharris@medscape.net



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