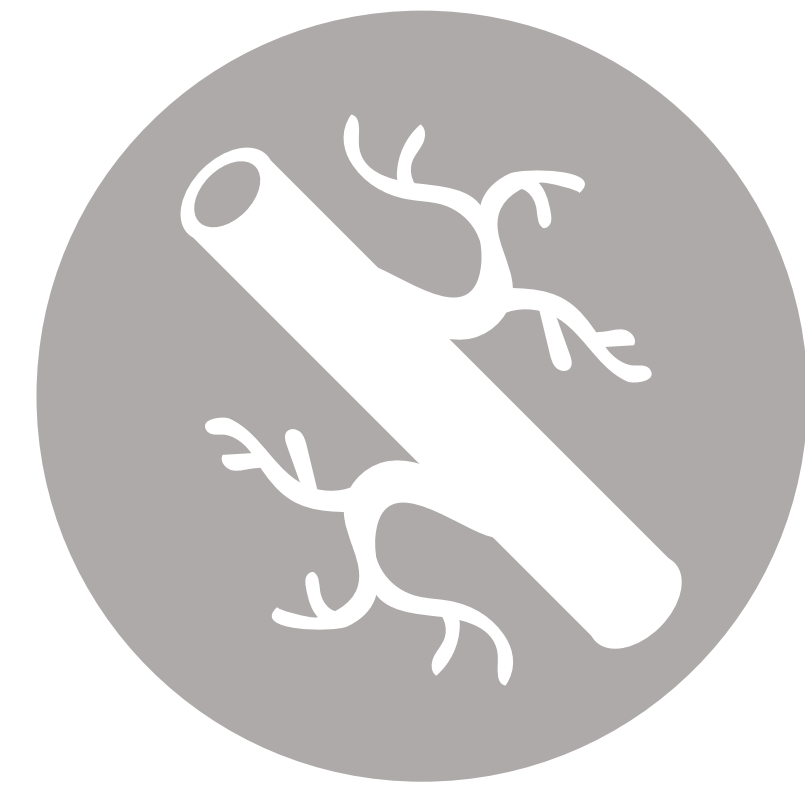


# Virtual Patient Simulation in Continuing Education: Improving the Use of Guideline-Directed Care in VTE Treatment

JELENA S. SPYROPOULOS, PHD, DOUGLAS BLEVINS, MD, MARTIN WARTERS, MA, CHSE, DAVID ANDERSON, Medscape, LLC, New York, NY

## BACKGROUND

- Virtual patient simulation (VPS) is a technologically-enhanced educational tool that supports translation of knowledge into clinical competence and performance by providing consequence-free opportunities for clinicians to make patient care and disease management decisions.



- This study was conducted to determine if an online, virtual patient simulation (VPS)-based continuing medical education (CME) intervention could improve performance of hematologists/oncologists (hem/oncs) and cardiologists in managing patients with VTE

## METHODS

- The CME intervention consisted of 2 cases presented in a VPS platform that allowed learners to order lab tests, identify diagnoses, and select treatments in a manner matching the scope and depth of actual practice<sup>3</sup> (Figure 1)

- Clinical decisions made by the learners using open field entries within an electronic health record interface were analyzed using an artificial intelligence engine and, after each decision, tailored clinical guidance (CG) based on current evidence and expert recommendation was provided

- Learner decisions were collected post-CG and compared with each user's baseline (pre-CG) data using a 2-tailed paired t-test to determine significance

## CONCLUSION

- This study demonstrated that VPS-based CME that immerses and engages learners in an authentic and practical learning experience can improve evidence-based practices of cardiologists and hem/oncs, and suggests that this type of intervention can improve outcomes for patients with VTE and other diseases

- The study also uncovered educational gaps related to the following topics:
  - Patient assessment to determine appropriate course of action in the setting of PE
  - Use of appropriate anticoagulant therapy in patients with PE
  - Implementation of patient-centered care strategies, including orders for follow up and patient education and counseling

## ACKNOWLEDGEMENTS

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For more information, contact Jelena Spyropoulos, PhD, Director of Clinical Strategy, Medscape, LLC, at [jspyropoulos@medscape.net](mailto:jspyropoulos@medscape.net).

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## RESULTS

**Figure 1. Patient Cases**


**Case 1: Elderly patient with newly diagnosed pulmonary embolus (PE).**



**DOREEN W.**  
CASE SUMMARY

Doreen is an 85-year-old woman who has been treated in this office for many years. She comes in today complaining of right-sided back pain. She does not want to go to the hospital.

**Case 2: Patient with PE and cancer who is currently on low-molecular-weight heparin (LMWH) therapy**

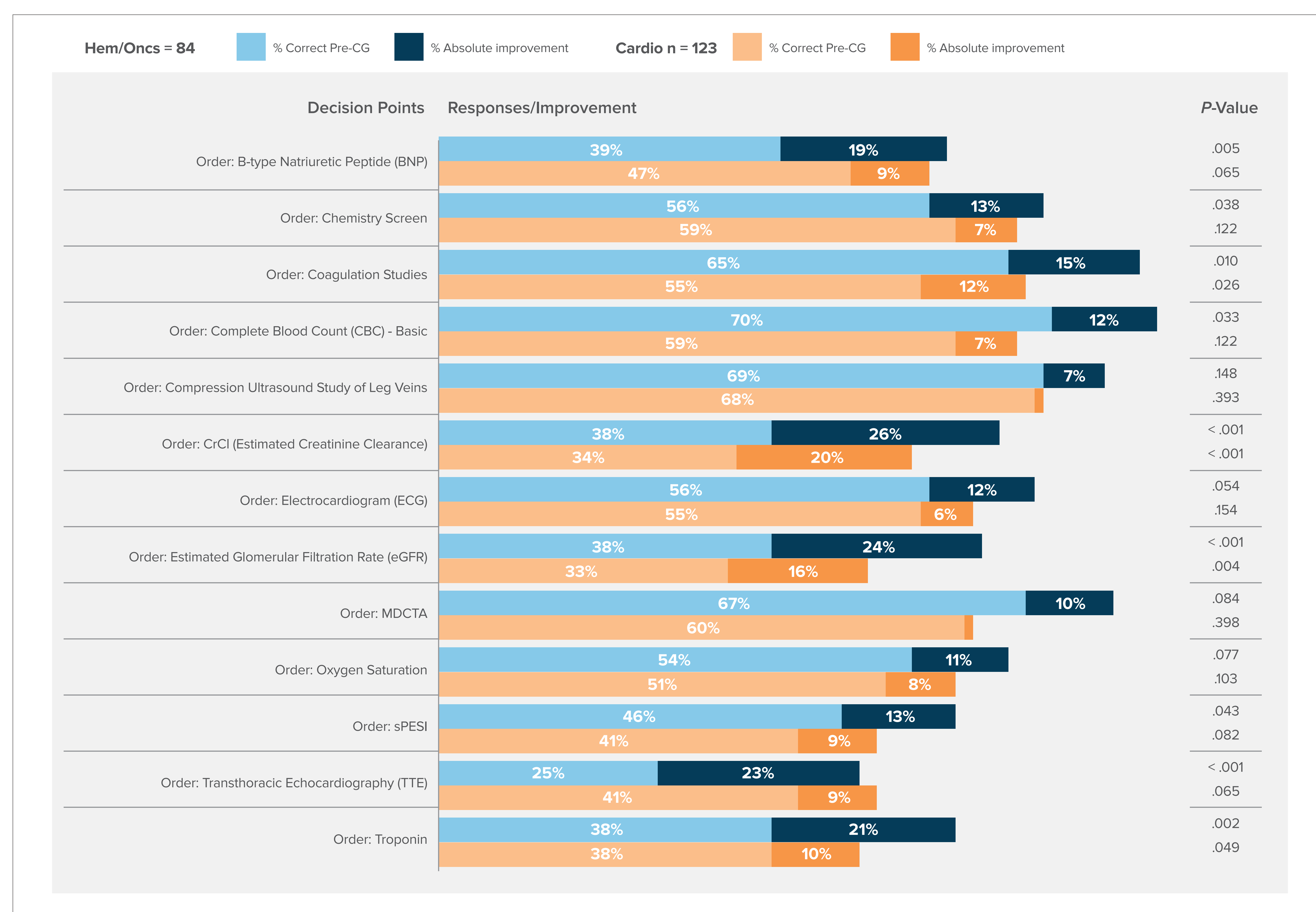


**CLEM F.**  
CASE SUMMARY

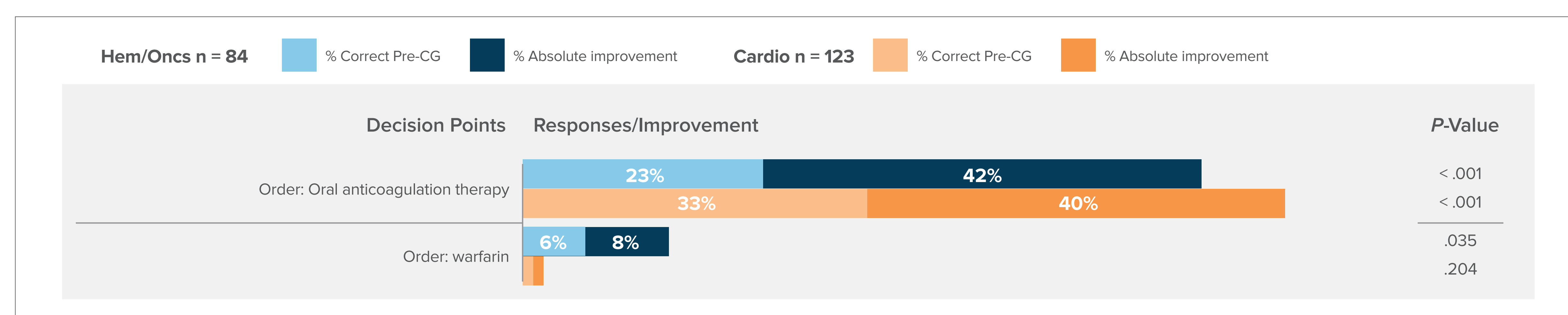
Clem is a 65-year-old man with metastatic colon cancer who was diagnosed with a pulmonary embolism (PE) 6 months ago. He is currently receiving chemotherapy and low molecular weight heparin (LMWH) monotherapy as a treatment for PE.

Improvements were observed after clinical guidance for case 1 – patient with newly diagnosed PE (n=84 hem/oncs; n=123 cardiologists) (Figures 2 and 3):

**Figure 2. Decisions related to patient assessment**

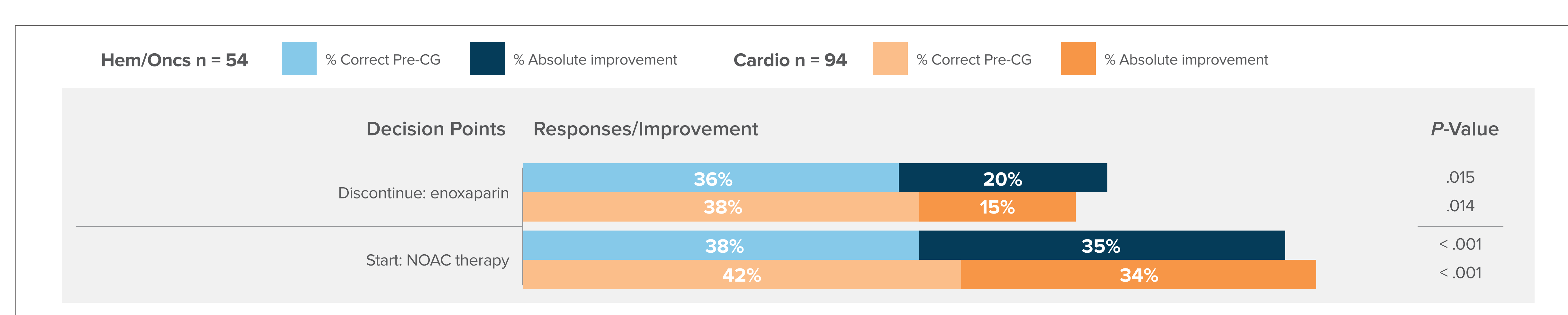


**Figure 3. Decisions related to tailoring anticoagulant therapy**



Improvements were observed after clinical guidance for case 2 – patient with PE and cancer who is currently treated with LMWH therapy (n=54 hem/oncs; n=94 cardiologists) (Figures 4 and 5):

**Figure 4. Decisions related to adjusting anticoagulant therapy in a patient with PE and cancer**



**Figure 5. Decisions related to use of patient-centered care strategies in the setting of PE**

