Virtual Simulation-Based CME Improves Diagnosis and Management of Atrial Fibrillation

MARGARET HARRIS, PhD; MICHAEL LACOUTURE, MA; PHILIPPE GUEDJ; WALID AMARA, MD; JENNIFER S. HAKKARAINEN, BS, PA-C: Medscape Education, New York, NY

BACKGROUND

The ability of virtual patient simulation (VPS) case-based interventions to improve clinical decision making for patients with atrial fibrillation (AF) is unknown.

METHODS

Two patient cases were presented using a VPS platform where learners could order tests, make diagnoses, and order treatments in a manner matching the scope and depth of actual practice. Clinical decisions were analyzed, and learners received clinical guidance (CG) based on current evidence and expert recommendations. Learners could modify their decisions post-CG. Pre-CG (baseline) vs post-CG decisions were compared using McNemar's test. The intervention launched in August 2022 and data were collected through December 2022.
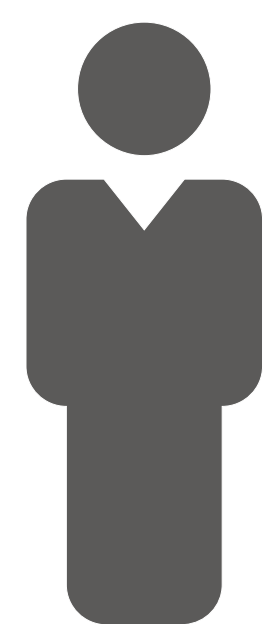
Overall, **1,599** physicians participated.
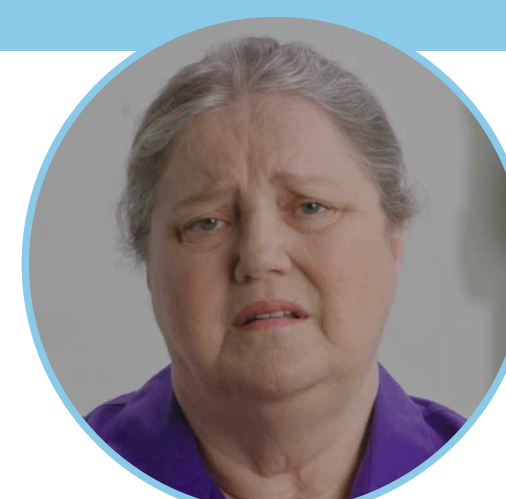
Cardiologists (n = 1,032)

Primary care physicians (PCPs) (n = 567)
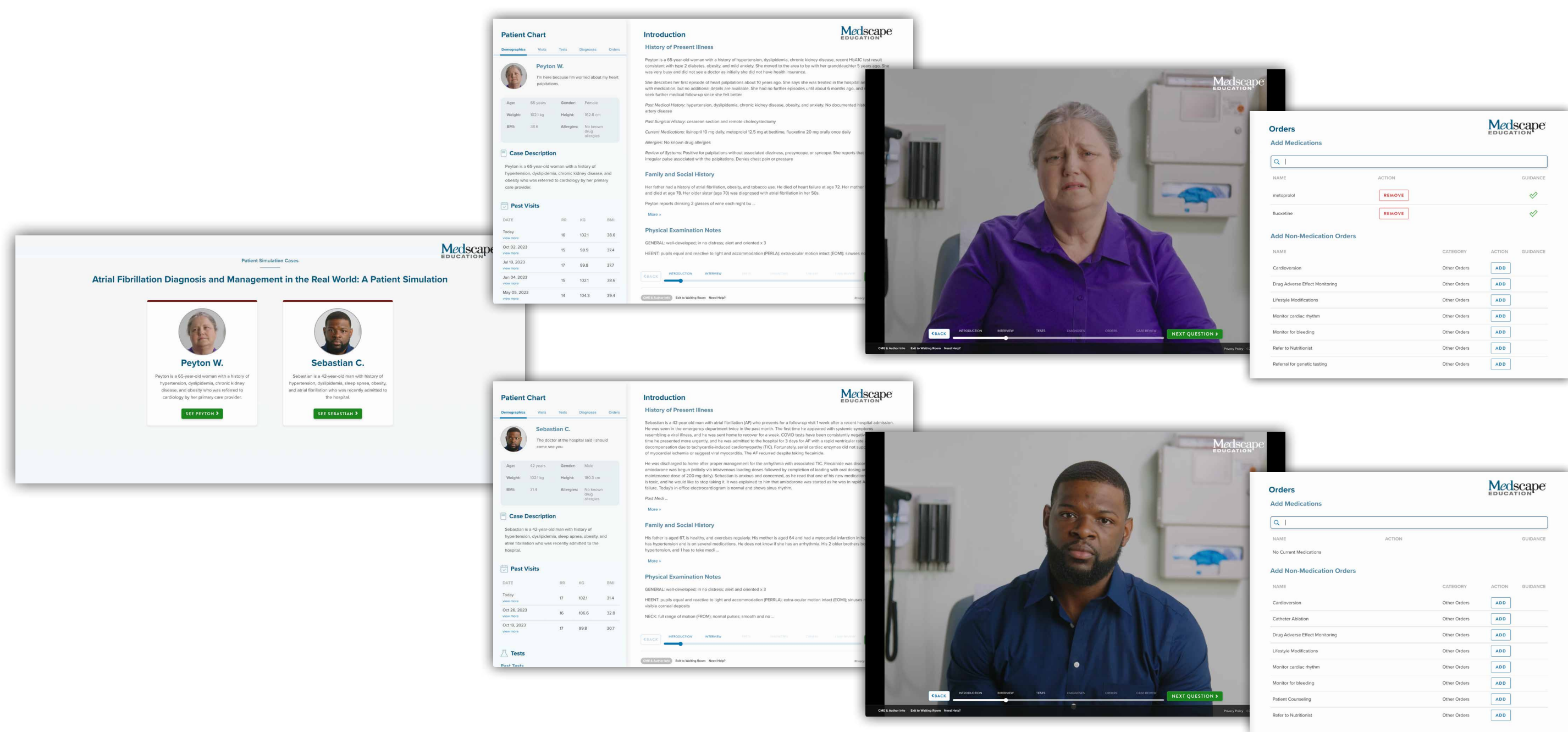
RESULTS

Significant improvements were seen for appropriate, timely diagnosis of AF and treatment selection in the overall learner population. Treatment improvements were greatest for tailoring anti-arrhythmic drug (AAD) therapy in patients with recently diagnosed AF. Improvements in selection of appropriate AAD was observed for all specialties, although specialty-specific differences were apparent. Significant improvements were also observed for selection of appropriate monitoring strategies to determine response to treatment and reaching treatment goals.

### PATIENT CASE 1: Patient With Recently Diagnosed AF

"I'm here because I'm worried about my heart palpitations."

Peyton is a 65-year-old woman with a history of hypertension, dyslipidemia, chronic kidney disease, and obesity who was referred to cardiology by her primary care provider.

PEYTON W.
CASE SUMMARY

| Age: 65 years | BMI: 38.6 | Height: 162.6 cm |
| Weight: 102.1 kg | Gender: Female | Allergies: No known drug allergies |

Accuracy of Clinical Decisions Pre- and Post-CG

Timely diagnosis of AF - Decision points assessed: Order mobile outpatient telemetry (MCOT), echocardiographic stress test, diagnose paroxysmal AF (PAF)

% CORRECT

|			
Cardiologists	30%	66%	P <.001
PCPs	17%	48%	P <.001
Overall	16%	57%	P <.001
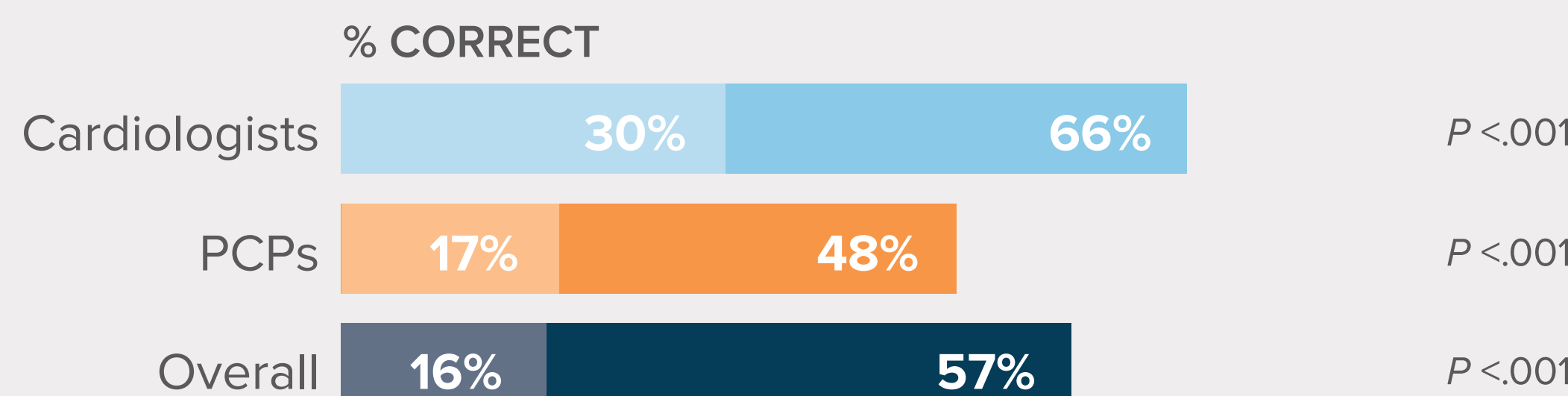
CLINICAL INSIGHT: Despite improvement, approximately 24% to 36% of cardiologists and 37% to 45% of PCPs did not make accurate decisions regarding the workup and diagnosis of AF.

Selecting appropriate AAD in patients with AF in different clinical scenarios based on the latest clinical evidence and practice guidelines - Decision points assessed: Start dronedarone, flecainide, or propafenone

% CORRECT

Cardiologists	8%	63%	P <.001
PCPs	4%	54%	P <.001
Overall	6%	59%	P <.001
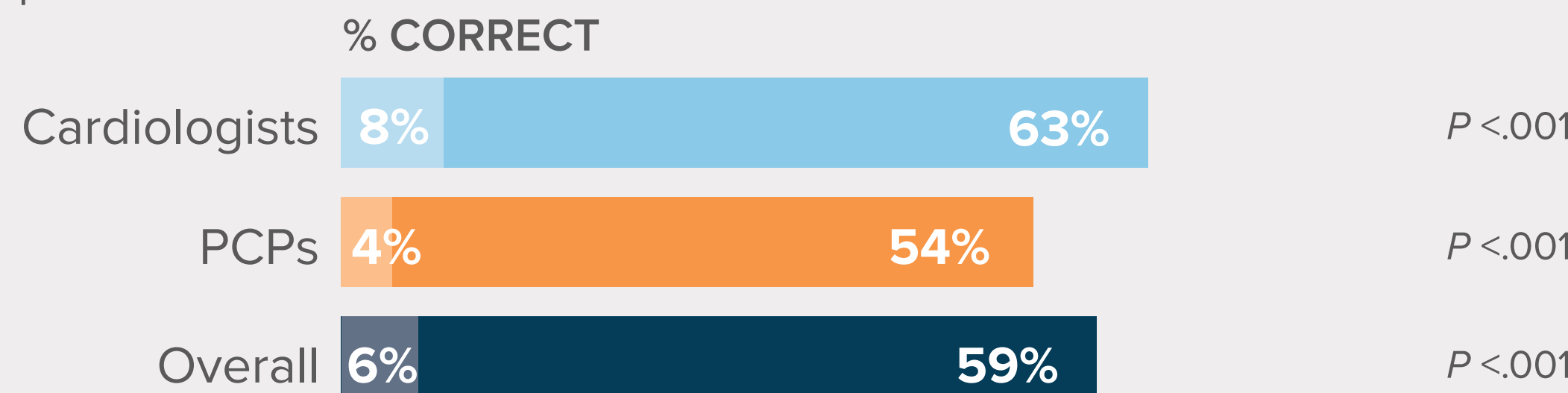
CLINICAL INSIGHT: Despite improvement, approximately 70% to 89% of cardiologists and 72% to 90% of PCPs did not select an AAD for this patient.

Selecting appropriate monitoring strategies for patients with AF to determine response to treatment and reaching treatment goals - Decision points assessed: Select monitoring for bleeding, monitoring cardiac rhythm, lifestyle modifications, drug adverse effect monitoring

% CORRECT

Cardiologists	40%	62%	P <.001
PCPs	32%	55%	P <.001
Overall	36%	59%	P <.001
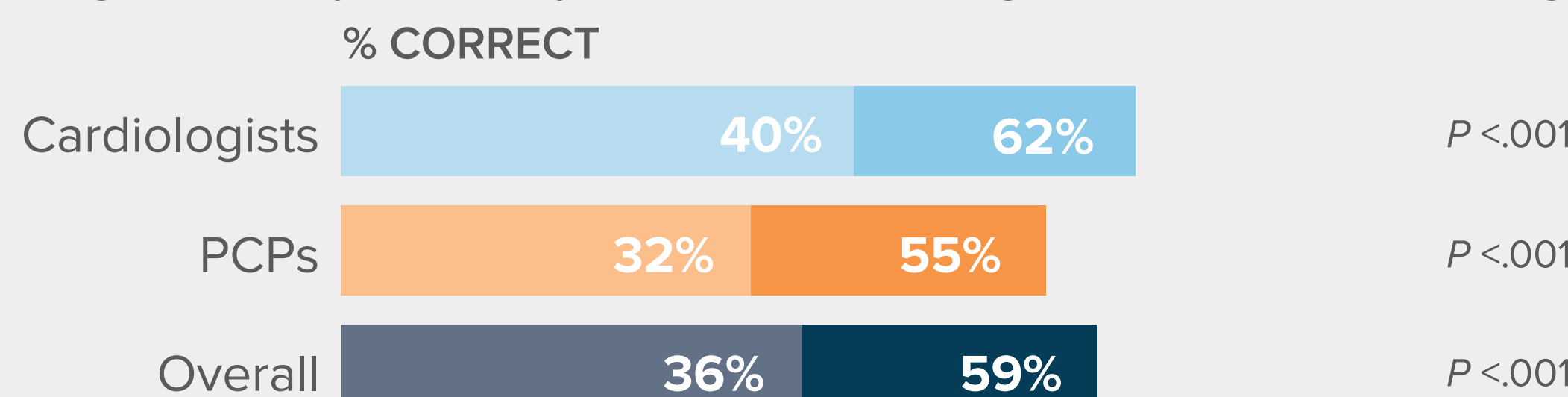
CLINICAL INSIGHT: Despite improvement, approximately 16% to 36% of cardiologists and 22% to 59% of PCPs did not select appropriate monitoring strategies for patients with AF.

Cardiologists: PRE ■ POST ■ PCPs: PRE ■ POST ■ Overall: PRE ■ POST ■

### PATIENT CASE 2: Patient With History of AF Recently Admitted to the Hospital

"The doctor at the hospital said I should come see you."

Sebastian is a 42-year-old man with history of hypertension, dyslipidemia, sleep apnea, obesity, and atrial fibrillation who was recently admitted to the hospital.

SEBASTIAN C.
CASE SUMMARY

| Age: 42 years | BMI: 31.4 | Height: 180.3 cm |
| Weight: 102.1 kg | Gender: Male | Allergies: No known drug allergies |

Accuracy of Clinical Decisions Pre- and Post-CG

Timely diagnosis of AF - Decision points assessed: Order review results of nuclear stress test, 24-hour Holter monitor, diagnose recurrent AF

% CORRECT

|			
Cardiologists	0%	42%	P <.001
PCPs	2%	42%	P <.001
Overall	1%	42%	P <.001
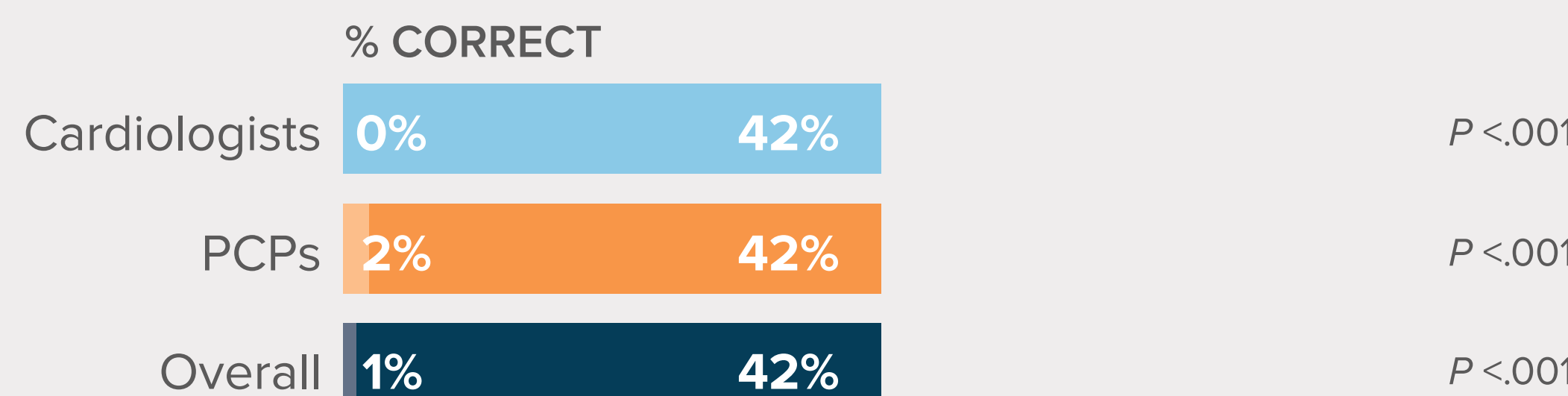
CLINICAL INSIGHT: Despite improvement, approximately 17-55% of cardiologists and 20-64% of PCPs did not make accurate decisions regarding the workup and diagnosis of AF.

Selecting appropriate AAD in patients with AF in different clinical scenarios based on the latest clinical evidence and practice guidelines - Decision point assessed: Start dronedarone

% CORRECT

Cardiologists	18%	60%	P <.001
PCPs	15%	51%	P <.001
Overall	17%	56%	P <.001
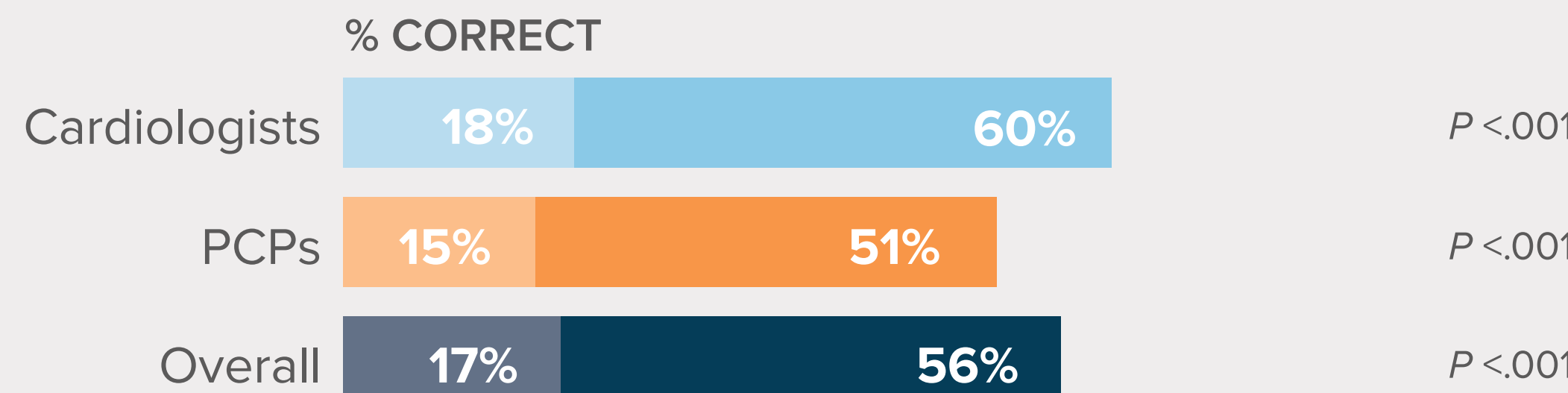
CLINICAL INSIGHT: Despite improvement, approximately 40% of cardiologists and 49% of PCPs did not select an AAD for this patient.

Selecting appropriate monitoring strategies for patients with AF to determine response to treatment and reaching treatment goals - Decision points assessed: Order patient counseling, monitor for bleeding, monitor cardiac rhythm, lifestyle modifications, drug adverse effect monitorin

% CORRECT

Cardiologists	46%	63%	P <.001
PCPs	38%	58%	P <.001
Overall	42%	61%	P <.001
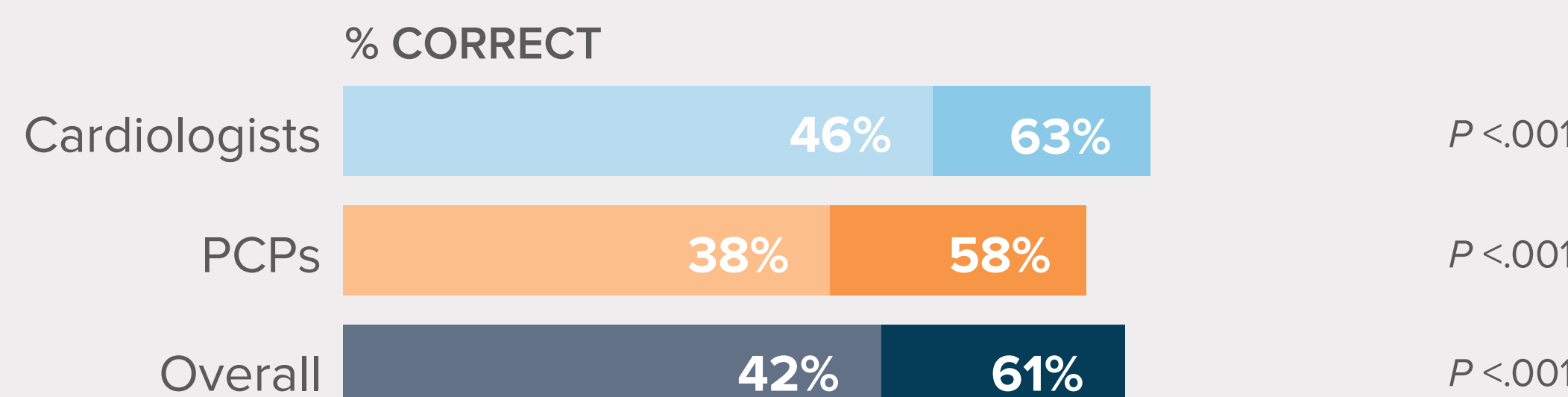
CLINICAL INSIGHT: Despite improvement, approximately 24-37% of cardiologists and 34-48% of PCPs did not select appropriate monitoring strategies for patients with AF.

Cardiologists: PRE ■ POST ■ PCPs: PRE ■ POST ■ Overall: PRE ■ POST ■

CONCLUSIONS

Case-based AF intervention employing VPS was associated with improvements in diagnostic and therapeutic decision-making among cardiologists and PCPs. Despite the observed improvements, gaps remain in diagnosing and selecting appropriate rhythm control management strategies for patients with AF.

Scan here to view this poster online.