

IMPROVING MANAGEMENT OF MAJOR DEPRESSIVE DISORDER THROUGH VIRTUAL PATIENT SIMULATION

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STUDY OBJECTIVES

Major depressive disorder (MDD) is the most prevalent mental disorder in the United States and one of the leading causes of disability worldwide.¹ However, despite the high prevalence, only 20% of patients with MDD receive adequate treatment, and the use of depression rating scales as assessment tools and for monitoring treatment response is suboptimal.² Furthermore, only 30% of patients achieve remission with the first agent selected.³ Even among remitters, up to 90% report residual symptoms that affect their functional ability.⁴ In addition to low remission rates among patients who take their antidepressants, up to 50% of patients report discontinuing their therapy because of tolerability issues or adverse effects.⁵ This study aimed to determine if virtual patient simulation (VPS)-based education could help psychiatrists and primary care physicians (PCPs) improve performance in assessment and management of MDD and adherence to quality improvement measures.⁶

METHODS

- A continuing medical education activity was delivered online via MedSims, a virtual patient simulation (VPS) learning platform that offers clinicians lifelike, point-of-care interactions with complete freedom of choice in clinical decision making, along with mentoring feedback to address the learner's practice gaps⁶
- Psychiatrist and PCP learners were presented with 2 patient cases of MDD, including their electronic health records, which were designed to simulate the scope of actual practice (Figure 1)
- Following virtual introduction to patients, physicians were asked to make diagnostic and treatment decisions based on numerous available assessments, diagnoses, and pharmacologic therapies. The clinical decisions entered by each participant were analyzed using a sophisticated decision engine employing current evidence-based recommendations. Personalized clinical guidance (CG) was then provided to each learner based on the analysis of their decisions⁶
- Impact of the education was measured by comparing participant decisions pre- and post-CG using a 2-tailed, paired t-test; $P < .005$ was considered statistically significant
- The activity was launched on Medscape Education on November 19, 2015, and data were collected through December 3, 2015

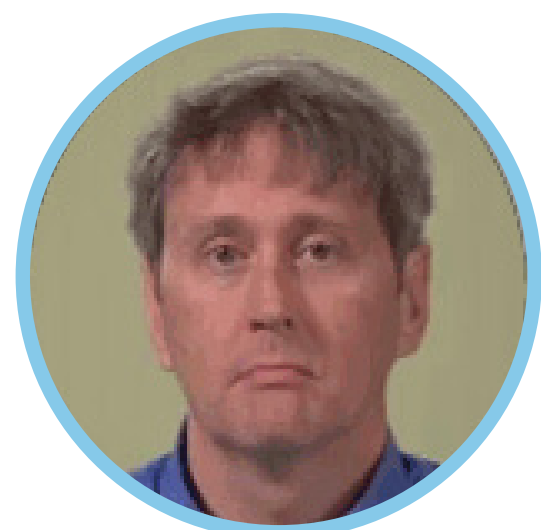
RESULTS

A total of 878 psychiatrists and 732 PCPs made clinical decisions in both cases [Figure 1]. From pre- to post-CG in the simulation, psychiatrists and PCPs were more likely to make evidence-based practice decisions in:

- Incorporating measurement-based care, such as evidence-based tools and scales, into patient assessment: there was an 18% relative improvement on average for both psychiatrists and PCPs post-CG after completing 2 cases in the simulation. In particular, patient health questionnaire (PHQ-9) utilization increased post-CG for both audiences (from 47% pre-CG to 67% post-CG for psychiatrists, $P = .000$, and from 53% pre-CG to 72% post-CG for PCPs, $P < .001$) [Figures 1-3]
- Individualizing treatment for patients with MDD, including patients who have responded inadequately to initial therapy, by incorporating the latest clinical findings: there was a 104% relative improvement on average for both psychiatrists and PCPs in selecting appropriate therapeutic classes post-CG after completing the 2 cases in the simulation ($P < .0005$), and improvements in nonpharmacologic orders such as prescribing cognitive remediation (from 37% pre-CG to 60% post-CG for psychiatrists, $P = .000$, and from 43% pre-CG to 66% post-CG for PCPs, $P < .001$) [Figures 1, 4, 5]

FIGURE 2. Patient Cases in the VPS

PATIENT CASE 1: LUKE T.

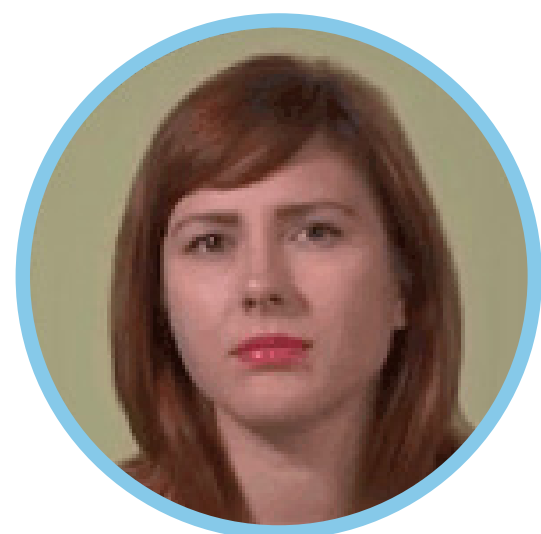


“This new medicine is helping some, but I still don’t feel right, yet. I feel confused and am having trouble sleeping.”

Luke is a 58-year-old patient who was diagnosed with depression 20 years ago and was treated with trazodone. About 3 months ago, his symptoms worsened and he was diagnosed with MDD. At that time, he was started on a trial of venlafaxine. He feels his depression symptoms are better, but he complains about side effects from his new medication such as confusion, forgetfulness, difficulty organizing projects around the house, and waking up nightly around 2–3 am. He is not overtly suicidal.

Patient Stats		Medications	
		Started	
Age	58 years	Venlafaxine	3 months ago
Gender	Male		
Weight	84.00 kg	Current Conditions	
Height	183 cm	MDD	Diagnosed 3 months ago
BMI	25.1		
Allergies	None		

PATIENT CASE 2: TAMMY V.



“I’m still having some side effects from the medicine for my depression.”

Tammy is a 33-year-old woman who was diagnosed with major depressive disorder (MDD) 2 years ago. After her MDD diagnosis, she was started on an SNRI. After 18 months, the side effects became intolerable and she was switched to fluoxetine. Today is her 6-month follow-up visit. Tammy is feeling better overall, but states that she has low libido and some sleeping difficulties despite zolpidem having been added to her regimen 3 months ago. Specifically, she still has trouble falling asleep at night and then feels tired during the day. She also reports a slowness in thinking and difficulty with higher cognitive skills such as creativity. The patient is not overtly suicidal.

Patient Stats		Medications	
		Started	
Age	33 years	Fluoxetine	6 months ago
Gender	Female	Zolpidem	3 months ago
Weight	61.00 kg		
Height	167 cm	Current Conditions	
BMI	21.9	MDD	Diagnosed 2 years ago
Allergies	None		

FIGURE 2. Psychiatrists’ and PCPs Performance on Case 1: Incorporating Measurement-Based Care, Such as Evidence-Based Tools and Scales, Into Patient Assessment

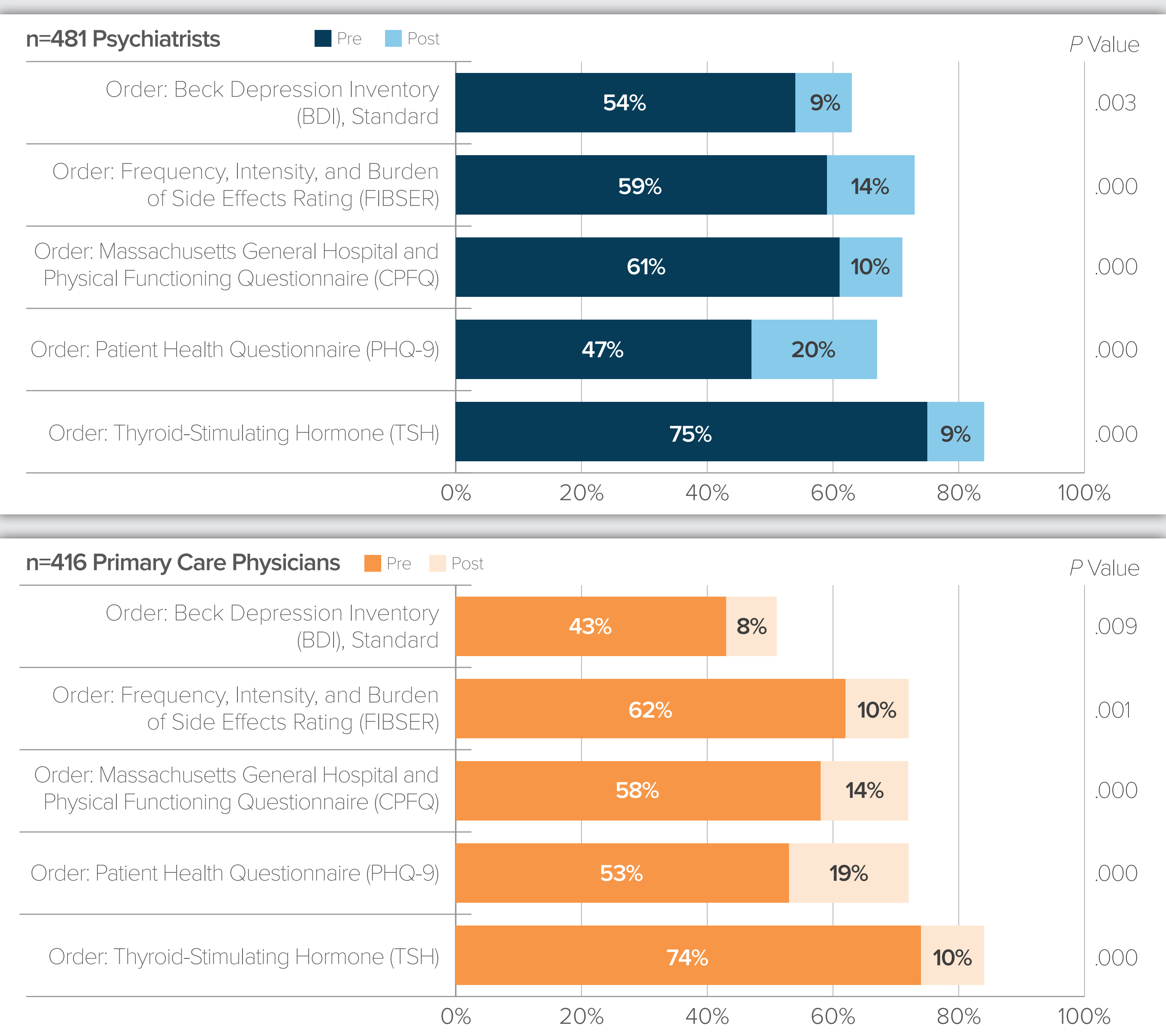


FIGURE 3. Psychiatrists’ and PCPs Performance on Case 2: Incorporating Measurement-Based Care, Such as Evidence-Based Tools and Scales, Into Patient Assessment

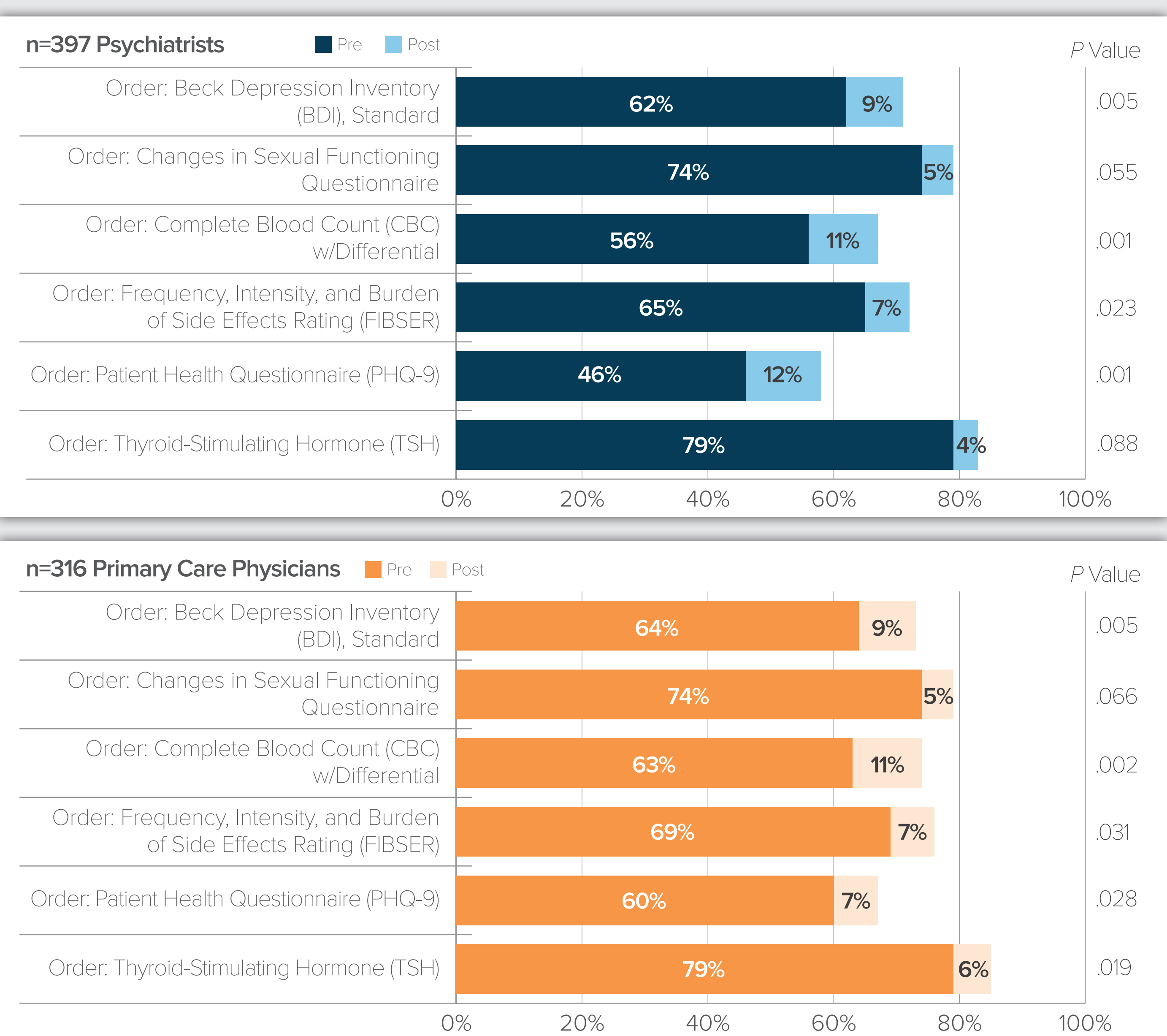


FIGURE 4. Psychiatrists’ and PCPs Performance on Case 1: Individualizing Treatment for Patients With MDD, Including Those Who Have Responded Inadequately to Initial Therapy, by Incorporating the Latest Clinical Findings

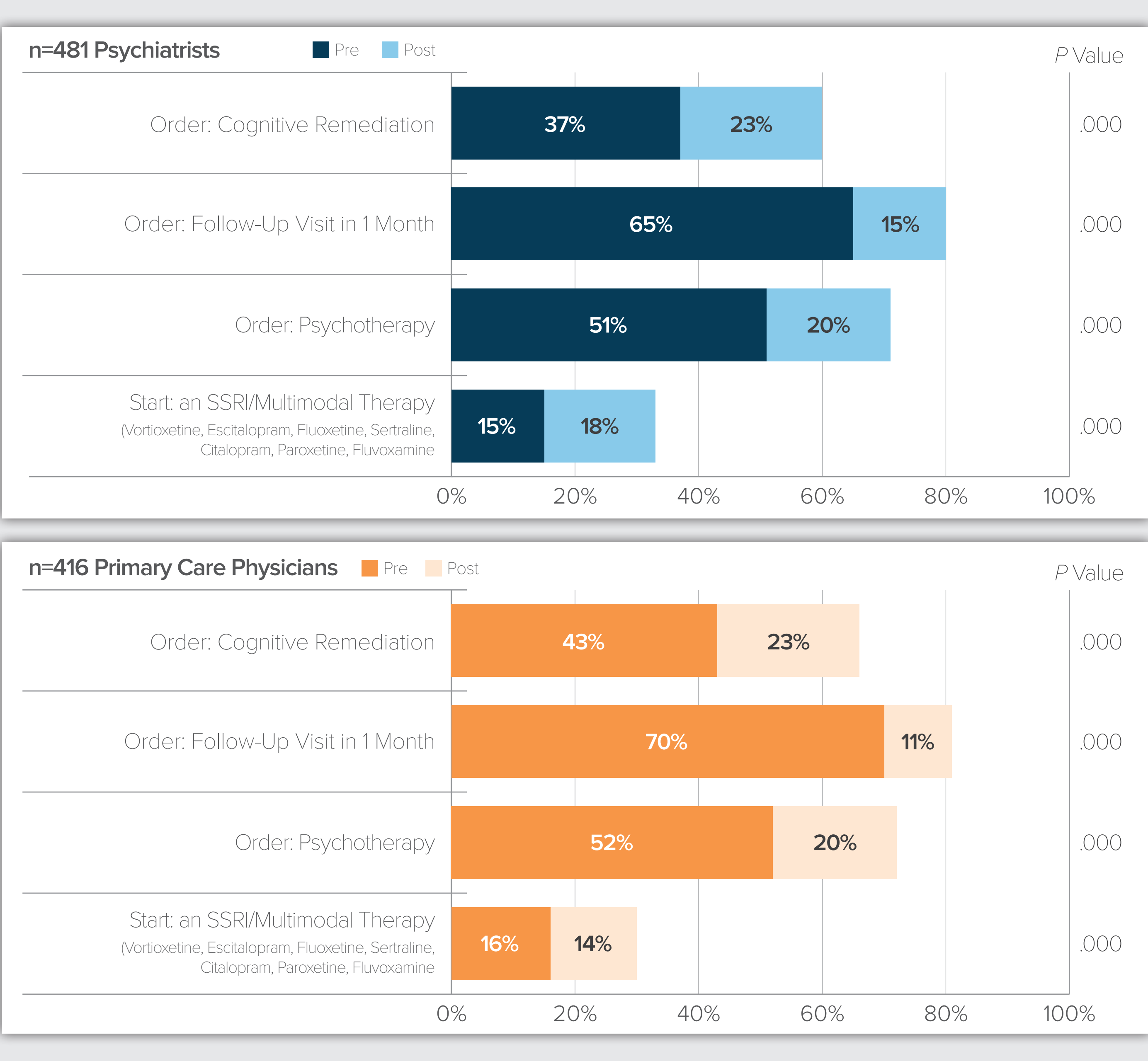
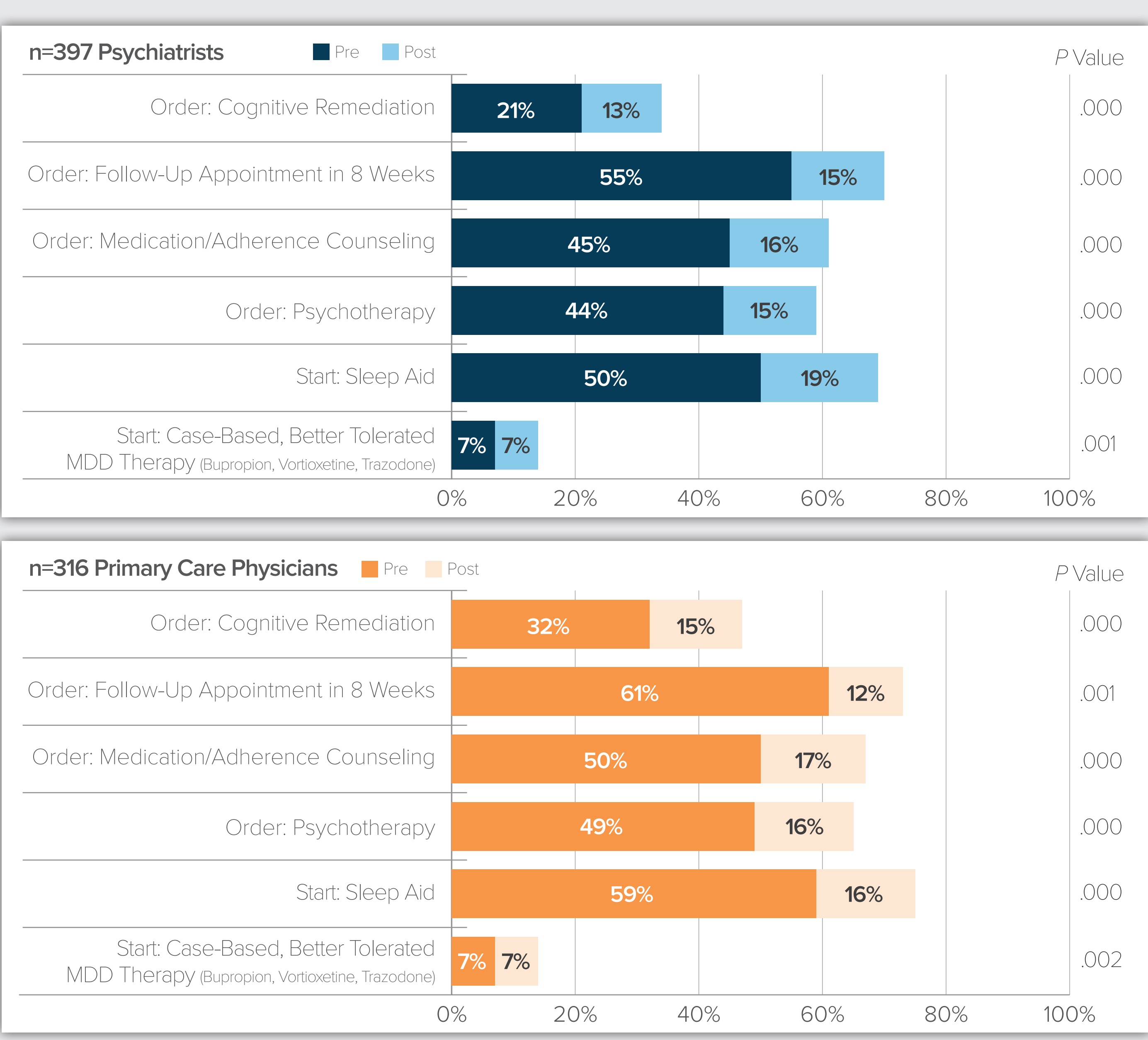


FIGURE 5. Psychiatrists’ and PCPs Performance on Case 2: Individualizing Treatment for Patients With MDD, Including Those Who Have Responded Inadequately to Initial Therapy, by Incorporating the Latest Clinical Findings



CONCLUSIONS

The majority of psychiatrist and PCP learners who participated in an immersive VPS-based educational initiative significantly improved their clinical decisions related to utilization of measurement-based care to assess patients with MDD and selection of evidence-based pharmacologic and nonpharmacologic treatment to improve patient outcomes.

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References

- Kessler RC, Berglund P, Demler O, et al. The epidemiology of major depressive disorder: results from the National Comorbidity Survey Replication (NCS-R). *JAMA*. 2003;289:3095-3105.
- Gaynes BN, Landis S, Esposito N. The patient journey to remission in MDD: a collaborative approach. Medscape. June 26, 2014. <http://www.medscape.org/viewarticle/827166>. Accessed February 22, 2015.
- Gaynes BN, Rush AJ, Trivedi MH, Wisniewski SR, Spencer D, Fava M. The STAR*D study: treating depression in the real world. *Clev Clin J Med*. 2008;75:57-66.
- Kennedy SH. A review of antidepressant therapy in primary care: current practices and future directions. *Prim Care Companion CNS Disord*. 2013;15: pii: PCC.12r01420.
- Connolly KR, Thase ME. Emerging drugs for major depressive disorder. *Expert Opin Emerging Drugs*. 2012;17:105-126.
- Thase ME. Testing Your Decision-Making in Difficult Cases of MDD. November 19, 2015. <http://www.medscape.org/viewarticle/852633>. Accessed September 19, 2016.

