

# Addressing Racial Disparities in Valvular Heart Disease: The Role of Echo-Driven EHR Alerts in Improving Care Access

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## INTRODUCTION

- Disparities in access to advanced cardiovascular care remain a persistent challenge, particularly for Black patients with structural heart disease.
- Systems of care interventions, such as electronic health record (EHR)-driven clinician notifications, have the potential to improve equity by standardizing referral pathways.
- In this study, we evaluated the impact of an echocardiography-driven EHR alert on race-based trends in time to follow-up (FU) for patients with severe aortic stenosis (SAS) and severe mitral regurgitation (SMR) at our tertiary care center.

## METHODS

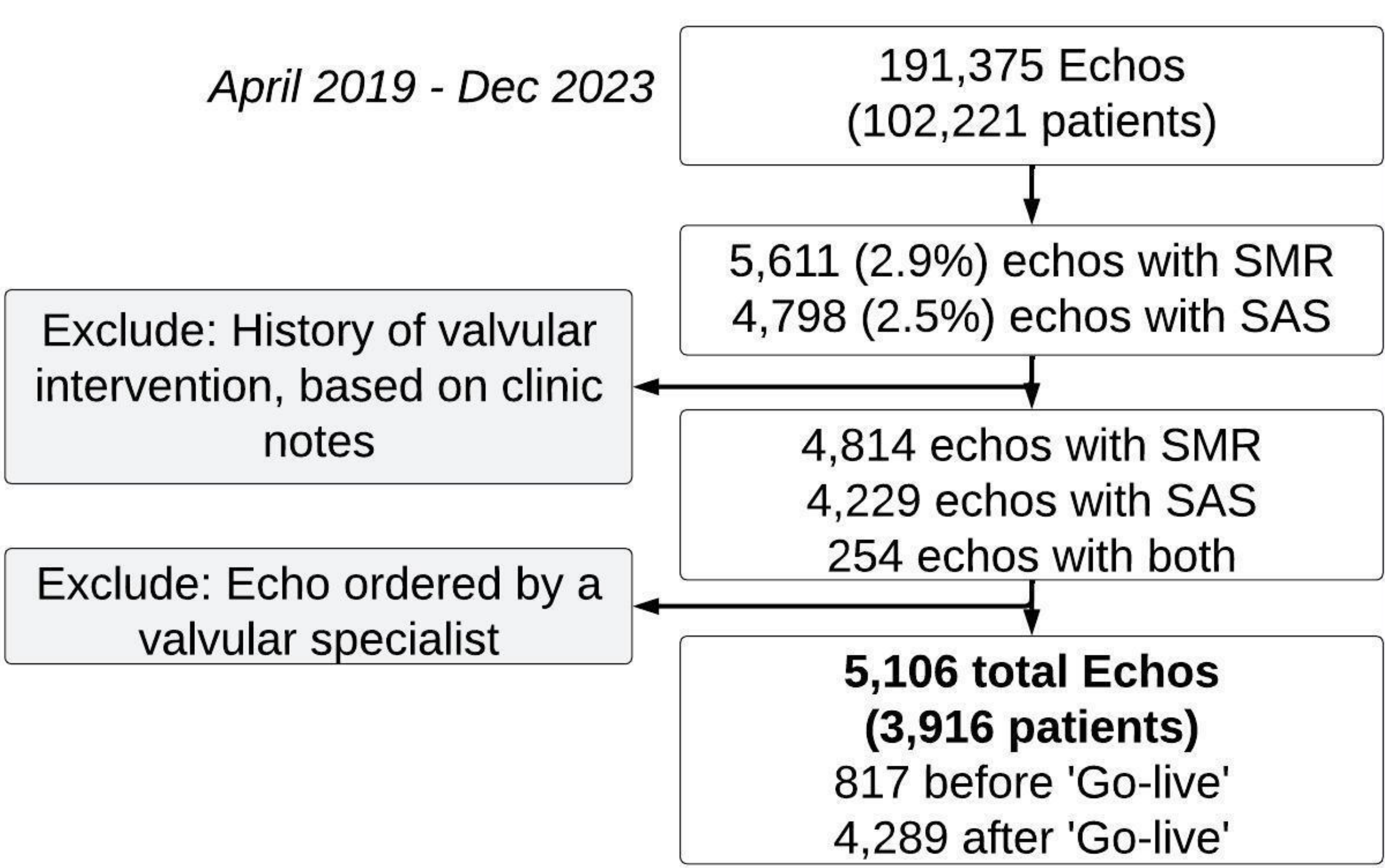


Figure 1. Inclusion and exclusion criteria

**Study population:** Patients with SAS and SMR between April 2019 and January 2024. 33% Black race

**Intervention:** February 2020 (“Go-live”). Echocardiogram (echo) – driven EHR notifications nudging clinicians to refer patients to the Structural Heart Clinic

### Statistical Analysis:

- Statistical process control (SPC) charts to show change in the endpoint over time
- ANOVA to examine the effect of the echo date (pre and post intervention) on the log-transformed time to follow up (FU)
- Groups: race

The p-values were adjusted using the Bonferroni method to account for multiple comparisons

## SUMMARY

- After “go-live” of the AI algorithm, there was a downward trend in time to follow-up.
- White and Black patients both saw an improvement.
- Although the interaction between echo date and race was insignificant ( $p=0.15$ , ANOVA), the post-hoc analysis shows the intervention led to significant improvements to follow-up time in Black patients.

## RESULTS

Figure 2. Average time to FU decreased for both Black’s and White’s (-92 and -50 days)

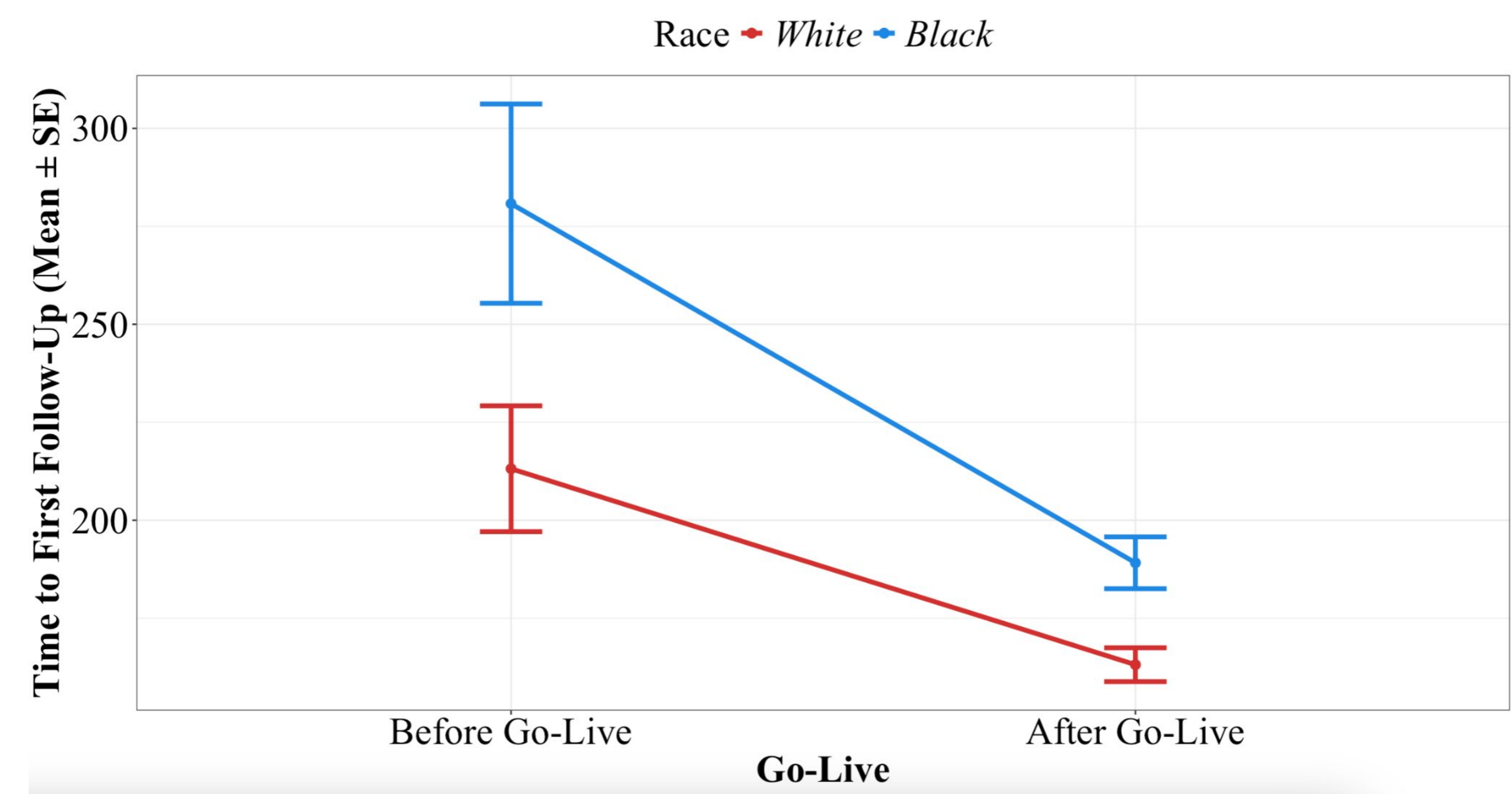


Figure 3. Based on a post-hoc subgroup analysis, the intervention led to significant improvements to FU time in Black’s ( $p=0.015$ )

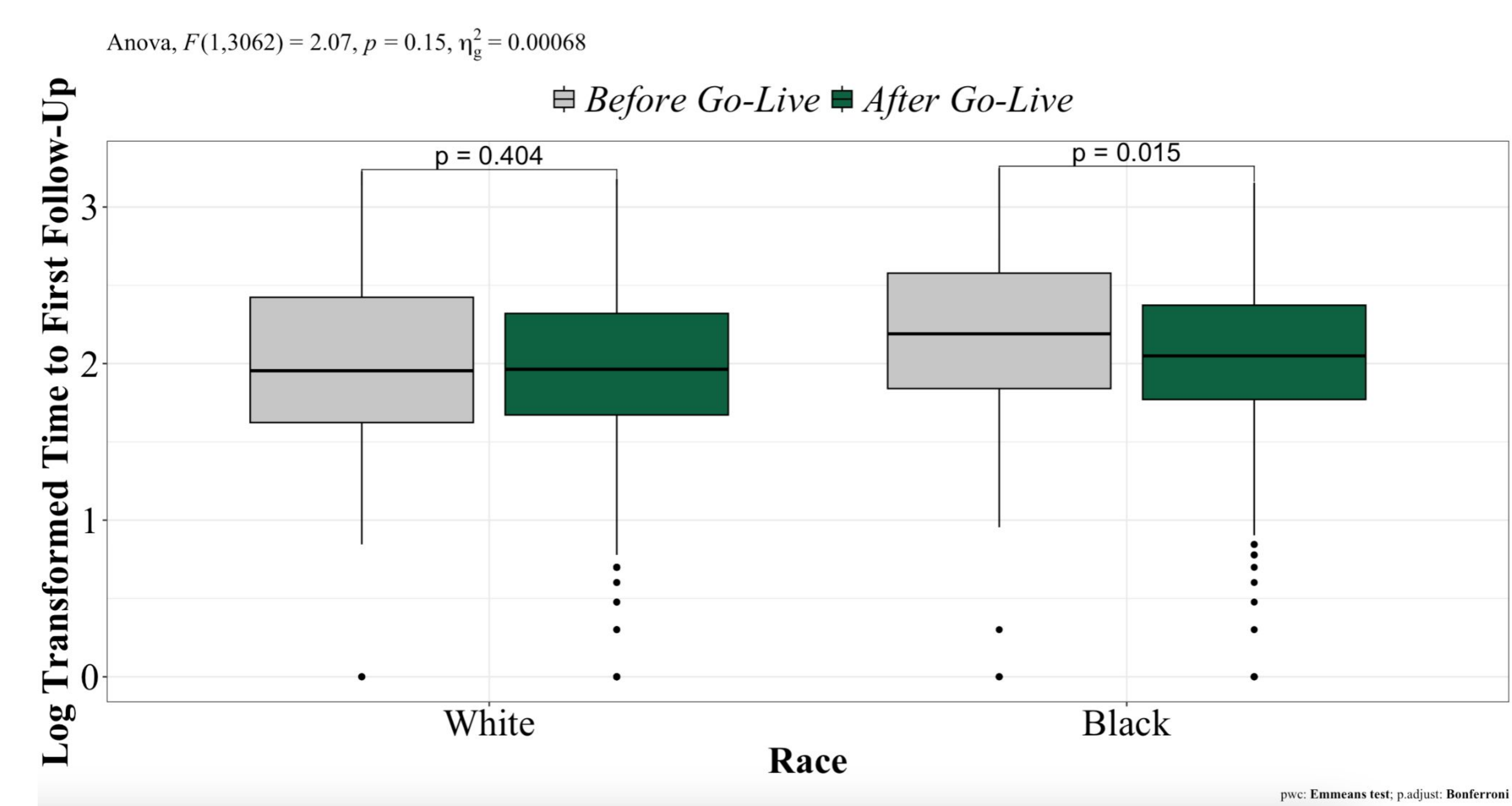
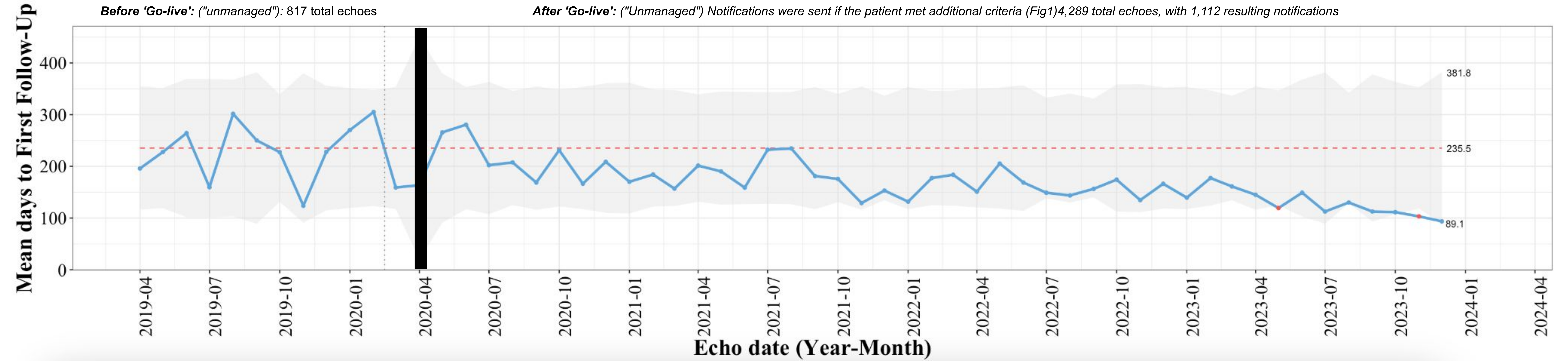


Figure 4. Significant downward trend in the time to FU compared to the before ‘go-live’ period



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