

# Reducing inappropriate TTEs to improve workflow and efficiency

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## INTRODUCTION

- A substantial number of transthoracic echocardiogram (TTE) requests received by our echocardiography laboratory are for clinically inappropriate indications as determined by the 2011 Echo Appropriate Use Criteria (EAUC)
- Unnecessary care adds wait times and creates health care waste which can frustrate patients and clinicians alike

## OBJECTIVES

- Identify most frequently used inappropriate TTE indications
- Develop a proper practice reminder to educate providers inappropriate TTE indications
- Reduce the number of inappropriate TTEs ordered

## MATERIALS AND METHODS

- We reviewed 450 consecutive VA TTEs in 2018 determined to be inappropriate by the EAUC
- Most common inappropriate indications for TTE orders were identified
- A clinical reminder was designed and implemented into the order entry system of the VA EMR, CPRS (Figure 1)
- 351 consecutive TTEs were reviewed after the intervention

Most common inappropriate TTE indications
Routine surveillance of ventricular function with known CAD and no change in clinical status or cardiac exam
Asymptomatic isolated sinus bradycardia
Routine surveillance (< 3 years) of mild valvular stenosis without change in clinical status or cardiac exam
Routine perioperative evaluation of ventricular function with no symptoms or signs of cardiovascular disease

Table 1: Four most common reasons for inappropriate TTE orders at Malcolm Randall VA Medical Center

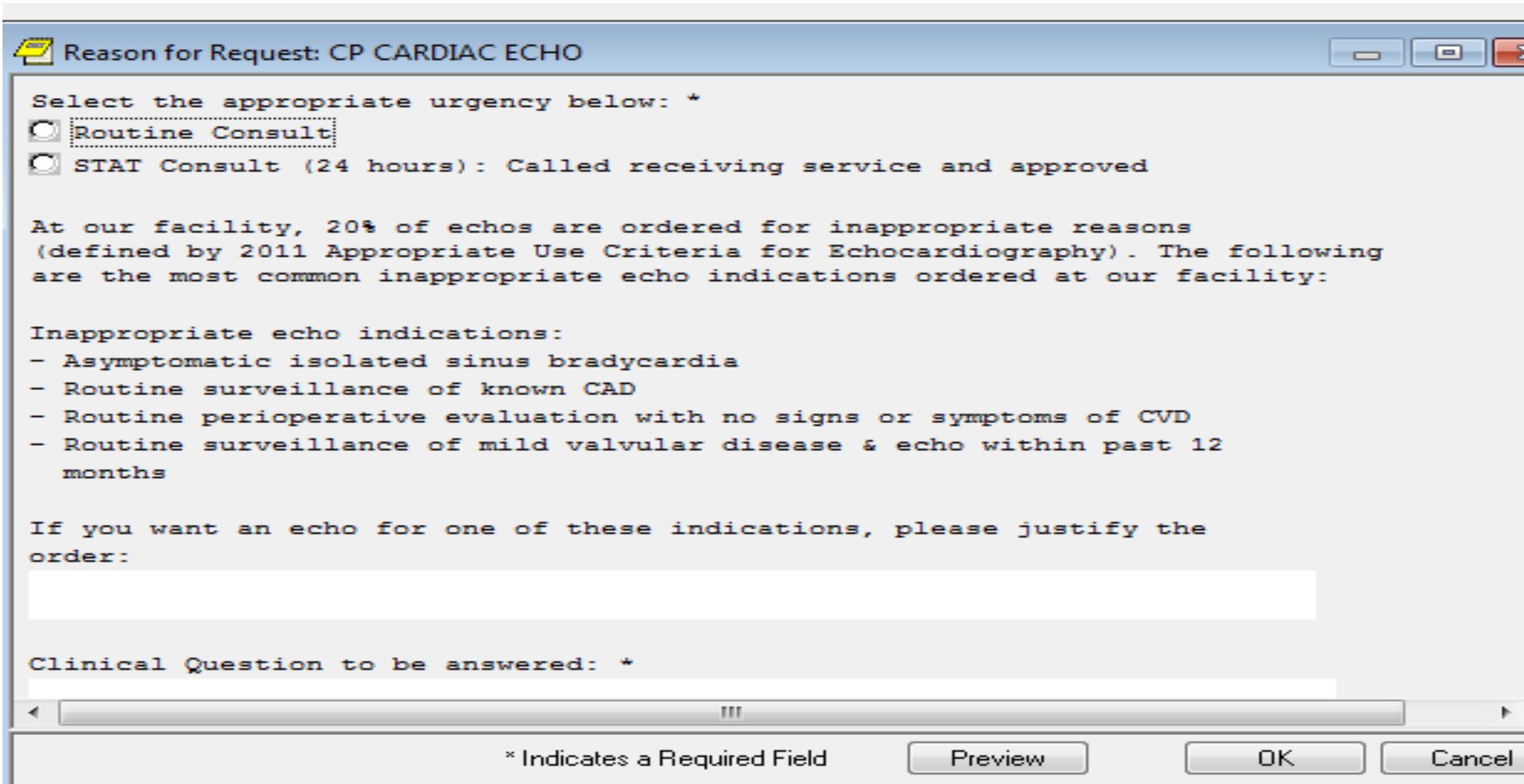


Figure 1: Clinical reminder incorporated into CPRS

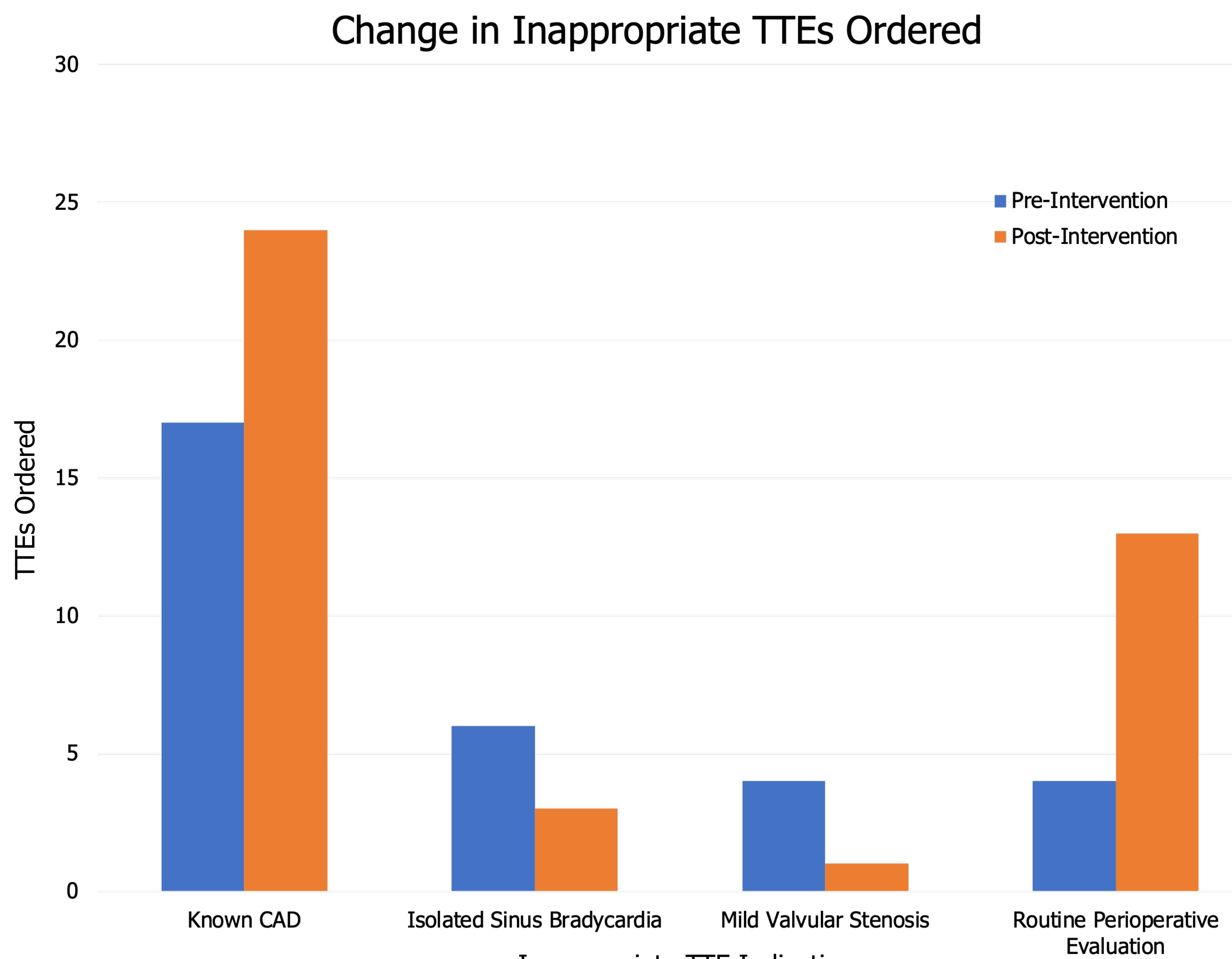


Figure 2: Change in inappropriate TTE orders pre and post intervention

## RESULTS

- The rate of inappropriate TTEs decreased from 22% to 15% ( $p = 0.014$ )
- The 4 most common inappropriate indications accounted for 33% of overall inappropriate TTE orders (Table 1)
- Of the 4 target inappropriate indications, 2 categories saw a representative increase (Figure 2)

## CONCLUSIONS

- A clinical reminder was associated with an overall reduction in inappropriate TTEs; In-depth evaluation showed that targeted indications actually increased, suggesting the intervention was not effective
- Further study is needed to ascertain how to best use clinical reminders to encourage more judicious use of cardiac imaging, such as TTE

## DISCLOSURES

We would like to thank the University of Florida College of Medicine, Departments of Medicine and Cardiology, and the Malcolm Randall VA Medical Center.