

# A Quality Improvement Project to Reduce Inappropriate Dobutamine Stress Testing

**Authors: Al-Adwan, Saif MD, Alvarez, Diana MD, Campbell, Nicholas DO, Davis, Joshua DO, Pendley, Joseph DO, Patel, Dharmendra MD**  
Erlanger Heart and Lung Institute/ University of Tennessee COM Chattanooga, Chattanooga, Tennessee

## Background

Cardiac stress tests are used to diagnose coronary artery disease (CAD) and risk stratify patients with known or suspected CAD. Test require exercise or a pharmacologic agent as the stressor. Exercise is preferred over pharmacologic as there is additive prognostic value obtained from exercise workload. Common indications to choose a pharmacologic stressor over exercise include baseline ECG abnormalities, inability to achieve adequate workload during exercise, and myocardial viability assessment. Dobutamine stress echocardiography is a commonly used stress test modality in these individuals. We suspect that a significant proportion of the DSEs performed in our outpatient cardiology clinic are inappropriately performed given the preference of exercise over pharmacologic stressor and the specific indications for echocardiography as the imaging modality. The goal of this QI project is to identify what proportion of DSEs are performed inappropriately, and ultimately to reduce the number of inappropriate studies through process improvement.

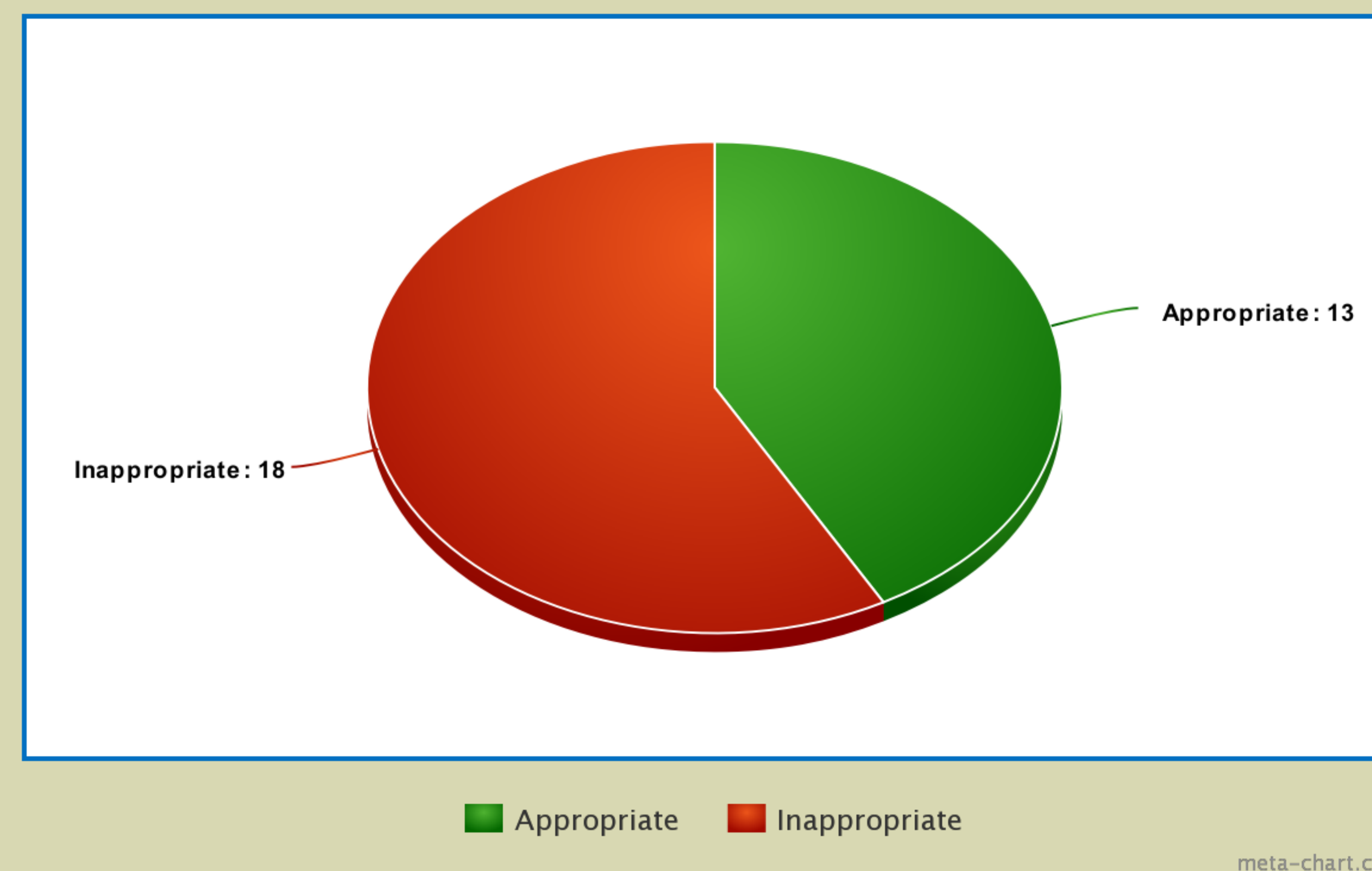
### Specific Aims

1. To identify the the number of DSEs that are performed, and then the percentage of inappropriate DSEs that are being ordered by non-cardiologist.

## Methods

A retrospective review of all DSEs that were performed in the Erlanger East and Downtown stress labs from November 2019 to April 2022. Non-cardiologist ordered tests were identified and chart review was performed. Each chart was reviewed by a committee of four cardiologist and the appropriateness of the study was adjudicated. The 2020 guidelines for performance, interpretation, and application of stress echocardiography in ischemic heart disease from the ASE was used to guide our review. A total of 31 studies ordered by non-cardiologist were identified and included in this analysis.

Dobutamine Stress Echocardiograms



## Results

18/31 test ordered did not meet appropriate use criteria and were deemed inappropriate. 17 of these were inappropriate due to the patient not having a contraindication to exercise. The other study was contraindicated due to acute coronary syndrome and was deemed inappropriate.

## Conclusion

This retrospective study has shown that greater than 50% of the DSE studies ordered by non-cardiologist over a previous two-year period were inappropriate. To improve the quality and safety of care delivered by our stress labs, the next phase of this study will be to implement an intervention to help decrease the number of inappropriate tests performed.

## References

1. Pellikka PA, Arruda-Olson A, Chaudhry FA, et al. Guidelines for Performance, Interpretation, and Application of Stress Echocardiography in Ischemic Heart Disease: From the American Society of Echocardiography. *J am Soc Echocardiogr* 2020;33:1-41.e8.

## Disclosures

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- **Conflict of Interest:** All of the authors declare no conflicts of interest in this case report.