Impact of Order Set Use on Stroke Care

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Introduction

- A case control study on stroke patients was recently completed for a quality improvement (QI) investigation.

- The objective was to determine if the use of either Hemorrhagic or Ischemic Stroke Order Set had an effect on the length of stay (LOS) or adherence to current stroke guideline recommendations
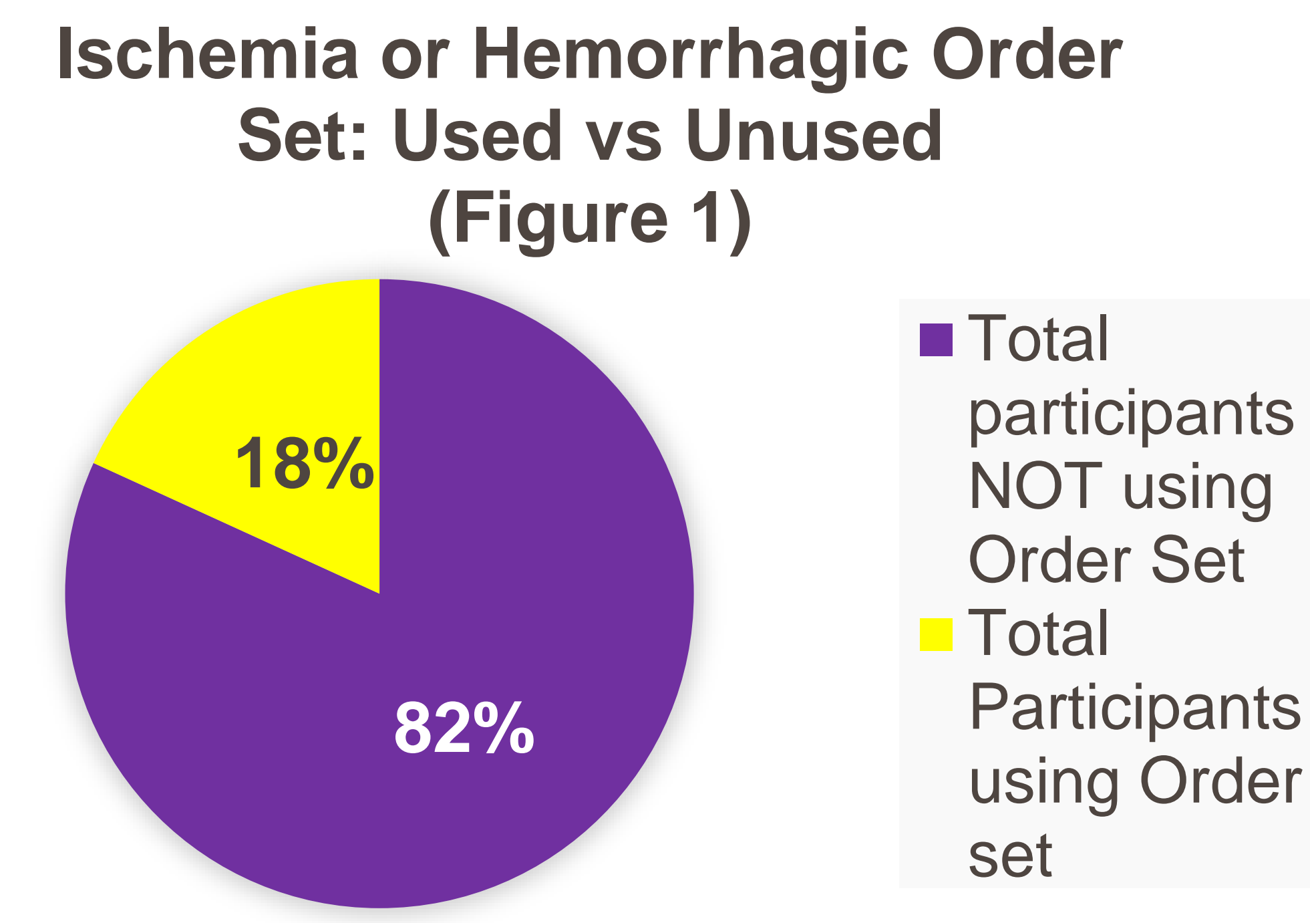
Background

- Stroke is the fifth leading cause of death in the United States costing Americans billions of dollars each year[1].

- QI projects are essential to identify gaps in the management of stroke intervention as well as to increase adherence to guideline directed therapy[2]

- A 5-year study of patients under the GWTG (Get With the Guidelines)-stroke program indicated that emphasis on guideline based therapy led to an increase in anti-thrombolytic use, an increase in statin initiation as well as an increase in smoking cessation[3].

- A QI project conducted at an Atlanta VA Medical Center showed that the use of guideline based order sets led to an increase of adherence to stroke guideline recommendations[3].

Methods

- 118 records of stroke patients were reviewed from HCA's Oak Hill Hospital database between the dates of August 27th 2019 through January 30th, 2020.
- The records were split into two groups: Order Set Use vs Disuse (Figure 1)
- A comparison was made using recommendations taken using the 2019 ASA guidelines (Table 1)
- mean LOS was compared between both groups.
- Statistical analysis was completed by a modified Welsh's T-test.

ASA Guidelines Used For Comparison between Groups (Table 1)[4]
Brain CT
Brain MRI
Echocardiogram
Carotid US
Antithrombotic Use
Statin Use
PT/OT/ST
Neurological Consultation
Lipid Panel

Ischemia or Hemorrhagic Order Set: Used vs Unused (Figure 1)

18% — Total Participants using Order set
82% — Total participants NOT using Order Set

Results

- Analysis indicated a significant reduction of the mean LOS when either order set was used (2.9 days) when compared to order set disuse (3.7 days) (p = .04; n = 118; Figure 2).

- A significant increase in the mean adherence to current stroke guidelines[4] was also observed when either order set is used (92% of recommentations followed) when compared to order set disuse (78% recommendations followed (p < .001; n = 118; Figure 3).

Mean LOS (FIGURE 2)

Yes: 2.88
No: 3.68
Order set Used?
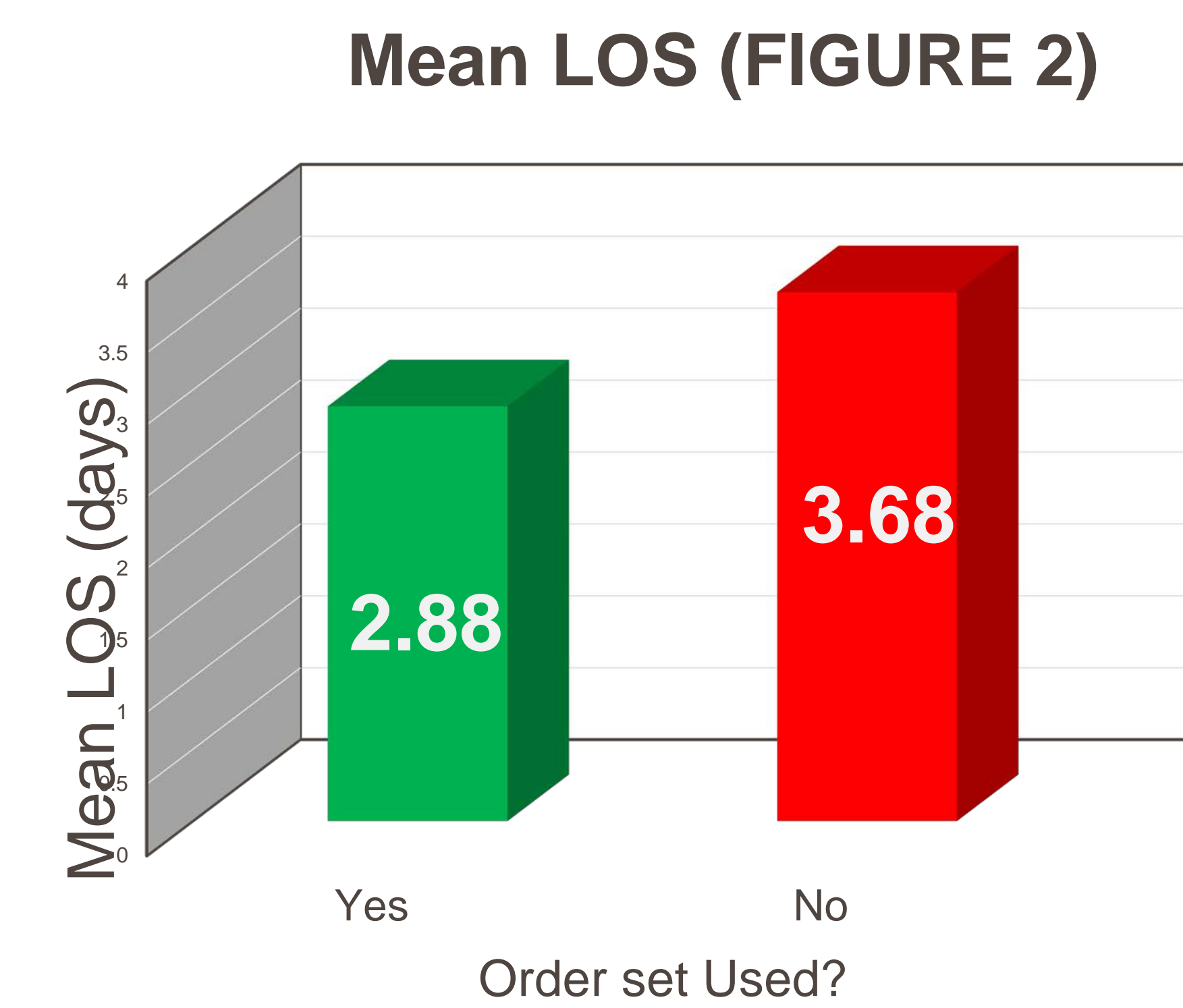
Discussion

- Results indicate use of either the Hemorrhagic or Ischemic Stroke Order Set led to increased adherence to current stroke guidelines[4] and decreased LOS

- Limitations of the study include lack of adherence to order set use as shown in Figure 1.. In addition, this study did not stratify based on comorbidities or demographics.

- Further studies may seek to stratify results based on demographics and also look at the effects stroke order set use on readmissions

MEAN ADHERENCE TO 2019 ASA GUIDELINES (FIGURE 3):

YES: 92.23
NO: 77.71
ORDER SET USED?
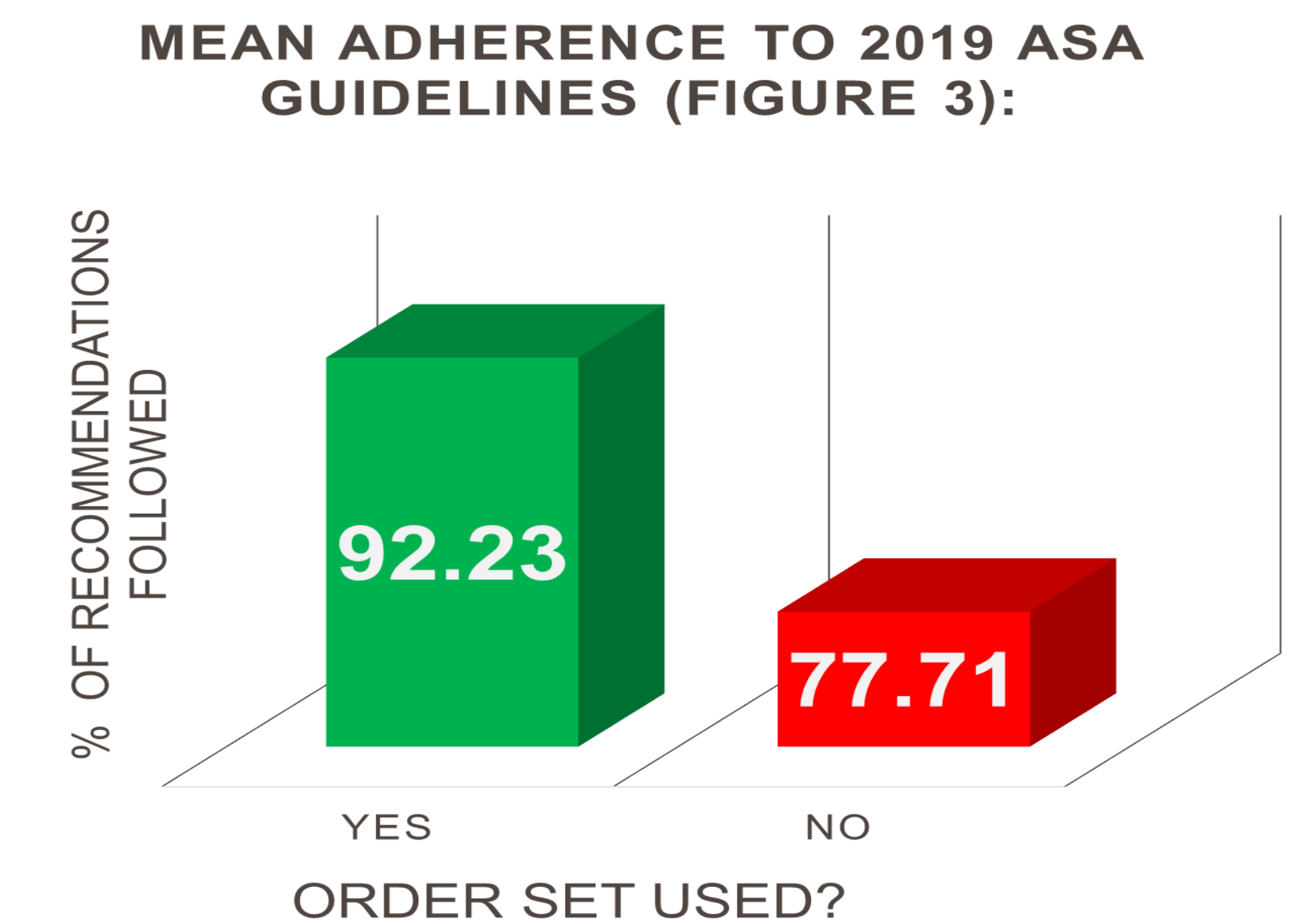
Conclusion

-There is evidence that order set use improves quality by increasing adherence to current stroke guidelines and decreasing LOS

-Further studies may investigate the effectiveness of order set utilization for other common pathologies such as COPD, CHF, and Asthma.

References

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