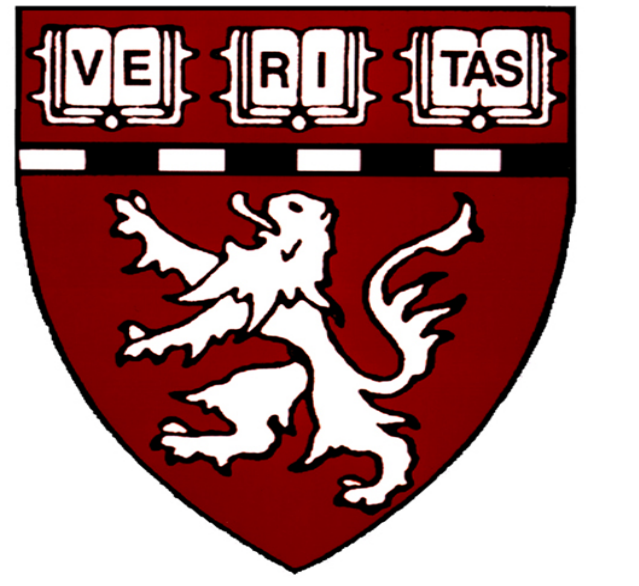




# Examining the Relationship between Surgical Safety Checklist Adherence and Development of Surgical Site Infections, Sepsis, and Maternal Sepsis in the Lake Zone of Tanzania



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## Introduction

The Surgical Safety Checklist (SSC) is an observation tool containing 38 action items related to the safe practice of all phases of the episode of care. Adherence to the SSC is associated with reduced morbidity and mortality [1-3], improved safety attitudes [4,5] and improved teamwork and communication [6,7]. The aim of this study is to evaluate the relationship between adherence to the surgical safety checklist and the development of maternal sepsis, post-operative sepsis and surgical site infections (SSIs) in the Lake Zone of Tanzania.

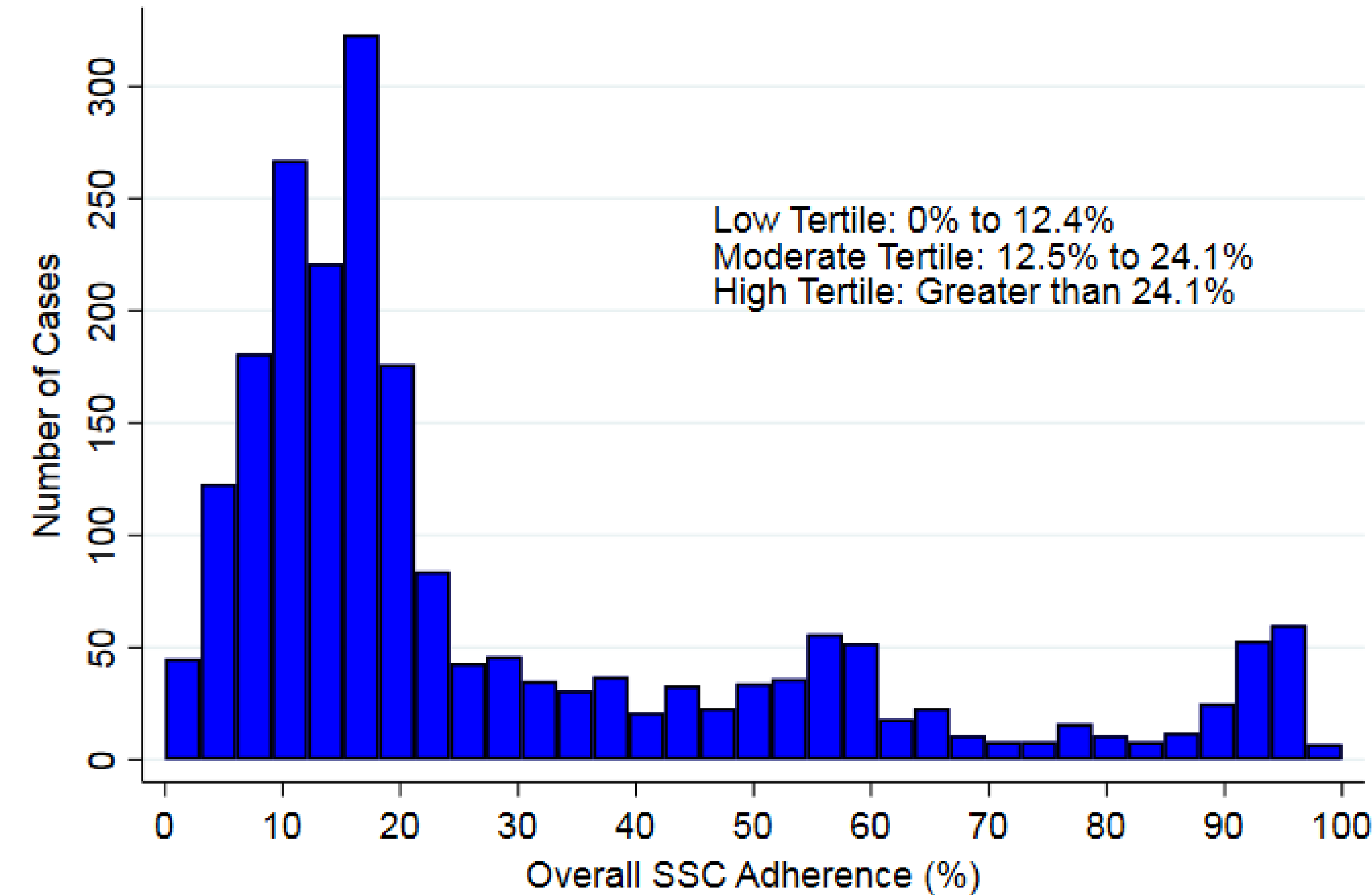
## Methods

- Data was collected on SSC adherence and outcomes through observation of surgical procedures by trained medical data collectors in a pre- and post- intervention study in 10 intervention and 10 control facilities in the Lake Zone.
- The associations between SSC adherence and maternal sepsis, post-operative sepsis and SSI rates were evaluated by treating SSC adherence as a categorical variable based on tertiles defined as low, moderate and high adherence with comparisons performed using Chi-square or Fisher's exact tests.
- A Bonferroni-adjusted significance level of  $P < 0.017$  ( $0.05/3$ ) was applied to determine statistical significance.

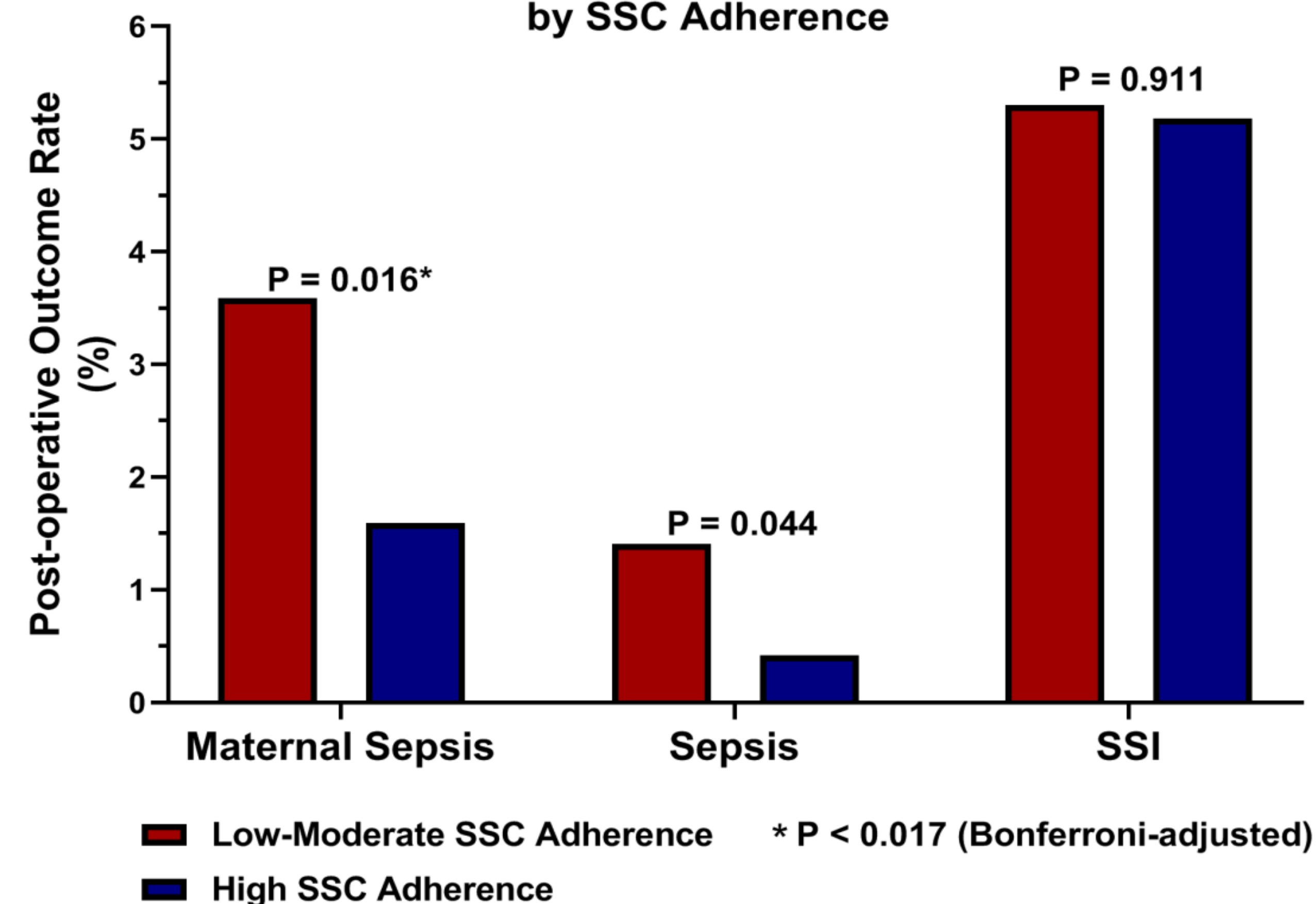
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Distribution of SSC Adherence



Comparison of Post-Operative Outcome Rates by SSC Adherence



## Results

- Among 2,130 surgical cases observed in the pre- and post- intervention periods in both intervention and control regions:
  - the maternal sepsis rate was 2.9%
  - the post-operative sepsis rate was 1.1%
  - the SSI rate was 5.3%
- The lowest SSC adherence tertile corresponded to an adherence rate of 0% to 12.4%, moderate adherence was 12.5% to 24.1% and high adherence was greater than 24.1%.
- Comparing low-moderate vs. high SSC adherence:
  - maternal sepsis rates were higher in the low-moderate group (3.6% vs. 1.6%;  $P=0.016$ )
  - the difference in sepsis rates was not statistically significant (1.4% vs. 0.4%;  $P=0.044$ )
  - SSI rates were similar (5.3% vs. 5.2%;  $P = 0.911$ )

## Conclusions

We found significantly lower rates of maternal sepsis among cases in which high SSC adherence was observed. No statistically significant differences were seen in post-operative sepsis and SSI rates between cases with high versus low-moderate SSC adherence. Benefits of adherence to the SSC associated with improved surgical quality also reduced adverse outcomes in the Lake Zone of Tanzania.

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