

# Evaluating the Stewardship Response to 2018 Thyroid Surgery Prophylaxis Guidelines

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## Introduction

Antimicrobial Resistance (AMR) is a growing global problem that has significant public health implications.

Careful consideration by policy-makers, institutions, and individual physicians is required to solve this global issue.

Global Burden of Antimicrobial Resistance

**1.27 Million Deaths Per Year**

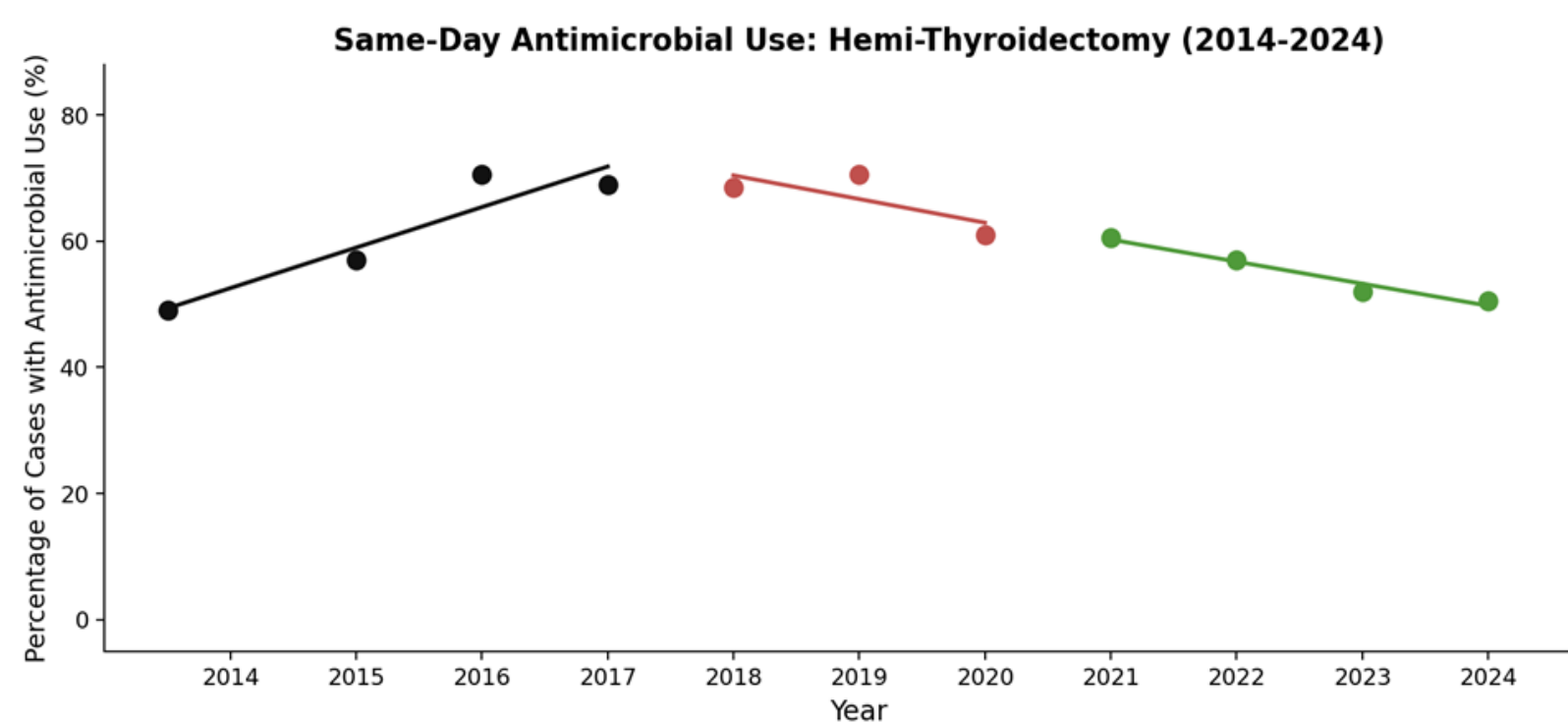
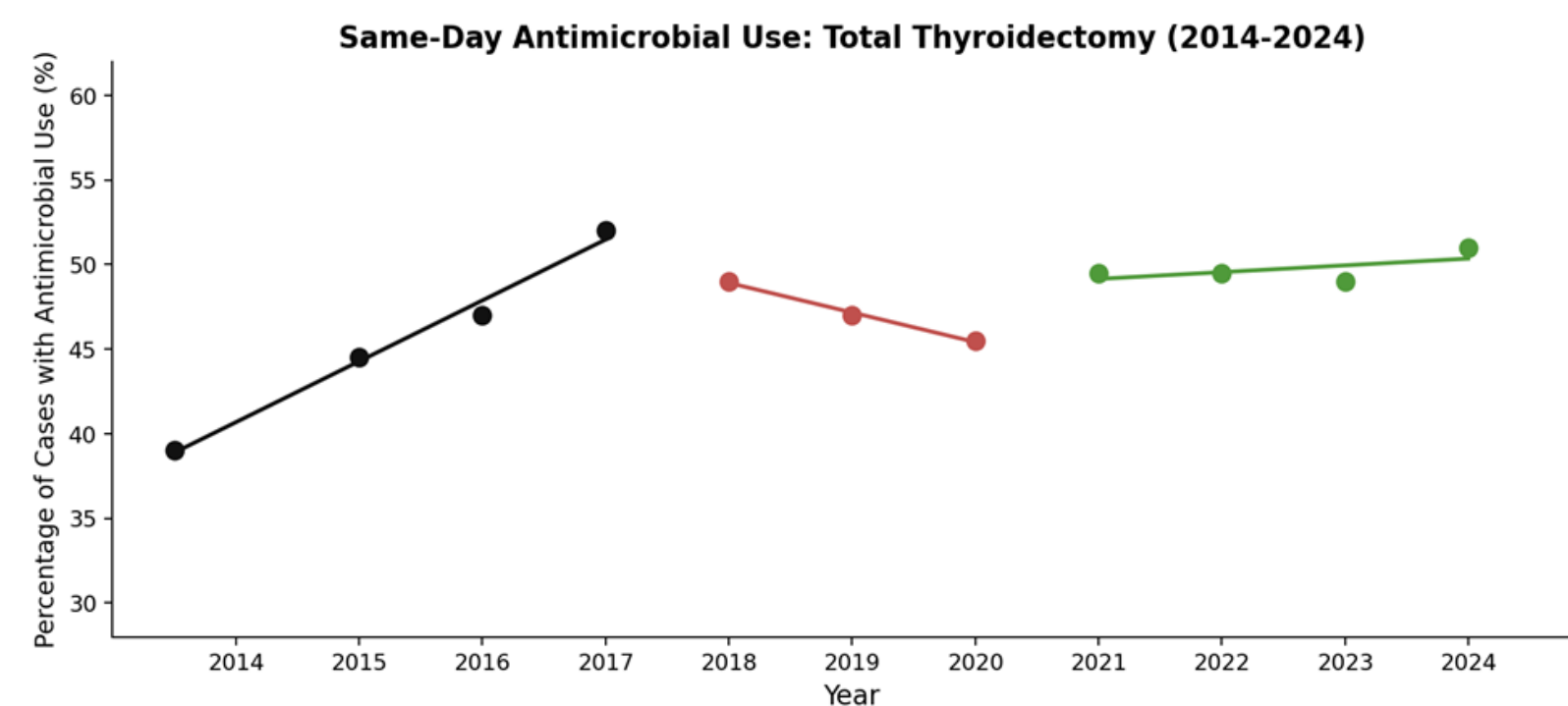
Attributed to AMR

Lancet 2022

Recent 2018 guidelines discouraged routine antimicrobial prophylaxis in thyroid surgery as thyroid surgeries were determined to be clean and antimicrobial use unnecessary in prevention of infection related to these surgeries.

## Study

**Study Question:** Did the recent guideline change to reduce antimicrobials in clean thyroid surgeries have its intended effect of improving antibiotic stewardship?



Pre-guideline  
Period  
2014-2017

Immediate Post-  
Guideline Period  
2018-2020

Sustained Post  
Intervention Period  
2021 - 2024

**Study Design:** Retrospective cohort study utilizing the TriNetX multi-institutional EHR database. Proportion of same-day prophylactic antimicrobial use in thyroidectomy and hemithyroidectomy was trended across three time periods.

## Results and Conclusion

### Results

- Total Thyroidectomy: Significant pre-intervention upward trend (+4.32%/yr,  $p=0.006$ ), significant decline following guideline introduction (-1.86%/yr,  $p=0.023$ ), subsequent stabilization at a higher proportion without significant trend (+0.51%/yr,  $p=0.391$ ).
- Hemithyroidectomy: Non-significant upward trend pre-intervention (+7.39%/yr,  $p=0.078$ ), non-significant decline post-guideline (-4.12%/yr,  $p=0.476$ ), significant decrease in late period (-3.20%/yr,  $p=0.014$ ).

### Conclusions

- Hemithyroidectomy trends were initially inconsistent but ultimately demonstrated a significant late reduction in antimicrobial use.
- Antimicrobial use in thyroidectomies showed an early guideline-associated decline but then plateaued at a higher overall proportion of antimicrobial use level compared to years prior to the intervention.
- Findings highlight the need for renewed institutional and personal stewardship efforts to reduce unnecessary antimicrobial exposure in clean thyroid surgery and limit emerging antimicrobial resistance.

### Future Directions

- Studies examining patient outcomes including surgical site infection rates to evaluate the safety of withholding prophylactic antibiotics.
- Qualitative studies evaluating the rationale in surgeons that use antimicrobials would illuminate possible barriers or concerns not captured in the aggregate data.

## References

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