

Infectious Disease Management of Homeless and Non-Homeless Populations in United States Emergency Departments

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Abstract

INTRODUCTION

Studies have long documented the increased emergency department usage in the United States by homeless persons compared to their housed counterparts, as well as an increased overall prevalence of infectious diseases. However, there is a gap in knowledge on the treatment that homeless persons receive for these infectious diseases within United States emergency departments compared to their housed counterparts. This study seeks to understand this potential difference in treatment, including diagnostic services tested, procedures performed, and medications prescribed.

METHODS

This study utilized a retrospective, cohort study design to analyze data from the 2007-2010 National Hospital Ambulatory Medical Care Survey (NHAMCS) database. Complex sample logistic regression analysis was used to compare variables, including diagnostic services, procedures, and medication classes prescribed between homeless and private residence individuals seeking emergency department treatment for infectious diseases. This provided an odds ratio to compare the two populations, which was then adjusted for confounding variables.

RESULTS

Compared to private residence individuals, homeless persons were more likely (OR: 10.99, $p<0.05$, CI: 1.08-111.40) to receive sutures or staples when presenting with an infectious disease in United States emergency departments. Compared to private residence persons, homeless individuals were less likely (OR: 0.29, $p<0.05$, CI: 0.10-0.87) to be provided medications or immunizations when presenting with an infectious disease in United States emergency departments, and significant differences were detected in prescribing habits of multiple medication classes.

DISCUSSION AND CONCLUSION

This study detected a significant difference in suturing/stapling and medication prescribing patterns for homeless persons with an infectious disease in United States emergency departments, compared to their housed counterparts. These results provide a platform for continual research.

Introduction

Homelessness is a grave problem facing the United States and the international community, as demonstrated in Figure 1.

While homelessness and its associated morbidities – including infectious diseases - is a critical problem within the United States, current medical literature has not comprehensively looked at the treatment that homeless persons receive for these infectious diseases once they reach one of their primary sources of care: emergency departments. This study seeks to change this.

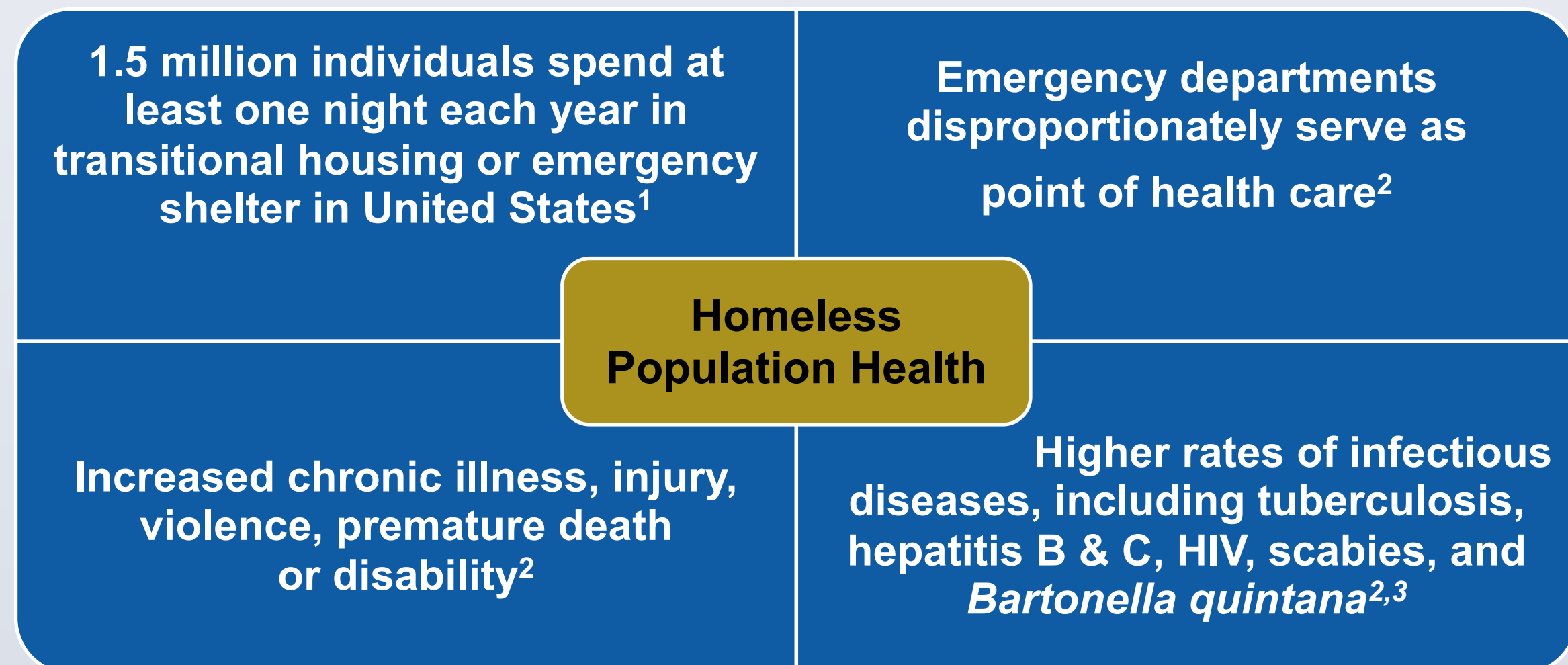


Figure 1: Homeless Population Health

Aims

To detect any differences in the treatment of infectious diseases of homeless persons compared to private residence persons in United States emergency departments, with treatment defined as:

- Diagnostic services provided
- Procedures performed
- Medication class prescribed

Methods

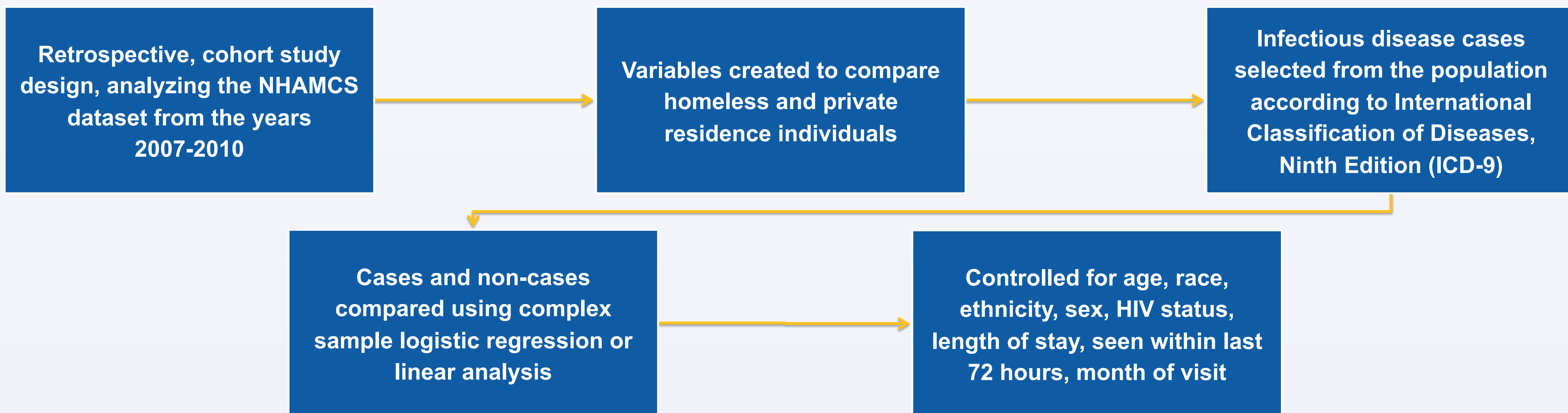


Figure 2: Study Methods

Results

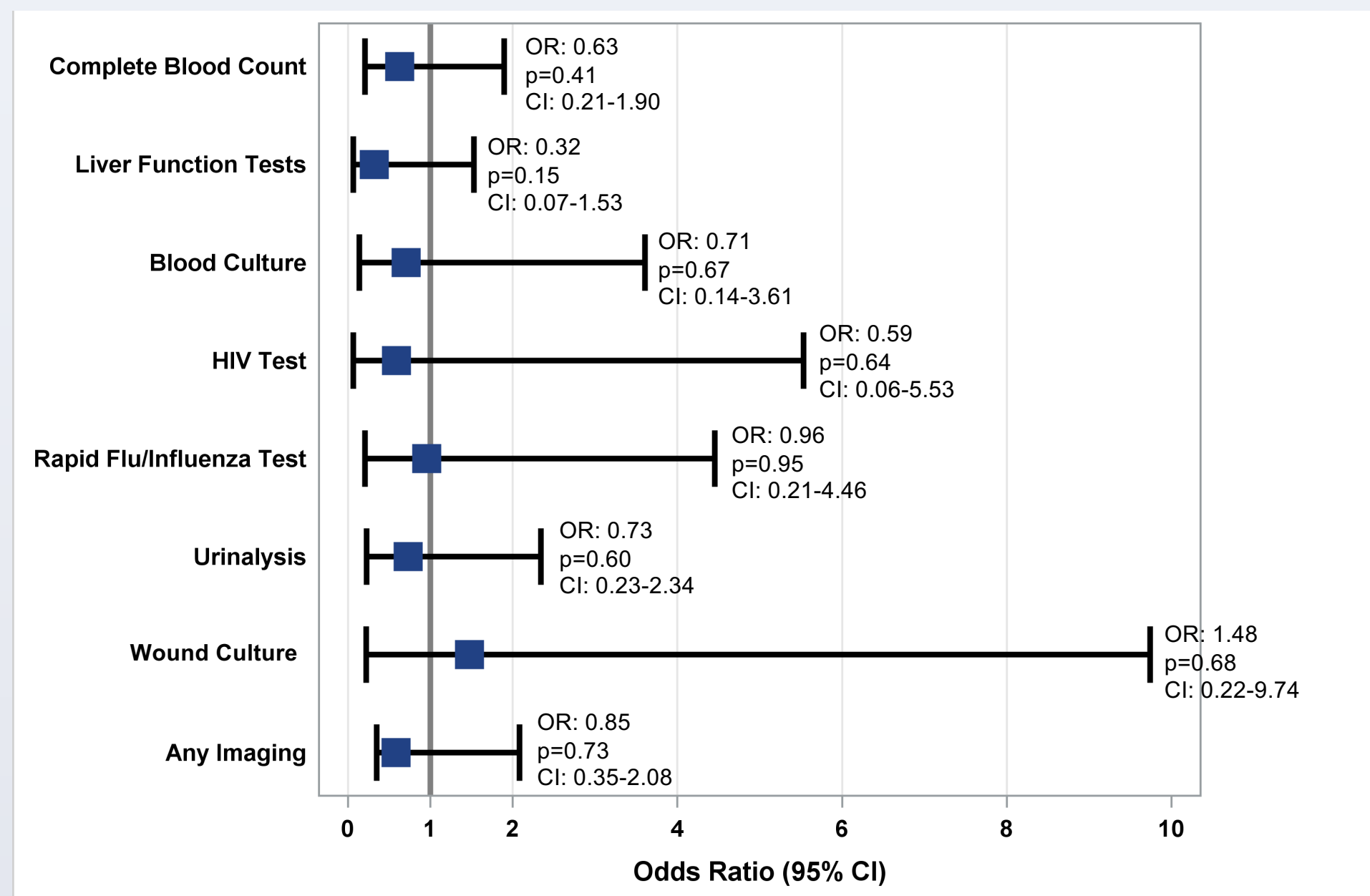


Figure 3: Diagnostic Services Provided in Homeless vs. Private Residence Individuals

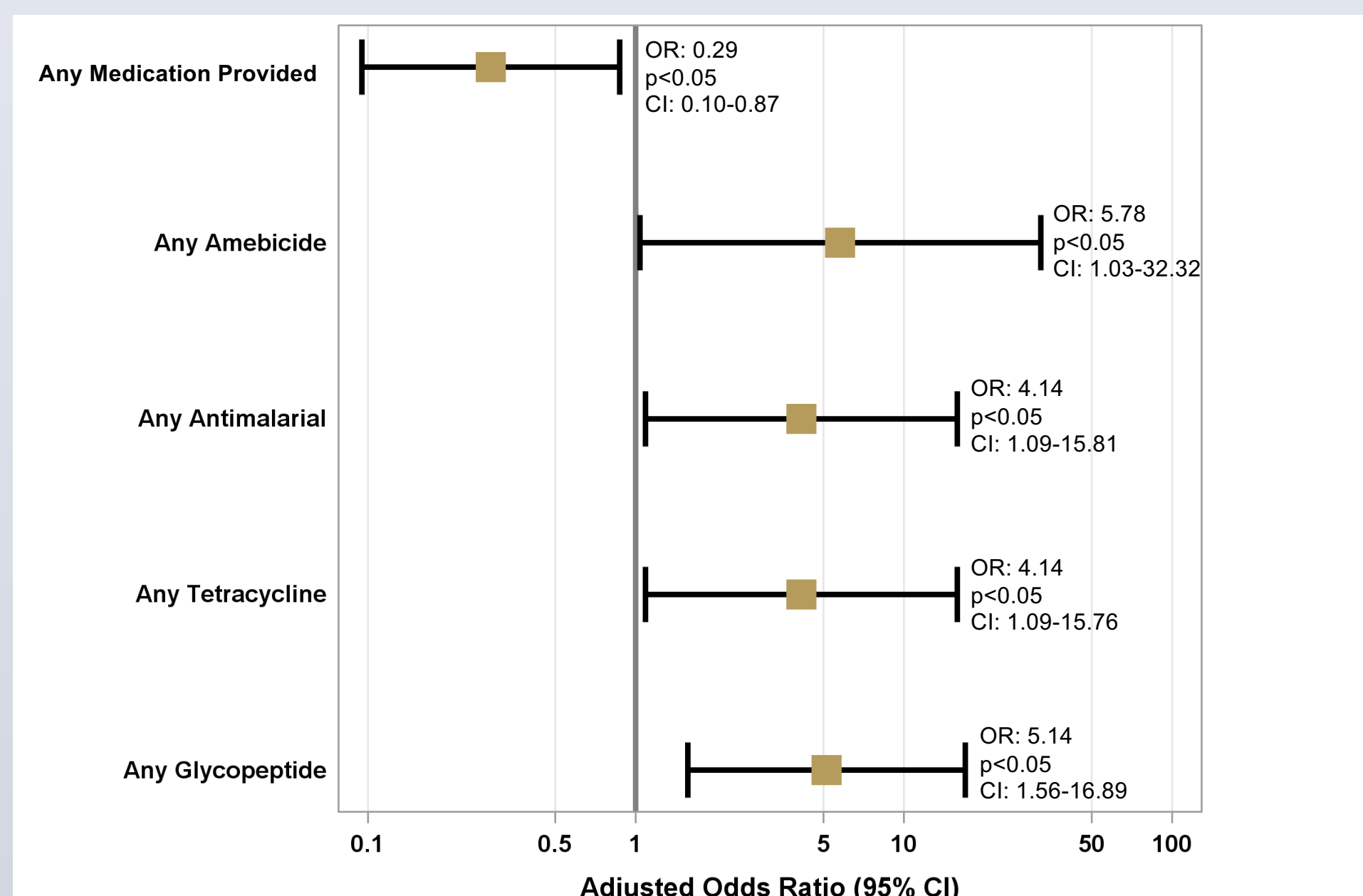


Figure 5: Medications Provided in Homeless vs. Private Residence Individuals

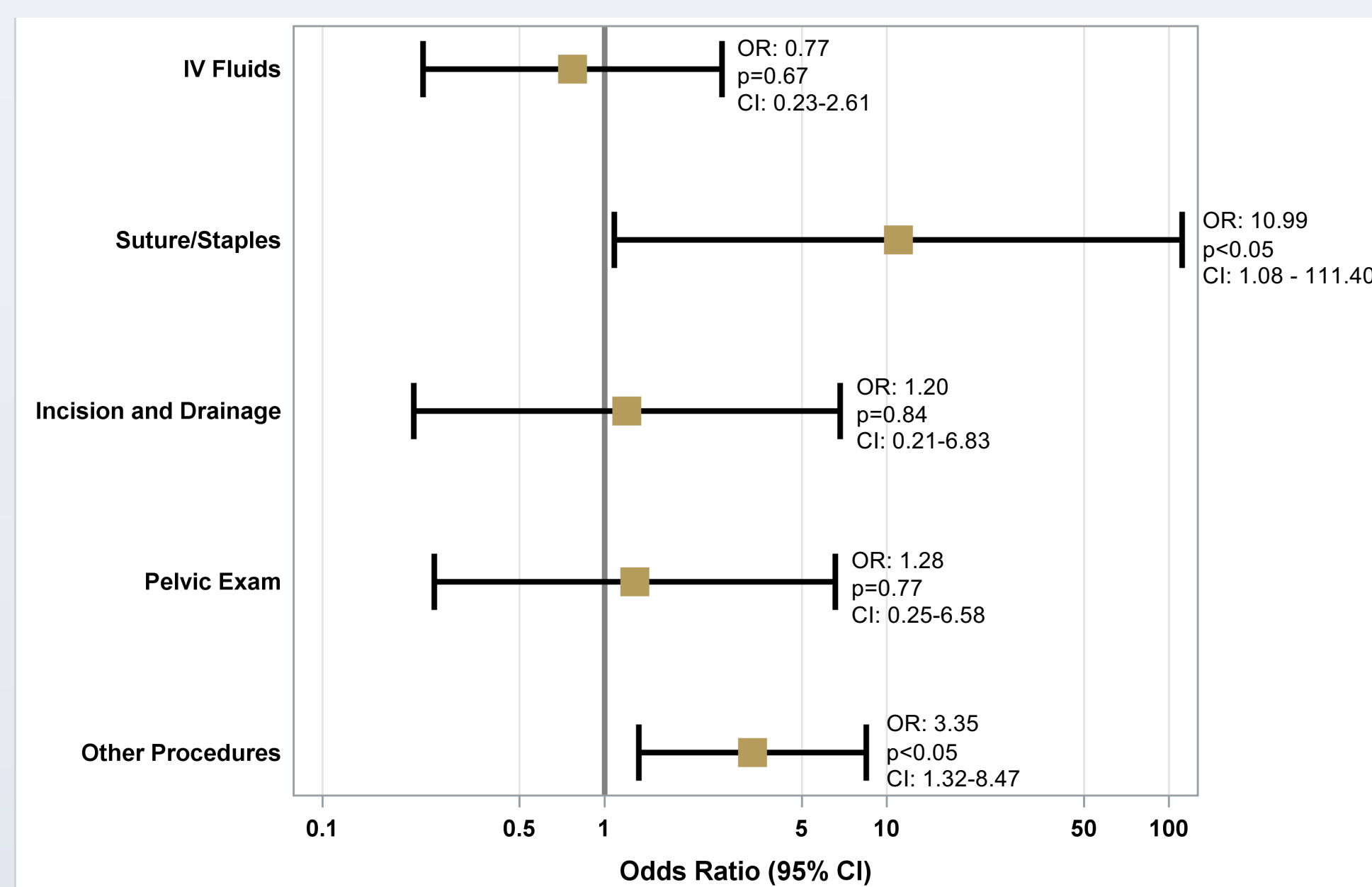


Figure 4: Procedures Performed in Homeless vs. Private Residence Individuals

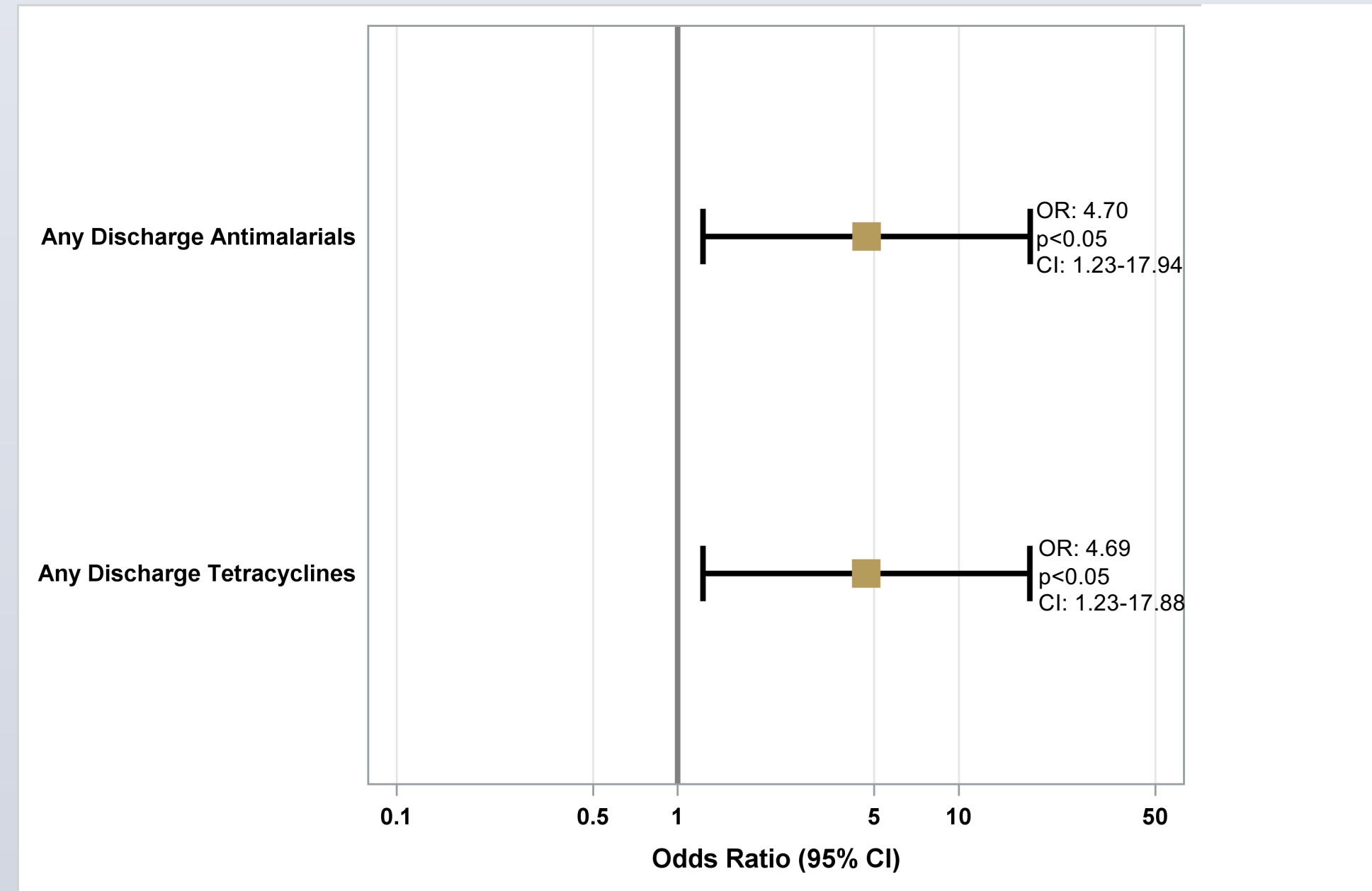


Figure 6: Medications Prescribed in Homeless vs. Private Residence Individuals

Discussion

- Sutures/Staples
 - More aggressive with closure secondary to concern of exposure upon discharge, questionable follow-up
- Other Procedure
 - Difficult to interpret given large range of included variables
- Medication Provided:
 - Not specifically anti-infective agents
 - Concern over access to fill prescription, transportation to pharmacy, insurance coverage
- Amebicide:
 - Increased coverage due to concern over exposure
- Antimalarial:
 - Difficult to explain
 - Refugee/immigrant status, race does not adequately explain^{4,5,6}
 - No apparent link with other medication uses, such as autoimmune conditions⁶
- Glycopeptide:
 - High efficacy in methicillin-resistant *Staphylococcus aureus* (MRSA) infections; increased colonization in community⁷
- Tetracycline
 - High efficacy, generic/lower cost, avoid potential drug allergies of penicillin antibiotics
 - Treat infections associated with outdoor/wooded exposures and sexually transmitted infections; higher prevalence in homeless^{8,9}

Conclusions

- Homelessness is a critical problem within the United States
- Infectious diseases disproportionately affect homeless individuals
- Emergency departments often serve as a point of care for persons facing homelessness
- A significant difference exists in the infectious disease treatment between homeless and privately housed individuals in United States emergency departments, specifically:
 - Increased odds of sutures or staples (Fig. 4)
 - Lower odds of medication being provided (Fig. 5)
 - Higher odds of specific anti-infective medication classes being prescribed (Fig. 6)

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