

# Hepatitis A and Homelessness: A Systematic Review

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## Introduction

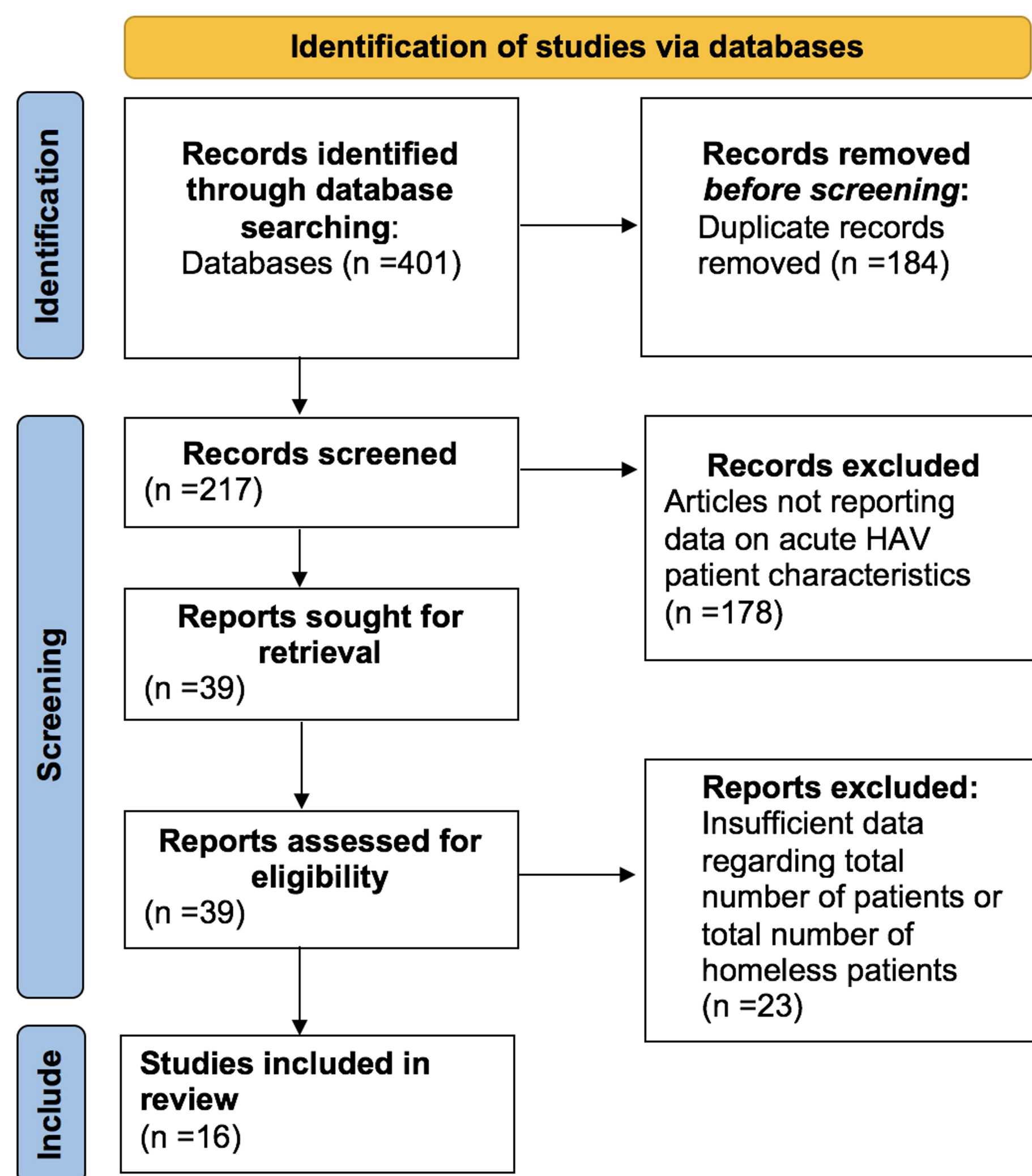
- Hepatitis A outbreaks have increased in frequency in the United States in recent years<sup>1</sup>
- Homeless populations are at increased risk of Hepatitis A Virus (HAV) infection<sup>2</sup>, and may be predisposed to worse outcomes due to associated comorbidities<sup>3</sup>
- The **goals** of this study were to:
  - summarize characteristics of patients with acute HAV;
  - estimate the proportion of homeless patients within reported HAV outbreaks; and
  - identify differences in outcomes between homeless and non-homeless patients with HAV infection
- We hypothesized that homeless individuals are disproportionately impacted by acute HAV compared to the general population, and that homeless patients with HAV infection have worse outcomes compared to non-homeless patients
- We predict that data analyzed would support current HAV vaccination efforts targeted towards the homeless population, as recommended by the CDC<sup>4</sup>

## Aims and Objectives

- To summarize and describe patient characteristics in cases of acute HAV infection
- To report the number and proportion of acute HAV cases associated with homelessness
- To investigate outcomes (hospitalization rates) of patients with acute HAV infection
- To compare outcomes of acute HAV infection in homeless vs non-homeless patients

## Methods

- Systematic review of the literature on Homelessness and HAV using PRISMA guidelines
- Search terms: ("Hepatitis A" OR HAV [tiab]) AND (homeless\* OR street person\* OR street people OR "Homeless Persons" OR "persons experiencing homelessness" OR PEH [tiab])
- Databases used: PubMed, Embase, Cochrane Library, and Google Scholar
- Inclusion criteria: Studies published worldwide on acute cases of HAV with data available on number of cases and number of homeless cases
- Exclusion criteria: Studies that do not report data on acute HAV cases, number of cases, and number of homeless cases
- Data on patient characteristics were extracted and analyzed
- A Z-test statistical analysis was performed to determine whether there was a statistically significant difference between homeless and non-homeless HAV hospitalization rates



**Figure 1:** PRISMA Flow Diagram

## Results

**Table 1:** Patient characteristics for acute HAV cases

Total number of patients (%)	6046 (100)
Number of homeless patients (%)	1689 (27.9)
<sup>a</sup> Number of Male patients (%)	3919 (65.5)
<sup>b</sup> Average age of patients (n=508)	44.9
<sup>c</sup> Number of patients with history of intravenous drug use (%)	2376 (42.1)

a: There were only 5981 patients reported in our study with data available on sex  
 b: There were only 508 patients in our study with data available on average age. Cumulative average age was calculated across these 508 patients to obtain the average listed in Table 1  
 c: There were only 5648 patients reported in our study with data available on history of intravenous drug use

**Table 2:** Hospitalization data in acute HAV cases

Total number of hospitalizations reported	3882
Number of homeless hospitalizations reported	300
Number of non-homeless hospitalizations reported	535
<sup>a</sup> Proportion of hospitalized patients that were homeless (n=835)	35.9%
<sup>a</sup> Proportion of hospitalized patients that were non-homeless (n=835)	64.1%
Total hospitalization rate (n=5734)	67.7%
<sup>b</sup> Homeless hospitalization rate (n=387)	77.5%
<sup>c</sup> Non-homeless hospitalization rate (n=1031)	50.9%

a: There were only 835 hospitalized patients reported in our study with data available on homeless/non-homeless status  
 b: There were only 387 homeless patients reported in our study with data available on hospitalization status  
 c: There were only 1031 non-homeless patients reported in our study with data available on hospitalization status

**Table 3:** Z-test for difference in hospitalization rates between homeless and non-homeless patients with acute HAV

Difference in hospitalization rate between homeless and non-homeless patients	+26.6%
Standard deviation	0.026
Confidence interval (CI)	90%
Lower bound 90% CI	22.3%
Upper bound 90% CI	30.9%

Hospitalization rates for acute HAV infection are 22.3-30.9% higher in homeless patients than in non-homeless patients

## Conclusions

- Homeless individuals account for a significant portion of cases in HAV outbreaks (27.9%)
- Homeless patients infected with HAV have higher hospitalization rates (77.5%) compared to non-homeless patients infected with HAV (50.9%)
- Our data re-emphasizes the importance of HAV vaccination efforts targeted towards the homeless population

## References

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