



# Receipt and Virologic Outcomes of HCV Direct-Acting Antivirals by Alcohol Use and HIV Status



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## Background

- Unhealthy alcohol use and human immunodeficiency virus (HIV) infection are not contraindications to initiation of direct-acting antiviral (DAA) therapy for chronic hepatitis C virus (HCV) infection
- However, the extent to which receipt of DAA therapy and subsequent achievement of cure of chronic HCV are impacted by alcohol use and HIV co-infection status is unknown

## Objective

- To evaluate receipt of DAA therapy and HCV cure rates by alcohol use category and HIV status

## Methods

### Subjects and Study Period

- The US Veterans Health Administration Birth Cohort, a national study of >4.5m individuals born between 1945-1965 and receiving care in the US Department of Veterans Affairs (VA) health system
- **Sample:** All HCV antibody-positive patients (HCV+)
- **Baseline:** First outpatient visit date after 1 Jan 2014
- **Study period:** From baseline to 31 May 2017; laboratory values to determine HCV cure were assessed through 30 Nov 2017
- **Excluded:** individuals with negative HCV viremia prior to 1 Jan 2014

### Exposure groups

- **Alcohol use categories:** defined by Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) questionnaire scores and validated ICD codes for alcohol use disorder (AUD, two outpatient or one inpatient of ICD-9 303.X or 305-305.03, or ICD-10 F10.10/.20/.21/.229); assessed in year prior to baseline
  - **Abstinent:** AUDIT-C 0
  - **Lower-risk drinking:** AUDIT-C 1-3
  - **Hazardous/binge drinking:** AUDIT-C ≥4 or reported ≥6 drinks on one or more occasions in the past year
  - **AUD:** Alcohol use disorder diagnosis irrespective of AUDIT-C
- **HIV status:** ICD-9 diagnosis (two outpatient or one inpatient of 042, 044, or V08)

### Main Study Outcomes

- **DAA receipt:** Defined as any released prescription
- **SVR12:** Sustained virologic response (absence of HCV viremia 12 or more weeks after HCV treatment (indicated HCV cure))

### Statistical analysis

- Frequencies of DAA receipt and SVR12 were calculated by alcohol use category and HIV status
- Logistic regression models were used to estimate associations between alcohol use and SVR12, stratified by HIV status
- Models were adjusted for baseline age, stage of liver fibrosis (FIB-4), diagnosis of hepatic decompensation, and body mass index

## Results

### Sample

- Among 134,491 HCV+ patients, median age was 61 years, 97% were male, 55% were white, 40% were black, and 3,670 (3%) were HIV+
- Among HIV+ patients, 1,663 (45%) reported abstinence, 666 (18%) lower risk drinking, 203 (6%) hazardous/binge drinking, and 1,138 (31%) had an AUD
- Among HIV-uninfected patients, 55,284 (42%) reported abstinence, 24,807 (19%) lower risk drinking, 11,044 (8%) hazardous/binge drinking, and 39,686 (30%) had an AUD

Fig 1. Percentage who received DAA therapy

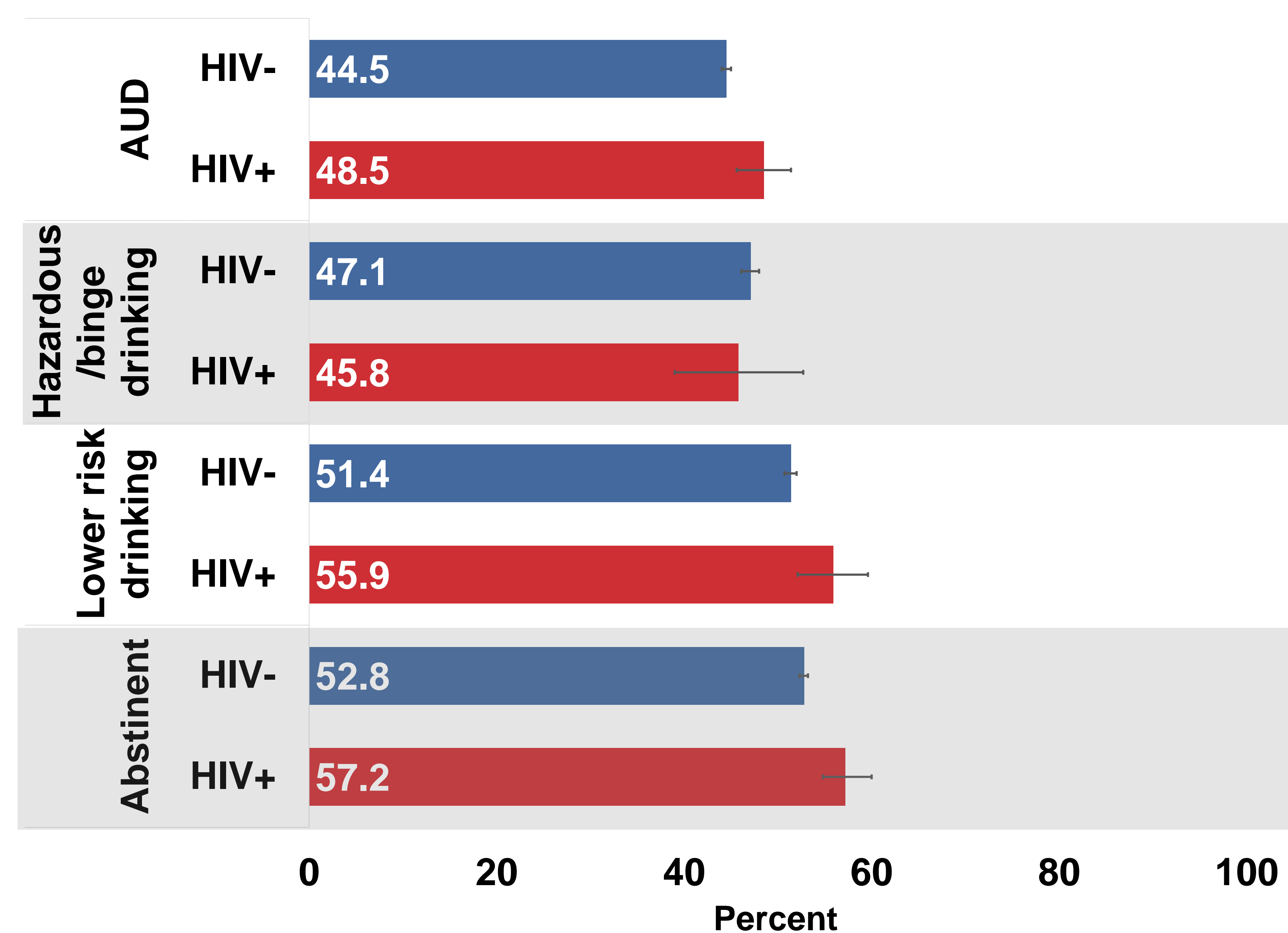
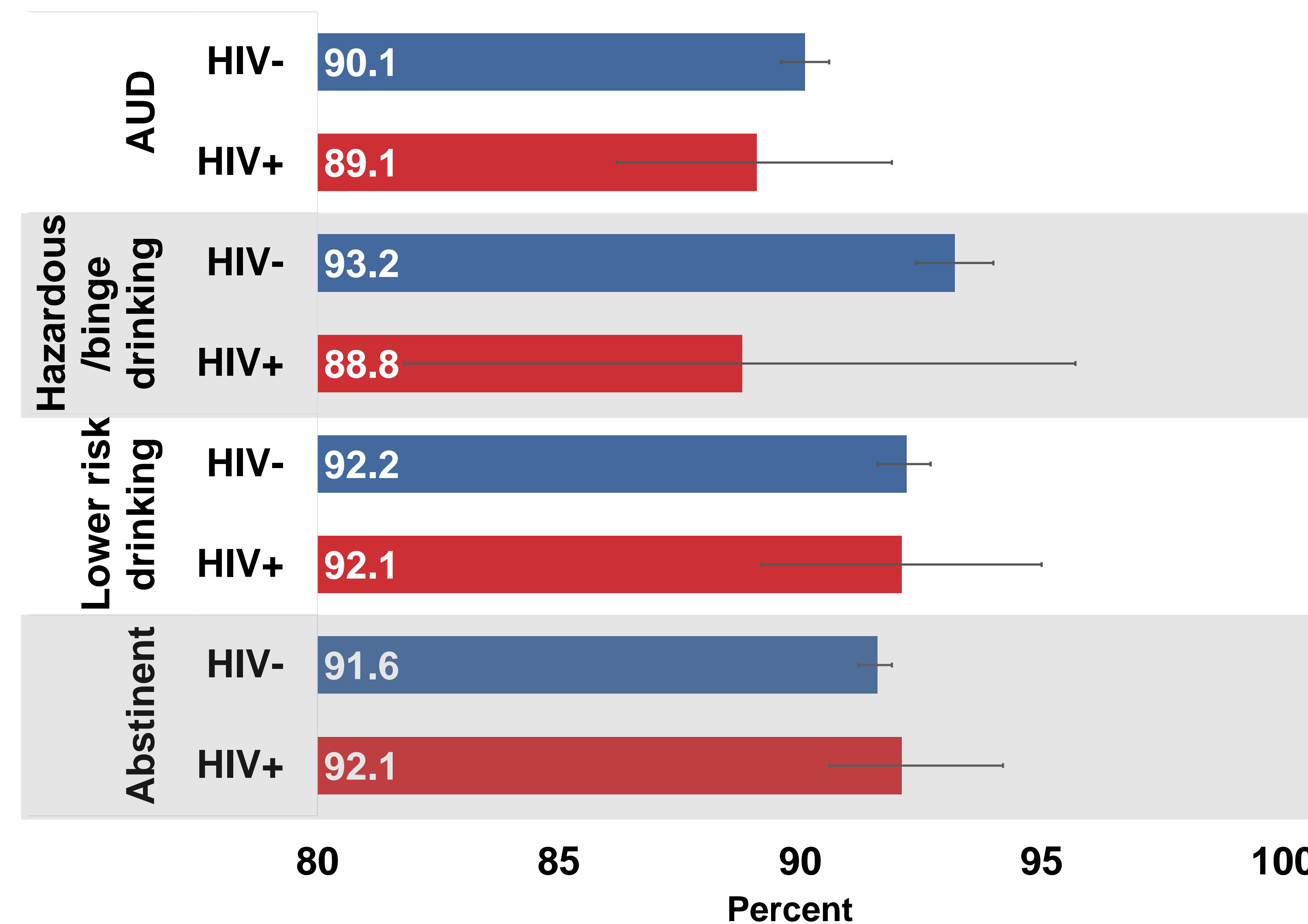
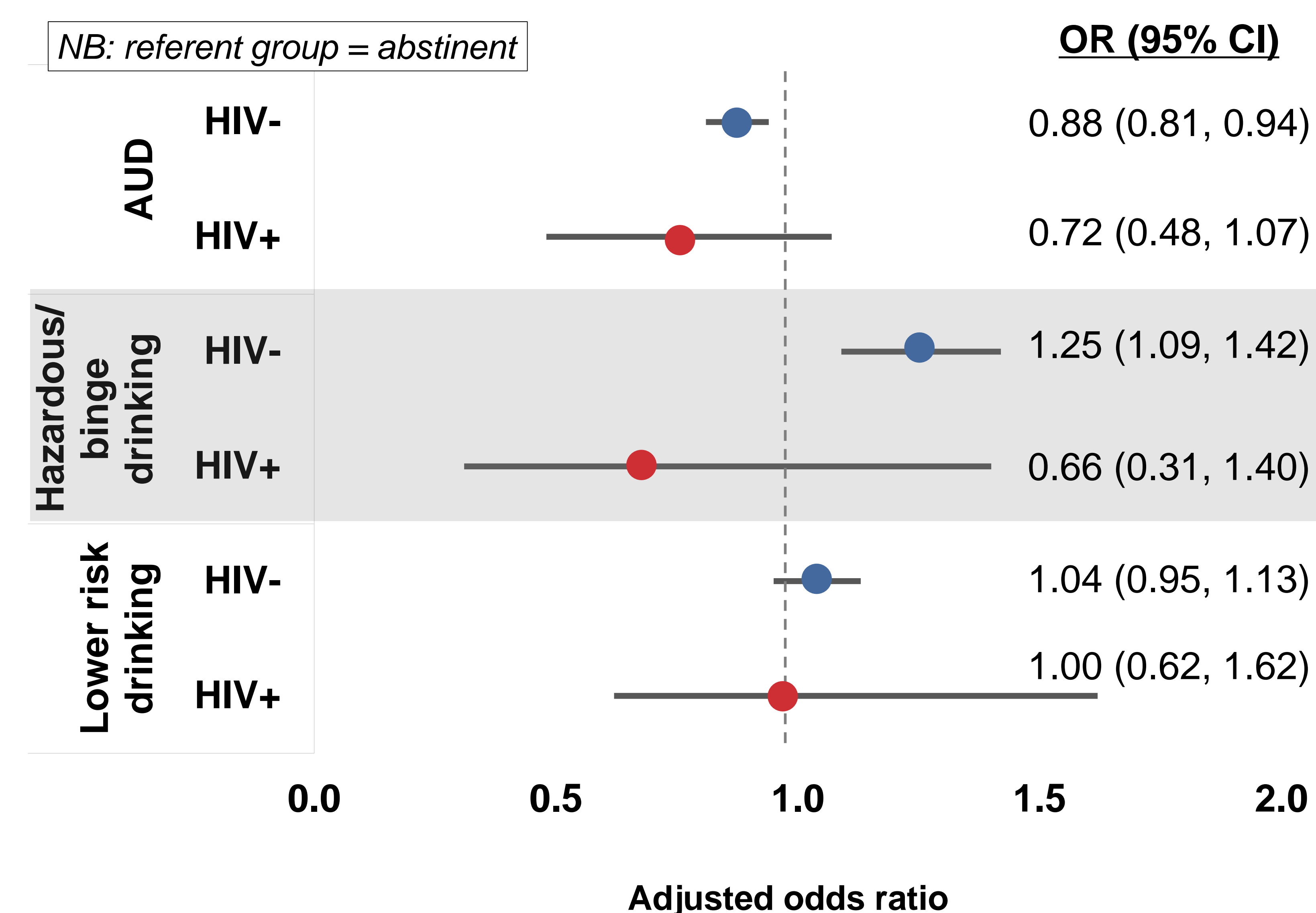


Fig 2. Percentage who achieved SVR12



## Results

Fig 3. Associations between alcohol use and SVR12 by HIV status



## Conclusions

- HIV+ patients and abstinent or lower risk drinkers were more likely to receive DAAs compared to uninfected patients and hazardous/binge drinkers or those with an AUD.
- High SVR12 rates were observed across all alcohol categories, but HIV-uninfected patients with an AUD had modestly lower SVR12 than those who reported no alcohol consumption.
- Alcohol use, even harmful use, should not preclude HCV treatment.

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