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# Hospital Readmissions Among Adults Living with HIV in the US

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## BACKGROUND

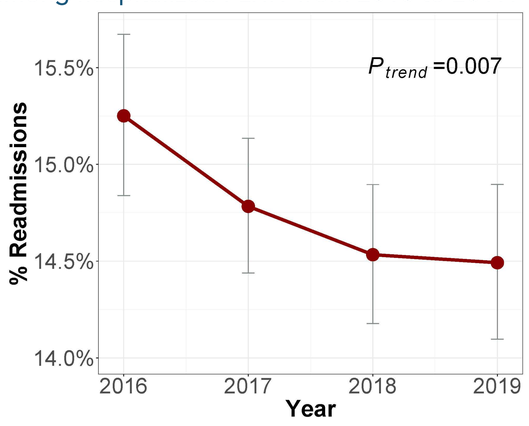
- Hospital readmission is an indicator of quality-of-care.
- There are limited nationwide data characterizing readmissions among people living with HIV (PLHIV) in the era of universal HIV treatment.
- We describe the contemporary risk of all-cause hospital readmission for hospitalized adult PLHIV in the US.

## METHODS

- The Healthcare Cost and Utilization Project Nationwide Readmission Database (NRD) is a national sample of all-payer hospitalizations (~17 million discharges per year [unweighted]), representing 60% of US hospitalizations.
- The study included adult PLHIV who were discharged alive from their first recorded (index) hospitalization between January and November in a given year.
- The primary outcome was the 30-day all-cause readmission since the discharge of index hospitalization.
- Data from the 2016-2019 NRD were used to evaluate trends in 30-day hospital readmission risk over time.
- Data from the 2019 NRD were used to describe risk factors of 30-day hospital readmissions. Age- and sex-adjusted risk ratios (aRR) were estimated by index admission risk factors via modified Poisson regressions.
- Subgroup analyses were conducted stratified by sex.
- Data were weighted to obtain national estimates.

## RESULTS

### Figure 1. Trend in 30-day hospital readmission risk among hospitalized PLHIV from 2016 to 2019.




There was a decreasing trend in the risk of 30-day readmission among hospitalized PLHIV from 2016 to 2019, but still more than 1 in 10 PLHIV were readmitted within 30 days in 2019. Readmissions disproportionally occurred among those with older age, from low income areas, and with comorbidities.

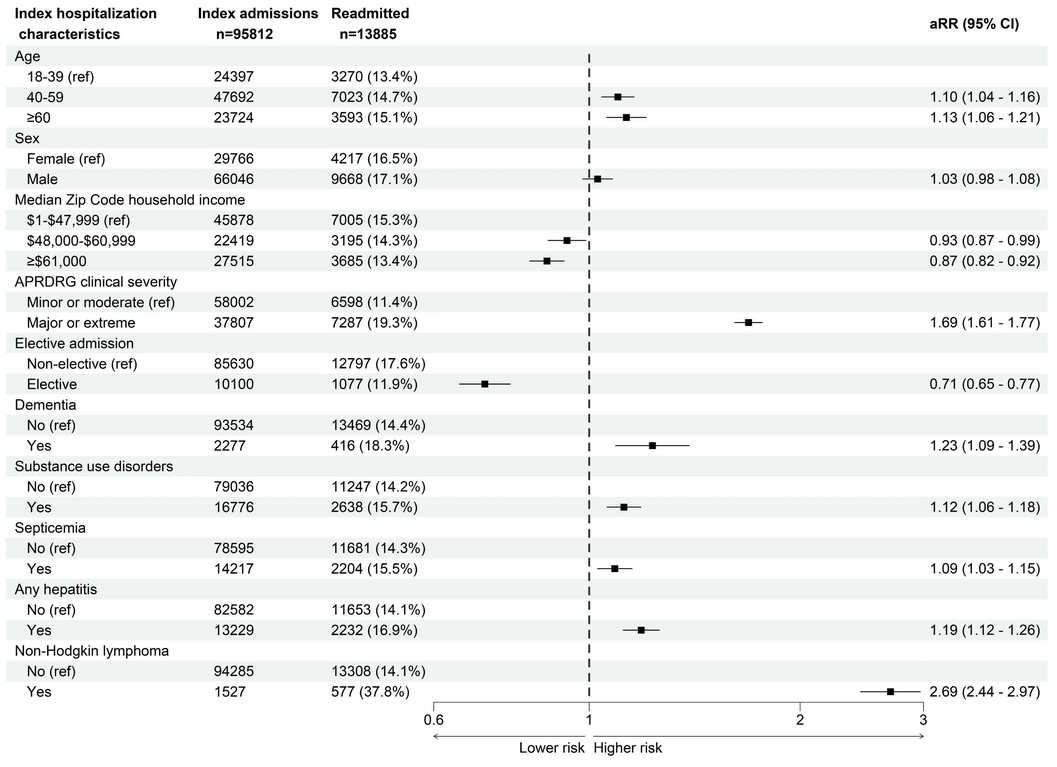
## RESULTS

- The 30-day readmission probability among PLHIV marginally decreased from 2016 to 2019 (**Figure 1**).
- In 2019, there were 95,812 PLHIV included: 68.9% were males and the median age was 52 (IQR=39-59) years.
- In 2019, the probability of 30-day readmission among PLHIV was 14.5% (n=13,885).
- Among the 13,885 readmitted, 14.1% (n=1961) had more than 1 readmission within 30 days.
- Compared to index admissions, readmissions were more severe and less likely to be elective admissions (**Table 1**).
- PLHIV with increased risk of readmissions: older age, from lower income areas, with a higher clinical severity, admitted non-electively and with comorbidities (**Figure 2**).
- Stratified by sex, septicemia index hospitalizations were associated with greater readmission risk among females (aRR:1.28 [95%CI: 1.17-1.42]), but not among males (aRR:1.01 [95%CI: 0.95-1.08]).

### Table 1. Characteristics of index admissions and readmissions among hospitalized PLHIV in 2019.

| Characteristics | Index admissions, n=95,812 | 30-day readmissions, n=13,885 |
|---|---|---|
| | Weighted column % | |
| Age, years | | |
| 18-39 | 25.6 | 23.5 |
| 40-59 | 49.7 | 50.5 |
| ≥60 | 24.6 | 26.0 |
| Sex | | |
| Female | 31.1 | 30.5 |
| Male | 68.9 | 69.5 |
| Median ZIP Code household income | | |
| $1-$47,999 | 47.9 | 50.3 |
| $48,000-$60,999 | 23.4 | 22.9 |
| ≥$61,000 | 27.3 | 25.3 |
| APRDRG clinical severity | | |
| Minor or moderate | 60.5 | 45.4 |
| Major or extreme | 39.5 | 54.6 |
| Elective admission | 10.6 | 6.5 |
| Dementia | 2.4 | 3.4 |
| Substance use disorders | 17.5 | 19.0 |
| Septicemia | 14.8 | 16.5 |
| Any hepatitis | 13.8 | 16.3 |
| Non-Hodgkin lymphoma | 1.6 | 4.7 |

### Figure 2. Age and sex adjusted risk of 30-day readmission among hospitalized PLHIV in 2019.




## CONCLUSIONS

- The risk of 30-day readmission marginally decreased over time among PLHIV.
- Over 1 in 10 hospitalized PLHIV were readmitted within 30 days in 2019.
- Readmissions among PLHIV disproportionally occurred among those with older age, from lower income areas, and with comorbidities.
- Studies are needed to evaluate the reasons for readmissions in these populations.

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