

Increased Overall Life Expectancy But Not Comorbidity-Free Years for People with HIV

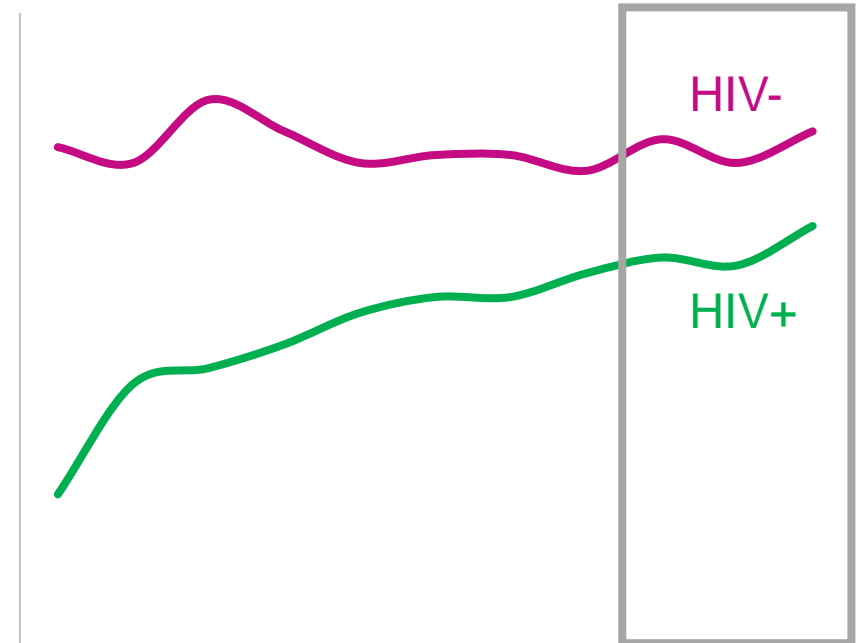
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Background

- Antiretroviral therapy (ART) has dramatically increased life expectancy for people with HIV (PWH)
 - Life expectancy gap by HIV status was 13 years in 2008-2011, and 9 years for PWH who initiated ART with CD4 \geq 500
- 1) Has the gap narrowed further?
 - 2) How many life years are healthy?

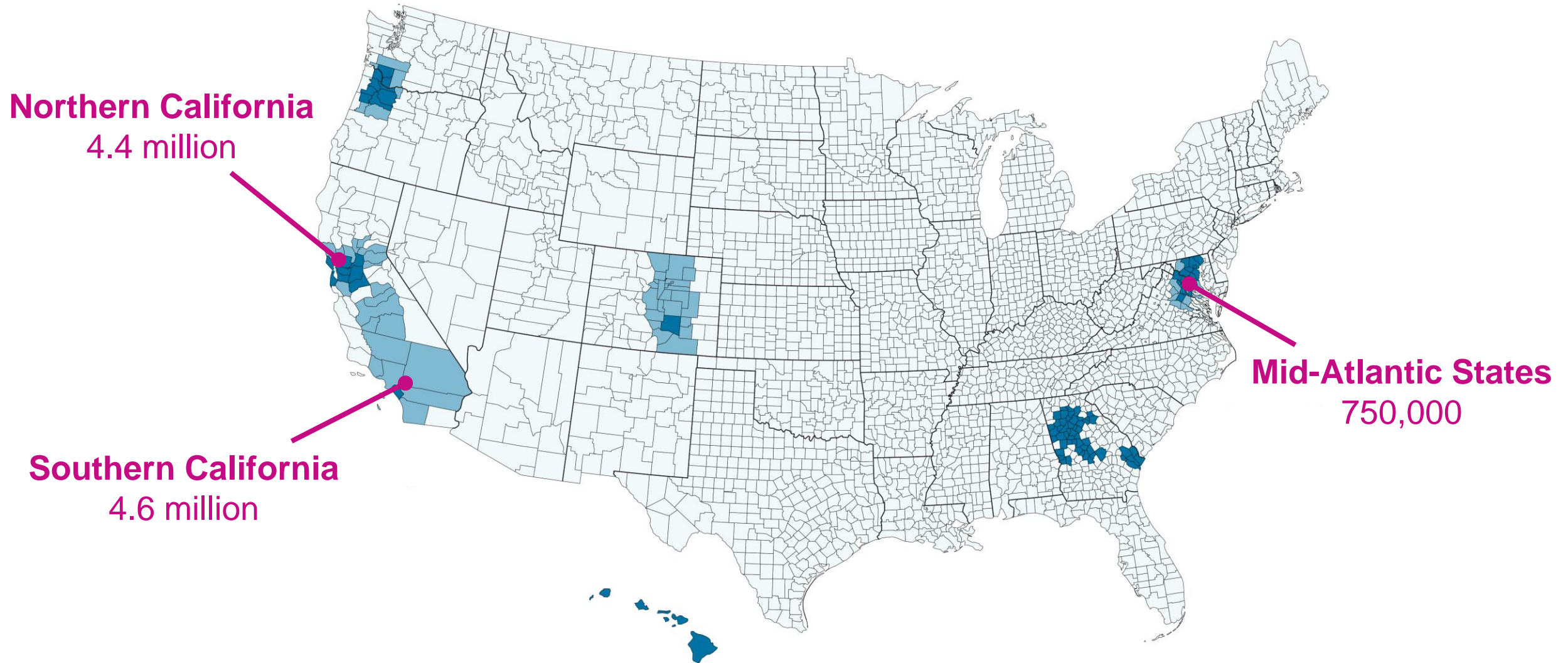


Marcus et al., *JAIDS* 2016

Objective

To quantify the gap in **overall lifespan** and **comorbidity-free years** between people with and without HIV with access to care in the U.S.

Study setting: Kaiser Permanente



Study design

- Cohort study of adults (aged ≥ 21) with and without HIV during 2000-2016
- Frequency-matched 1:10 on age, sex, race/ethnicity, medical center, and year
- Clinical data from electronic health records and internal registries
- Additional mortality data from state death certificates and Social Security Administration datasets

Incident comorbidities of interest

Comorbidity	Definition
Chronic liver disease	Inpatient or outpatient diagnosis
Chronic kidney disease	≥ 2 eGFR < 60 mL/min ≥ 90 days apart
Chronic lung disease	Inpatient or outpatient diagnosis
Diabetes mellitus	Diagnoses or prescriptions
Cancer	Cancer registries
Cardiovascular disease	Inpatient or outpatient diagnosis

Statistical analysis

- Abridged life tables to estimate number of **overall** and **comorbidity-free** years of life remaining at age 21
 - Age-specific death or comorbidity rates for 5-year age groups from 21 to 81+
 - Applied to hypothetical cohorts
 - By HIV status
 - By calendar era
 - In 2011-2016, for PWH who initiated ART with CD4 ≥ 500

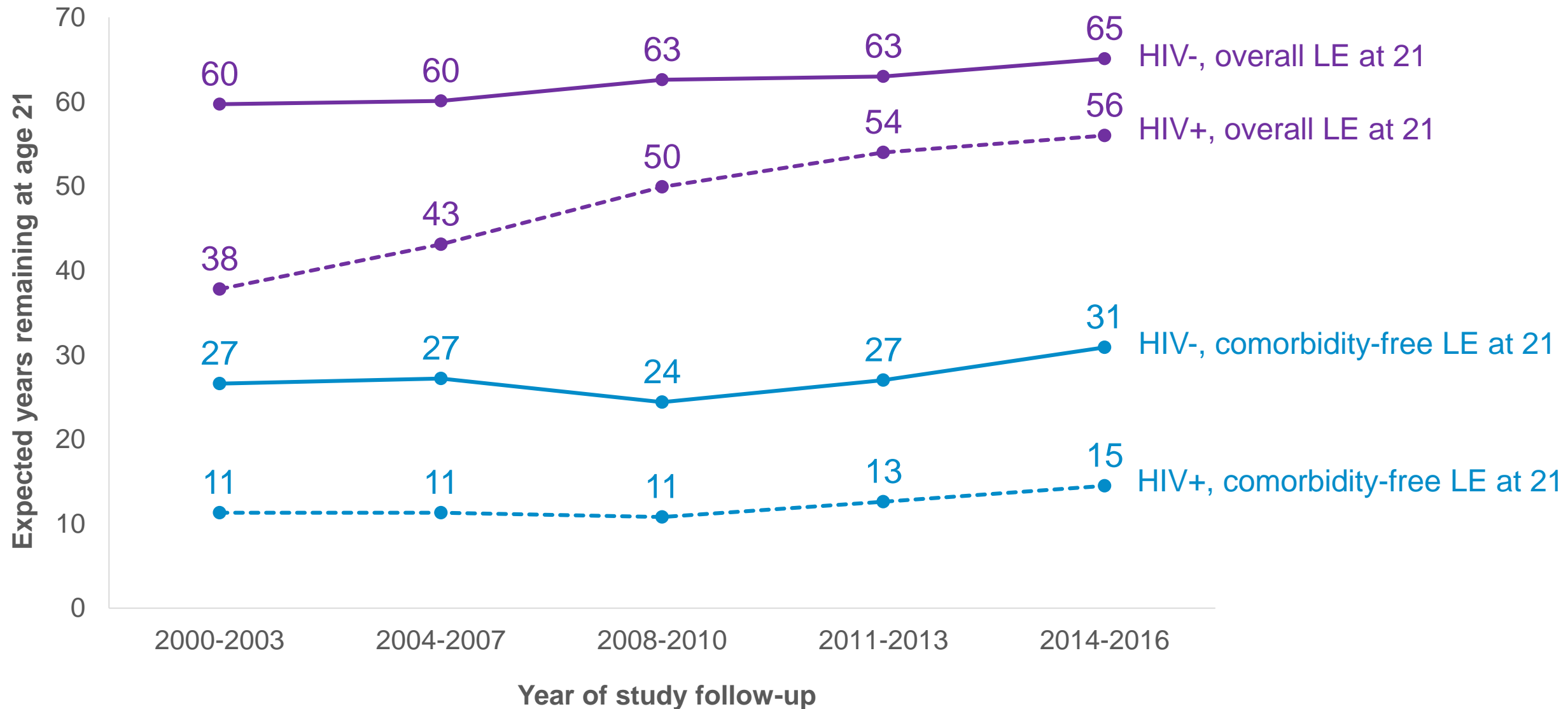
Baseline characteristics

	HIV+	HIV-
N	39,000	387,767
Mean age, years	41	41
Male, %	88	88
Race/ethnicity, % among known		
White	45	45
Black	25	25
Latinx	24	24
Asian	5	5

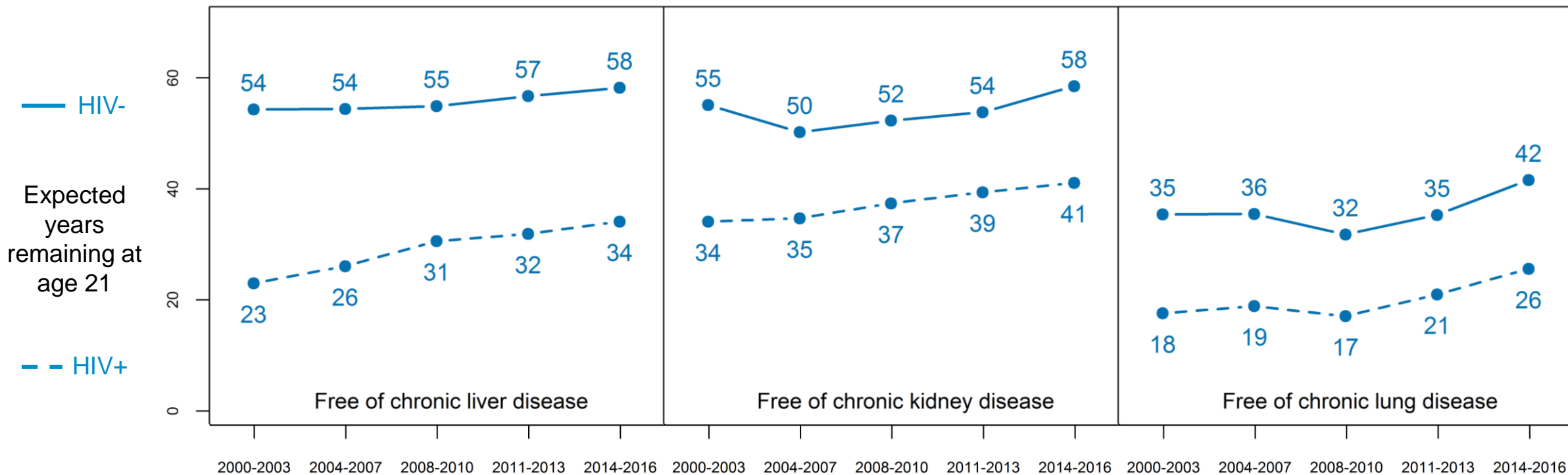
Baseline characteristics, HIV-specific

	HIV+
HIV-transmission risk group, %	
Men who have sex with men	70
Heterosexual sex	20
Injection drug use	8
Other	2
Prior ART use, %	18
Initiated ART during follow-up, %	64
CD4 \geq 500 at ART initiation, %	29

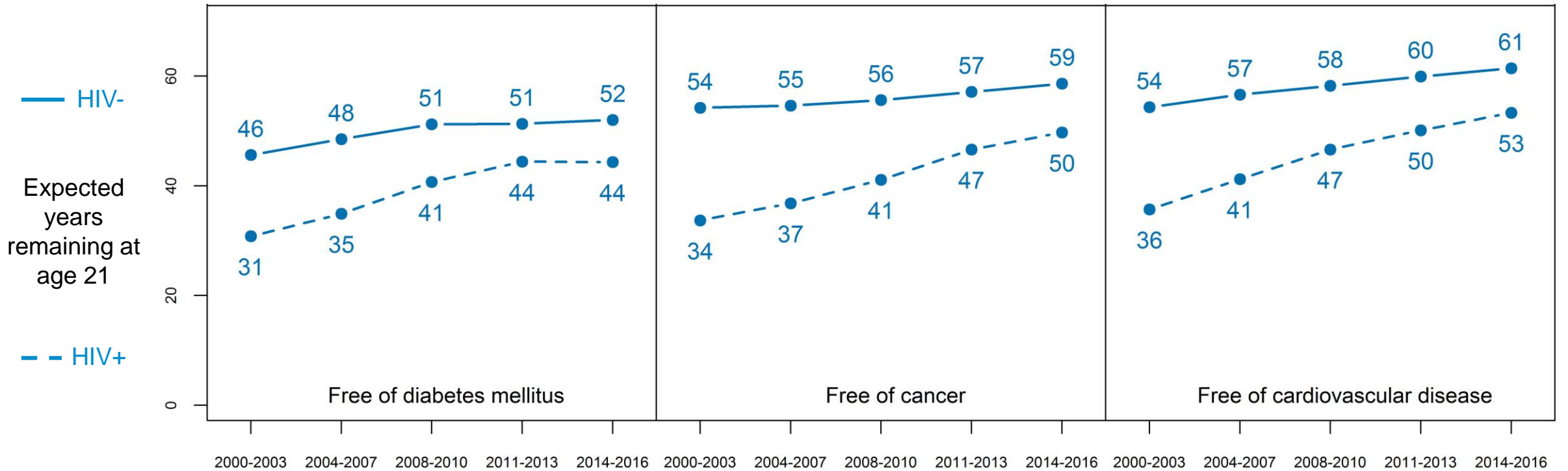
Narrowing gap in overall but not comorbidity-free life expectancy by HIV status



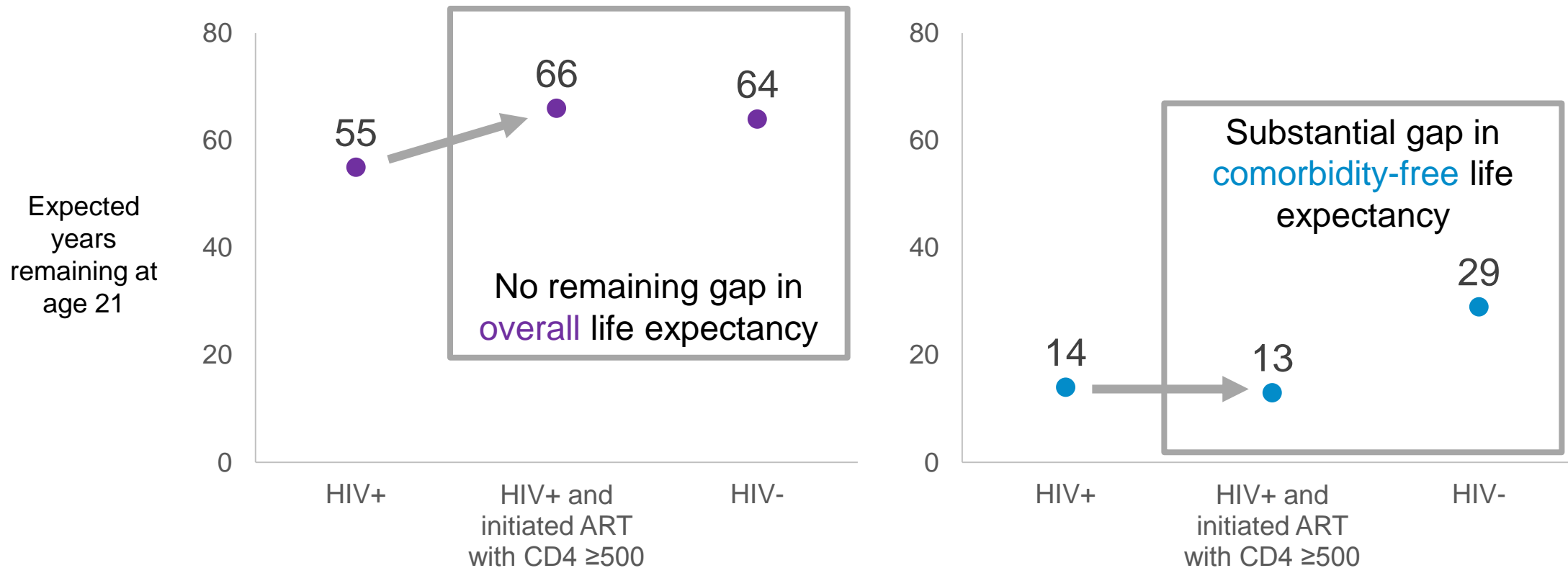
Persistent gap in **comorbidity-free** life expectancy for liver, kidney, and lung disease



Narrowing gap in **comorbidity-free** life expectancy for diabetes, cancer, and CVD



Overall and comorbidity-free life expectancy for PWH who initiated ART with CD4 \geq 500, 2011-2016



For PWH who initiated ART with CD4 \geq 500, improved **comorbidity-free** life expectancy for **cancer** and **cardiovascular disease** but not diabetes or liver, kidney, or lung disease

Summary

- Overall 9-year gap remains in life expectancy by HIV status
- PWH live 16 fewer comorbidity-free years than people without HIV, and this has not improved over time
- PWH who initiated ART with CD4 ≥ 500 have the same life expectancy as people without HIV
- For PWH who initiated ART with CD4 ≥ 500 , the gap in healthy life years is narrower for several but not all comorbidities

Strengths and limitations

Strengths

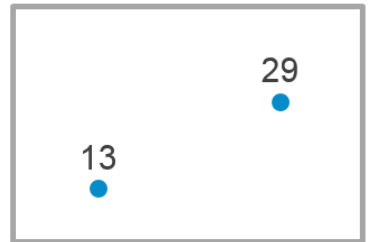
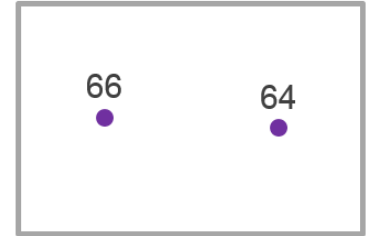
- Large cohort from same healthcare system
- High-quality ascertainment of HIV status using registry data
- Generalizable to broader insured population

Limitations

- Potential for screening to drive differences in comorbidities
- Mostly male study population
- No data available on gender identity

Conclusions

- Life expectancy has increased further for PWH, with **no remaining gap in lifespan** between PWH who initiated ART at high CD4 counts and people without HIV
- PWH live **substantially fewer healthy years** than people without HIV, with no improvement over time or with ART initiation at high CD4 counts
- Greater attention to comorbidity prevention is needed for PWH



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