8-Year Care Trajectories in an Urban Cohort of PWH Receiving Care — Washington, DC

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THE DC COHORT — Advancing HIV Care and Treatment in the District of Columbia

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Background

- The HIV care continuum emphasizes that people with HIV (PWH) should be engaged in lifelong care and treatment to achieve viral suppression and live a long and healthy life.
- PWH may transfer their care, cycle in and out of care, or may be lost to follow–up.
- Regardless of the reason for disruption in care, multiple studies have shown that people who are not optimally engaged in care are at greater risk for virologic failure and death.

Objectives

- To identify and characterize different groups of longitudinal care trajectories among a cohort of PWH who have been linked to HIV care in Washington, DC.

Methods

DC COHORT STUDY

- Multi-site prospective longitudinal observational cohort study of HIV-infected persons in care in Washington, DC at 14 participating clinical sites
- Data abstracted from participants' electronic medical records at enrollment and through electronic exports monthly thereafter
- DC Cohort participants ≥18 year who enrolled from 01/1/2011 to 6/30/2021 were included

ANALYSIS

- Grouped-trajectory modelling was used to identify longitudinal care trajectory groups
- Participants were considered "engaged" if they had at least 1 HIV visit, CD4 or VL during a specified 200-day interval.
- Up to 19 200-day intervals were included per person.
- Time-stable risk factors were added to the group membership probabilities to identify predictors of class membership using multinomial logistic regression.
- Time-varying risk factors of viral suppression [VS (HIV RNA< 200 copies/ml)] and the modified Quan-Charlson comorbidity index (QCCI) were added to the model of the trajectory shapes.
- QCCI is used to predict 10-year survival in persons with specified co-morbidities (Quan et al. *Med Care*, 2005)]. The modified QCCI excludes HIV disease.

Results

Figure 1. Estimated Trajectories with 95%CI for Final Grouped Trajectory Model

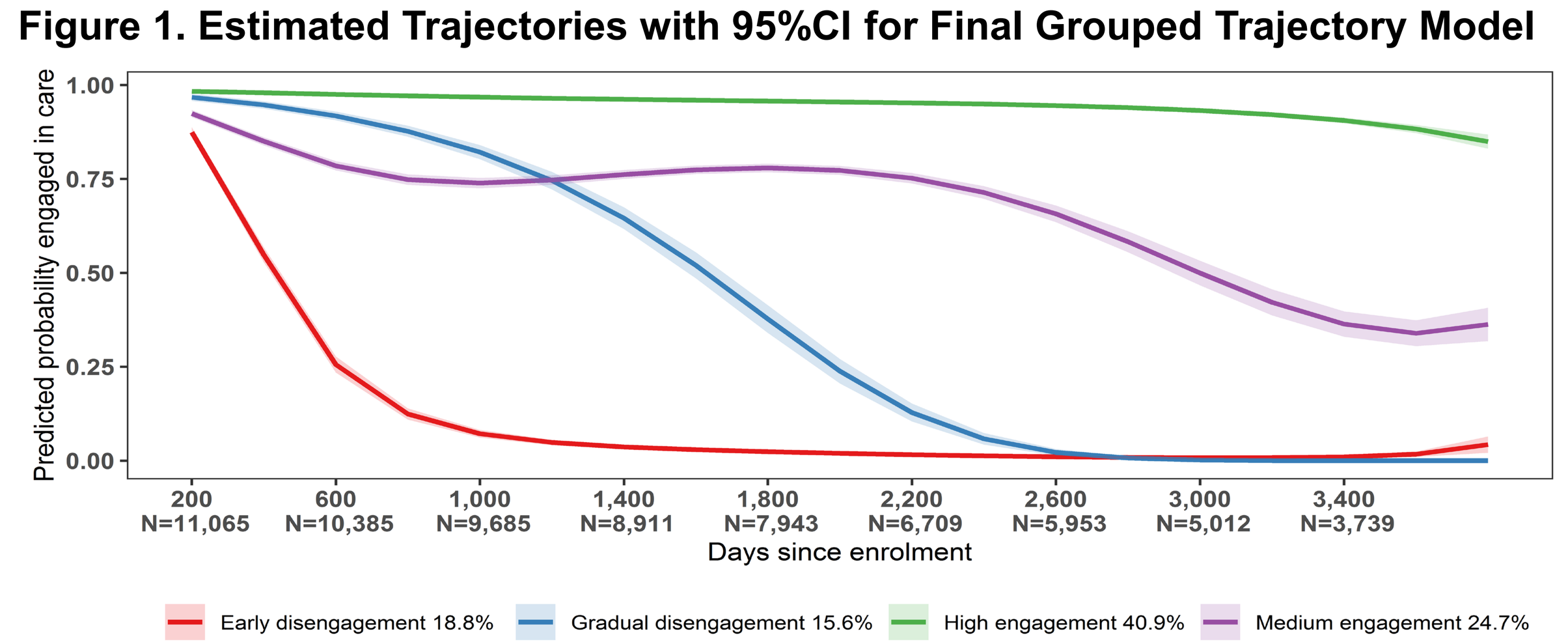
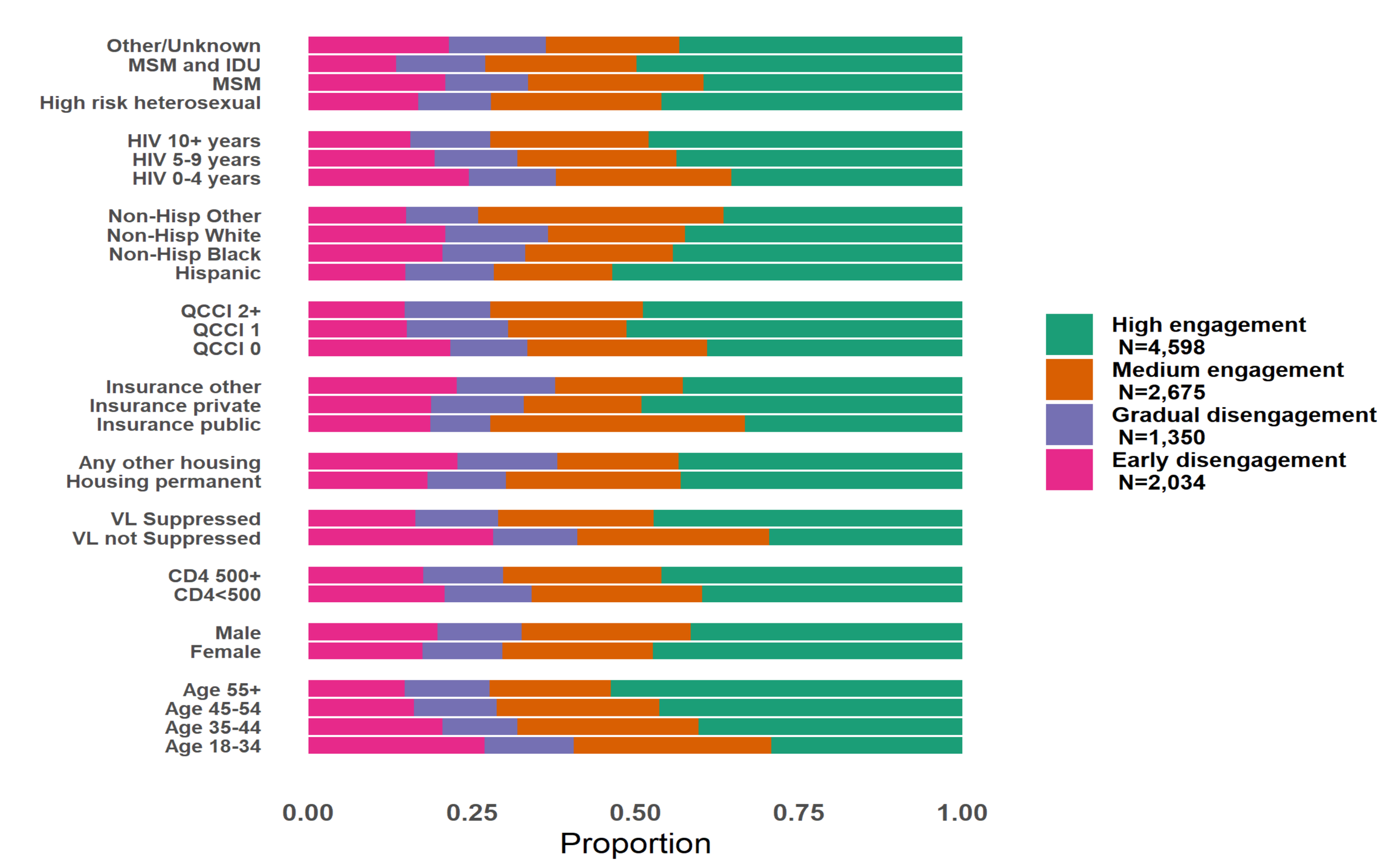


Table 1. Demographic and Clinical Characteristics of DC Cohort Participants (N=11,065)

	Total
Characteristic	N %
Age at enrollment, median (IQR)	47 (36-55)
Gender (male)	7,950 (72%)
Race/ethnicity (NH Black)	7,045 (64%)
Insurance (public)	6,139 (55%)
Housing at enrollment (permanent/stable)	8,853 (80%)
Any substance use (yes)	819 (7%)
Mode of HIV Transmission (MSM)	4,575 (41%)
Duration of HIV diagnosis, (years)[median (IQR)]	9.5 (4-17)
On ART at enrollment (yes)	10,319 (93%)
Viral suppression at enrollment (HIV RNA <200 copies/ml)	8,270 (75%)
CD4 <500 copies/µl at enrollment	5,012 (45%)
Modified Quan-Charlson comorbidity index at enrollment (0)	6,909 (62%)

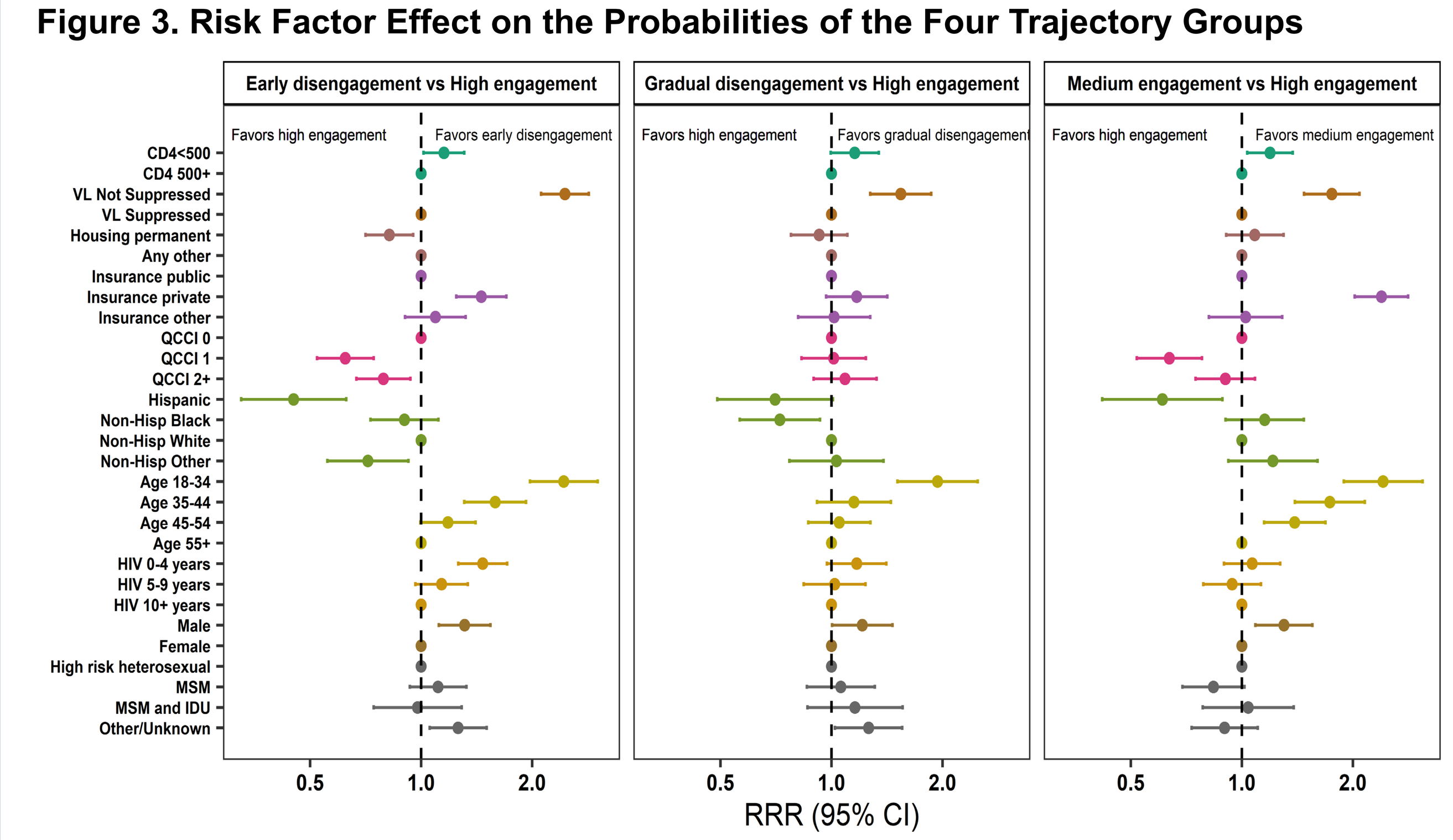
Figure 2. Assigned Group Membership Estimated by Time Stable Factors



When assessing longitudinal care trajectories among a cohort of PWH already linked to care, as many as one in five PWH disengaged in care soon after cohort enrollment with multiple factors influencing long-term care engagement.

Results

Figure 3. Risk Factor Effect on the Probabilities of the Four Trajectory Groups

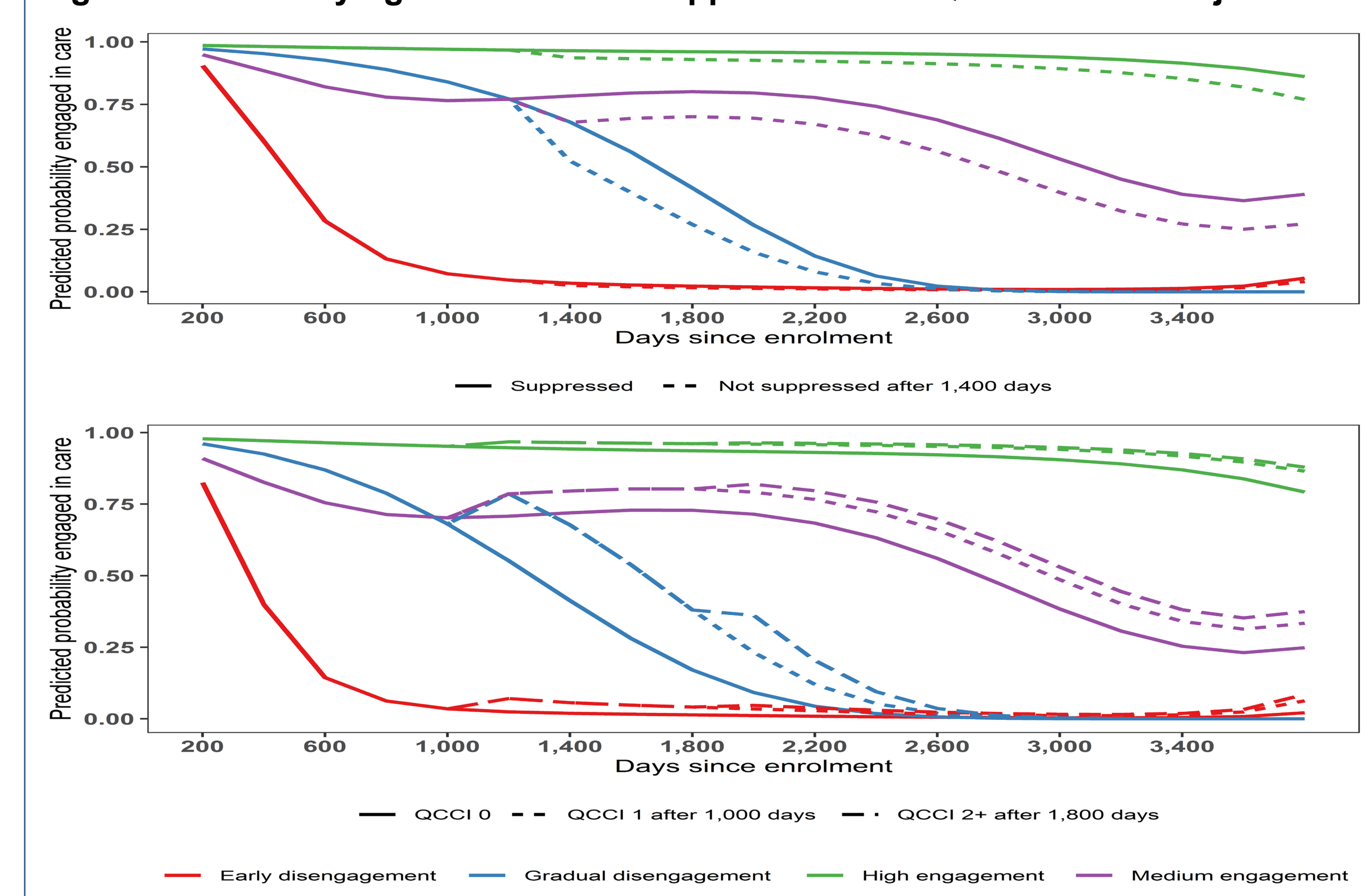


Results

- Four latent trajectory groups were identified: those with high engagement (41%); medium engagement (25%), gradual disengagement (16%), and early disengagement (19%). (Fig. 1)
- Those with ***early disengagement*** (vs. high engagement) were significantly more likely at enrollment to have a CD4<500 cells/µL, not be VS, non-permanent housing, privately insured, younger, diagnosed within 4 years, and male (all p<0.05). (Fig. 2 and Fig. 3)
- Those with ***gradual disengagement*** (vs. high engagement) were significantly more likely to not be VS, younger, male, and diagnosed within 4 years (all p<0.05). (Fig. 2 and Fig. 3)

Results

Figure 4. Time Varying Effect of Viral Suppression and QCCI on Care Trajectories



Results

- Those with ***medium engagement*** (vs. high engagement) were significantly more likely to have CD4<500 cells/µL, not be VS, privately insured, and younger (all p<0.05).(Fig. 2 and 3)
- When including time-varying covariates of VS and co-morbidity, not being VS significantly lowered the probability of engagement whereas the probability of engagement significantly increased with increasing numbers of co-morbidities using the QCCI. (Fig. 4)

Conclusions

- Identifying characteristics of those disengaged in care using longitudinal approaches can help guide intervention development to improve care engagement.
- To further promote optimal long-term care engagement, differentiated care models may be needed at various stages of PWHs' HIV care trajectory.

Additional Information

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