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# *Viral Non-Suppression Among People with HIV Diagnosed at an Older Age: Implications for Primary and Secondary HIV Prevention*

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## BACKGROUND

- HIV prevalence is increasing among older populations, yet few studies examine correlates of primary or secondary HIV prevention among older individuals
- It is unknown whether the common age 50 cut-off for older age is optimal. A data-driven cut-off for older age at HIV diagnosis is needed to inform prevention programs.
- A better understanding of risk factors for non-VS among those diagnosed at an older age is needed for U=U initiatives.

***Objective #1:*** *Determine a data-driven cut-off for older age at HIV diagnosis.*

***Objective #2:*** *Evaluate correlates of non-VS among those diagnosed at an older age, using our data-driven age cut-off.*

VS = Viral Suppression; PWH = People with HIV

## METHODS

Data collected from the **DC Cohort Longitudinal study on People with HIV in Washington DC**.

Evaluated participants enrolled from 2011-2024 who were diagnosed with HIV in the year prior to enrollment.

Logistic Regression used to determine whether a participant's age at HIV diagnosis could "predict" their sex, race/ethnicity, HIV transmission factor, and insurance status.

Age at HIV Diagnosis → Sex, HIV Transmission Factor, Race/Ethnicity, Insurance

ROC curves used to evaluate the accuracy of predictions at different age cut-offs and AUC was used to determine which age cut-off resulted in the best predictions.

Evaluated a subset of participants who were diagnosed with HIV above the chosen age cut-off. GEEs were then used to evaluate correlates of non-VS (> 200 copies/mL) among this subset.

ROC = Receiver Operating Characteristic; AUC = Area Under the Curve; GEE = Generalized Estimating Equation

## RESULTS

**1,240 DC Cohort Participants diagnosed with HIV within the year prior to enrollment.**

- 78% Non-Hispanic Black
- 71% Male
- 37% Heterosexual
- Mean Age: 37 years old

**Most optimal cut-offs were centered around age 40 (Figure 1). Therefore, age 40 or older chosen as the most optimal cut-off for older age at HIV diagnosis.** 39% newly diagnosed participants were diagnosed age 40 or older (N = 487).

Age 40 years or older was determined to be the optimal data-driven cut-off for older age at HIV diagnosis for informing prevention programs. **Among PWH diagnosed at an older age (≥ 40 years old), sex and insurance status were associated with non-VS in the unadjusted analysis.**

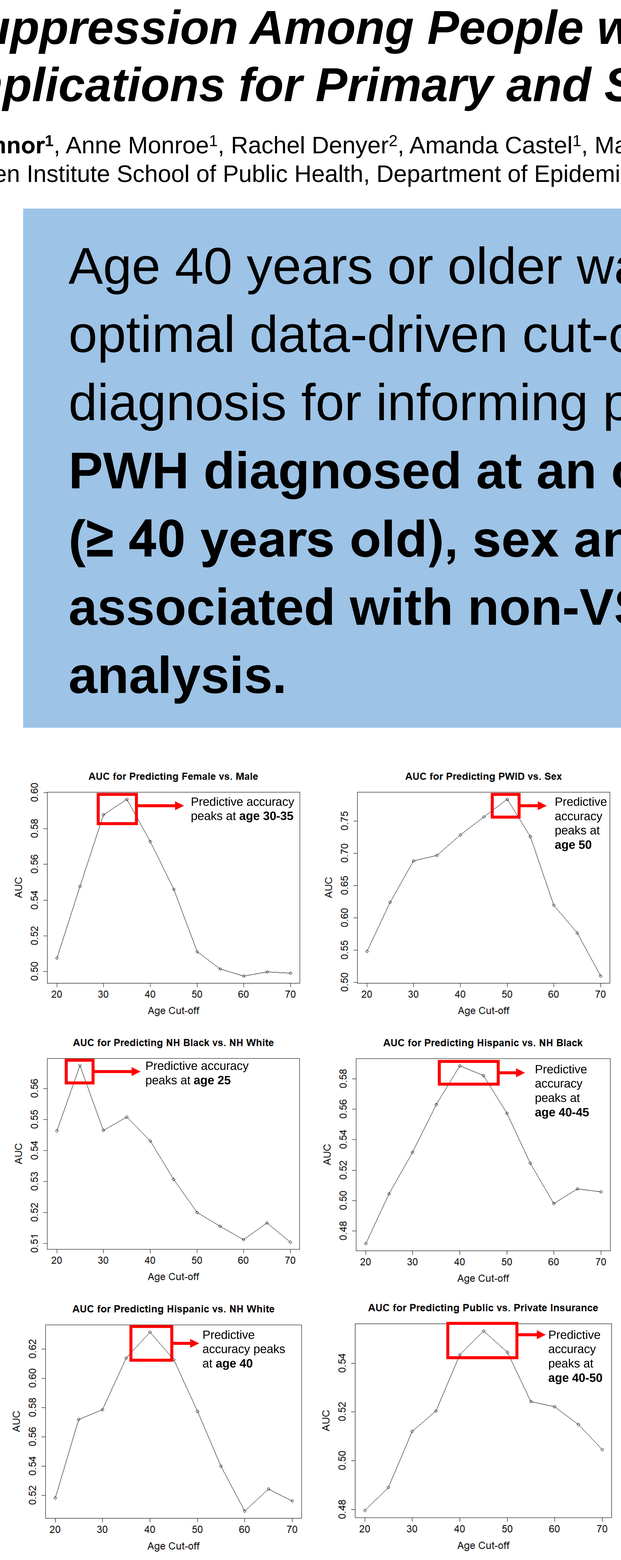



**Figure 1.** AUC for predicting each demographic variable, based on the respective age cut-off.

**Table 1.** Odds Ratios and their 95% CI based on the generalized estimating equation[a] evaluating correlates of non-VS **among those diagnosed with HIV age 40 or older (N = 487).**

| Variable | Unadjusted Odds Ratios (95% CI) | Adjusted Odds Ratios (95% CI)[c] |
|---|---|---|
| **Sex** | | |
| Male | REF | REF |
| Female | 1.71 (1.10, 2.67) | 1.52 (0.98, 2.35) |
| **Race/Ethnicity** | | |
| Non-Hispanic Black | REF | REF |
| Hispanic | 0.50 (0.18, 1.36) | 0.60 (0.23, 1.56) |
| Non-Hispanic White | 0.58 (0.29, 1.13) | 0.73 (0.37, 1.45) |
| Other | 0.69 (0.17, 2.70) | 0.69 (0.16, 2.93) |
| **HIV Transmission Factor[b]** | | |
| Sexual | REF | REF |
| PWID | 0.46 (0.20, 1.05) | 0.40 (0.17, 0.92) |
| Other | 1.35 (0.84, 2.17) | 1.14 (0.72, 1.80) |
| **Insurance** | | |
| Private | REF | REF |
| Public | 1.62(1.07,2.44) | 1.47 (0.99, 2.19) |
| Other | 0.84(0.32,2.17) | 0.95 (0.36, 2.46) |

PWID = People who Inject Drugs; [a]Using an autoregressive correlation matrix; [b]Does not include those with perinatal transmission; [c]Adjusted for sex, race/ethnicity, HIV transmission risk factor, and insurance

## CONCLUSIONS

- The optimal age cut-offs were substantially different across each demographic.
- Despite these differences, an age 40 or older cut-off was optimal for predicting most participant demographics.

**These findings help provide insight into how to define older age, in lieu of the default age 50 or older cut-off and can be used to inform primary prevention by characterizing factors associated with being diagnosed at an older age.**

- Among those diagnosed with HIV age 40 or older, we found that females and those with public insurance were more likely to be non-VS in the unadjusted analysis.

**These results can be used to inform secondary prevention by informing measures tailored towards improving VS among those diagnosed at age ≥ 40.**

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