Background

HIV, Smoking, and Comorbidities
- People with HIV (PWH) have a high prevalence of smoking (40-70%).
- PWH have a high prevalence of comorbidities
  - Comorbidities increase complexity of clinical care
  - Clinician intervention for smoking cessation may be more challenging
- Smoking continues adversely affects disease prognosis of comorbidities
- Cessation strategies need to integrate multi-disease treatment frameworks
- People who smoke who also have comorbidities have a more difficult time quitting
- Higher nicotine dependence, co-occurring mental health challenges, lower self-efficacy, limited treatment availability and diminished response

The DC Cohort
- Cardiovascular, cancer, pulmonary, mental health diagnoses identified and recruited from 15 HIV care centers in the Washington, D.C. metro area
- Prospective longitudinal cohort of PWH in the Washington, D.C. area

The DC Cohort

Methods

The DC Cohort
- Prospective longitudinal cohort of PWH in the Washington, D.C. area
- Participants recruited from 15 HIV care centers in the Washington, D.C. metro area
- Electronic medical record (EMR) data extracted on a monthly basis
- Limited manual data collection at enrollment
- Present analysis includes data from 2011 – 2017
- Smoking status (current, former, never) abstracted from EMR at enrollment

Comorbid Conditions
- Cardiovascular, cancer, pulmonary, mental health diagnoses identified and categorized using ICD-9 and ICD-10 codes
  - Cardiovascular: acute myocardial infarction, unstable angina, angina pectoris (stable angina), peripheral arterial disease, transient ischemic attack, ischemic stroke, and congestive heart failure
  - Cancer: any cancer diagnosis
  - Pulmonary: COPD, asthma
  - Mental Health: any mood disorder, anxiety or stress/trauma-related disorder, psychotic disorder, or severe mental health disorder

Statistical Analysis
- Primary Outcome: prevalence of never, former, and current smoking at baseline and number of comorbidities among adults (≥ 18 years of age)
- Secondary Outcome: estimated risk of a) any comorbidity, b) a mental health comorbidity, and c) a cardiovascular, pulmonary, or cancer comorbidity among PWH who smoke

- Multiple imputation (30 imputations) including comorbidity outcome, sociodemographic, and HIV clinical variables
- Pooled Poisson regression with robust standard error estimates
- Adjusted for age, race/ethnicity, gender, state of residence (vs D.C.), socioeconomic condition, substance use, BMI, years since HIV diagnosis, AIDS diagnosis, CD4+ Nadir, CD4+ at baseline, and viral load at baseline

Results

n = 7,160 of 8,234 participants included
- Exclusions: n = 1,006 with no smoking variable and n = 68 < 18 years of age

Ever Smoking Status
- Never: n = 2,774 (39%)
- Former: n = 1,359 (19%)
- Current: n = 3,072 (42%)

Dichotomous Smoking Status
- Non-smoker: n = 4,133 (58%)
- Current Smoker: n = 3,072 (42%)

n = 1,161 (53%) of current smokers have at least one comorbidity

Conclusions

- PWH with a concurrent comorbidity have a higher prevalence of smoking than those without; nearly half of all PWH who smoked had a comorbidity
- As the number of comorbidities increased, so did the prevalence of smoking
- Risk of comorbidity varied by gender, race, socioeconomic status, substance use, and HIV clinical characteristics; these also differed by mental health or cardiovascular/pulmonary/comorbidity
- Consideration of sociodemographic, alcohol use, and clinical factors, and how they are integrated within multi-disease treatment strategies, is likely important when developing smoking cessation interventions for PWH with concurrent comorbidities who smoke