Racial Disparities in HIV Care Extend to Common Comorbidities: Implications for Implementation of Interventions to Reduce Disparities in HIV Care

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Abstract: Background: Prior studies have described racial disparities in the quality of care for persons with HIV infection, but it is unknown if these disparities extend to common comorbid conditions. To inform implementation of interventions to reduce disparities in HIV care, we examined racial variation in a set of quality measures for common comorbid conditions among Veterans in care for HIV in the United States.

Method: The cohort included 23,974 Veterans in care for HIV in 2013 (53.4% black; 46.6% white). Measures extracted from electronic health record and administrative data were receipt of combination antiretroviral therapy (cART), HIV viral control (serum RNA < 200 copies/ml among those on cART), hypertension control (blood pressure < 140/90 mm Hg among those with hypertension), diabetes control (hemoglobin A1C < 9% among those with diabetes), lipid monitoring, guideline-concordant antidepressant prescribing, and initiation and engagement in substance use disorder (SUD) treatment. Black persons were less likely than their white counterparts to receive cART (90.2% vs. 93.2%, p<.001), and experience viral control (84.6% vs. 91.3%, p<.001), hypertension control (61.9% vs. 68.3%, p<.001), diabetes control (85.5% vs. 89.5%, p<.001), and lipid monitoring (81.5% vs. 85.2%, p<.001). Initiation and engagement in SUD treatment were similar among blacks and whites. Differences remained after adjusting for age, comorbidity, retention in HIV care, and a measure of neighborhood social disadvantage created from census data.

Significance: Implementation of interventions to reduce racial disparities in HIV care should comprehensively address and monitor processes and outcomes of care for key comorbidities.

Keywords: HIV■Racial disparities■Comorbidity■Vet

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INTRODUCTION

Prior studies have described racial disparities in the quality of healthcare for persons with HIV infection.[1–3] Black persons with HIV are less likely than their white counterparts to receive combination antiretroviral therapy (cART), or experience suppression of HIV viremia (i.e. "viral control") while on therapy.[4–11] Viral control is an intermediate outcome of therapy that is tightly linked to long-term outcomes, including survival.[12,13] Early studies of HIV medicine in the United States found that black persons in care for HIV had higher all-cause mortality than their white counterparts.[14,15]

Historically, interventions have focused on reducing disparities in antiretroviral use and viral control.[12,16] However, in the modern era of HIV medicine, interventions to reduce racial disparities should account for the fact that HIV infection has become a complex, chronic illness in an aging population. Persons with HIV, with access to care and reliably take cART, have an essentially normal life expectancy. They accumulate multiple comorbidities that determine their care needs and outcomes.[13,17] Cardiovascular events influence morbidity and mortality among persons with HIV,[18,19] and this necessitates close attention to control of common cardiovascular risk factors, such as hypertension, diabetes, hyperlipidemia, and smoking. Depression and substance use disorders (SUD) remain common and influence health outcomes directly, and through negative impacts on

adherence to antiretroviral therapy.[20] Interventions to reduce disparities in the quality of HIV care must comprehensively address and monitor all aspects of care where meaningful racial differences exist. Currently little is known about the patterns and magnitudes of racial differences in the quality of care for comorbid conditions.

Veterans Health Administration (VHA) provides an ideal setting to examine racial disparities in comprehensive measures of care for persons with HIV.[3] It is the largest provider of HIV care in the United States, with approximately 25,000 Veterans in care.[21] VHA is an equal access healthcare system; enrollees have access to medical, mental health, and SUD treatment services with minimal barriers to care in the form of copays. VHA's integrated electronic health record and national data warehouses allow tracking of quality measures related to multiple comorbidities among Veterans with HIV.

Geocoding of VHA data makes it possible to link clinical data for Veterans in care for HIV to census data for the areas where Veterans reside. This permits incorporation of detailed measures of neighborhood social disadvantage in studies of racial disparities in HIV care. Available evidence indicates that racial disparities in healthcare may be influenced by social disadvantage in the areas where patients live.[22–25] Prior studies have found links between living in disadvantaged neighborhoods and smoking,[26] high blood pressure, and cholesterol levels,[27] which are not explained by differences in individual-level socioeconomic status. However, the prior literature on racial disparities in HIV care has not considered these potentially important effects.

To more fully understand patterns of racial disparities in the quality of care for persons with HIV infection, we examined a national cohort of Veterans in care for HIV in VHA in 2013, and quantified racial variation in a set of widely-used quality measures related to antiretroviral therapy, common medical comorbidities, depression, and SUD treatment. We also examined how neighborhood social disadvantage influenced racial disparities in HIV care, using a measure based on census data.

MATERIALS AND METHODS

Data sources and variables

We used national data extracted from VHA's Corporate Data Warehouse (CDW) to complete a retrospective study of Veterans in care for HIV infection in VHA between January 1, 2013 and December 31, 2013. CDW compiled data elements extracted from VHA's integrated electronic health record and administrative files, including patient demographics and residential ZIP codes, inpatient and outpatient visits, laboratory results, pharmacy records, and vital signs.

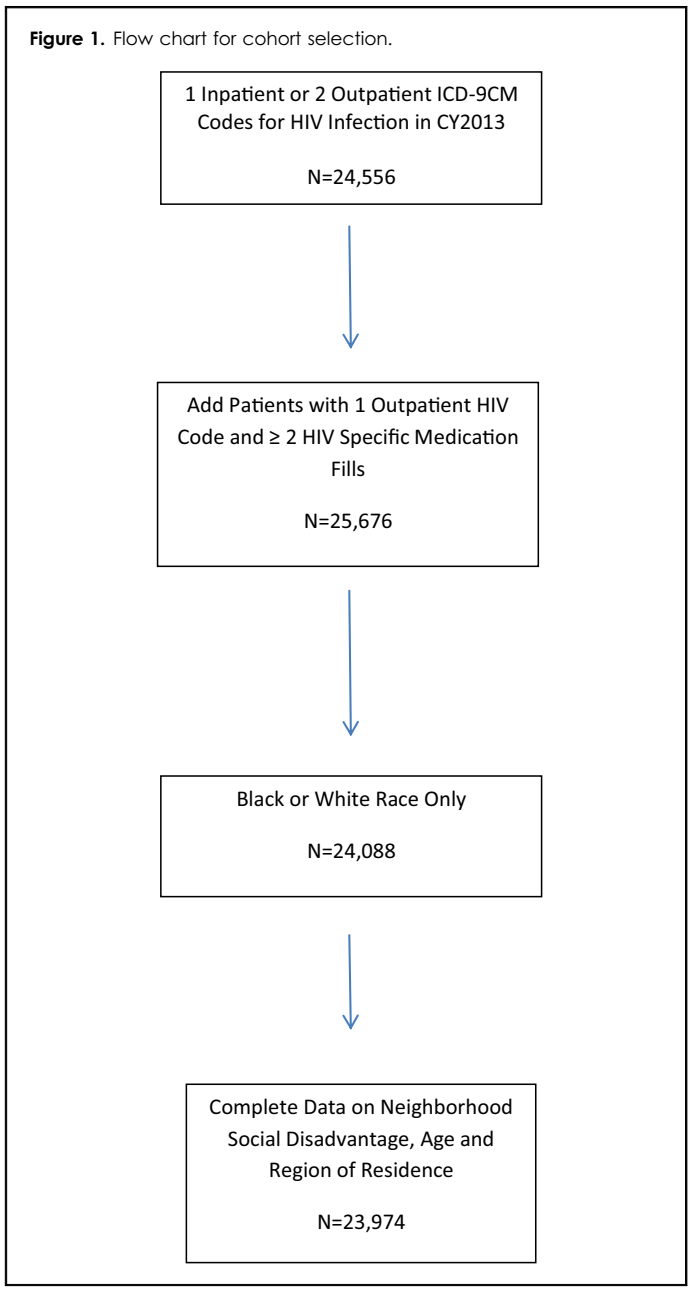

Figure 1. Flow chart for cohort selection.

We created a cohort of Veterans in care for HIV infection using a previously-validated case finding algorithm, which required 1 inpatient or 2 outpatient International Classification of Diseases – Ninth Revision – Clinical Modification (ICD-9CM) codes for HIV infection (i.e. V08 or 042) during 2013.[14] This method has sensitivity of 90% and specificity of 99% for identifying Veterans in care for HIV infection, compared to a method that includes manual chart review.[14] This identified 24,556 Veterans. To this cohort we added 1120 Veterans with a single outpatient code for HIV infection and at least 2 fills