

Late Diagnosis of HIV in South Carolina: Prevalence, Causes, and Consequences

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BACKGROUND

Late diagnosis of Human Immunodeficiency Virus (HIV) increases the risk of new transmission, Acquired Immune Deficiency Syndrome (AIDS), and AIDS-related deaths. Late HIV diagnosis is also thought as a major impediment for the success of Antiretroviral Therapy (ART) outcomes. In the United States in 2014, about one-quarter of HIV infections were diagnosed late and simultaneously with AIDS. South Carolina (SC), a rural southern state, is among the nation's top in HIV incidence and also exhibits a very high rate of late HIV diagnosis. This study investigates prevalence, causes, and consequences of late HIV diagnosis in SC.

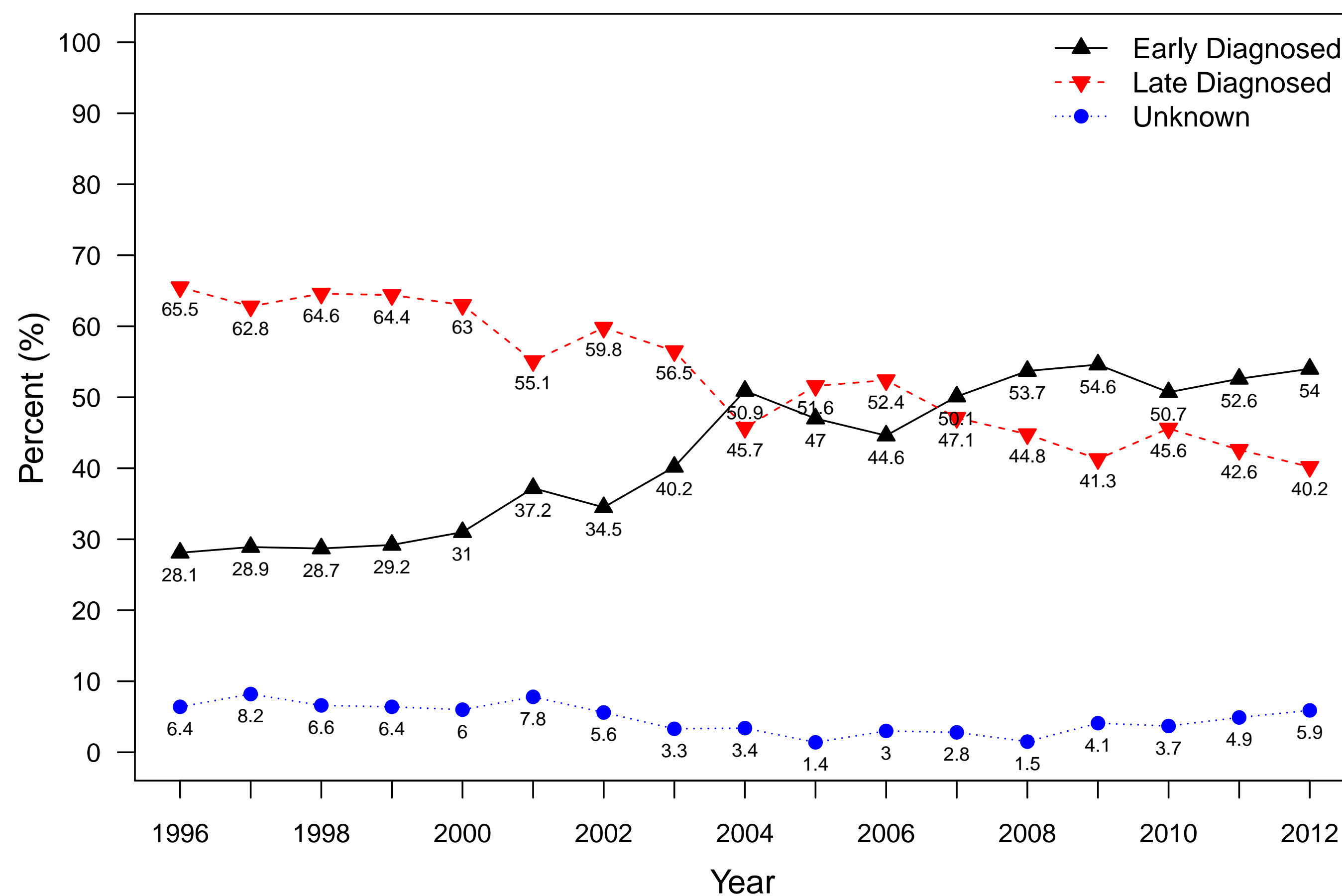
OBJECTIVES

Using statewide surveillance data from patients diagnosed with HIV in the period 1996-2012, this study -

- Examines the trend in prevalence of late HIV diagnosis over time.
- Studies the causes of late HIV diagnosis.
- Investigates effects of HIV late diagnosis on viral load (VL), CD4⁺ T cell count, and death.

RESULTS: PREVALENCE

HIV Diagnosis Trend in SC, 1996-2012



AUTHORS' INFORMATION

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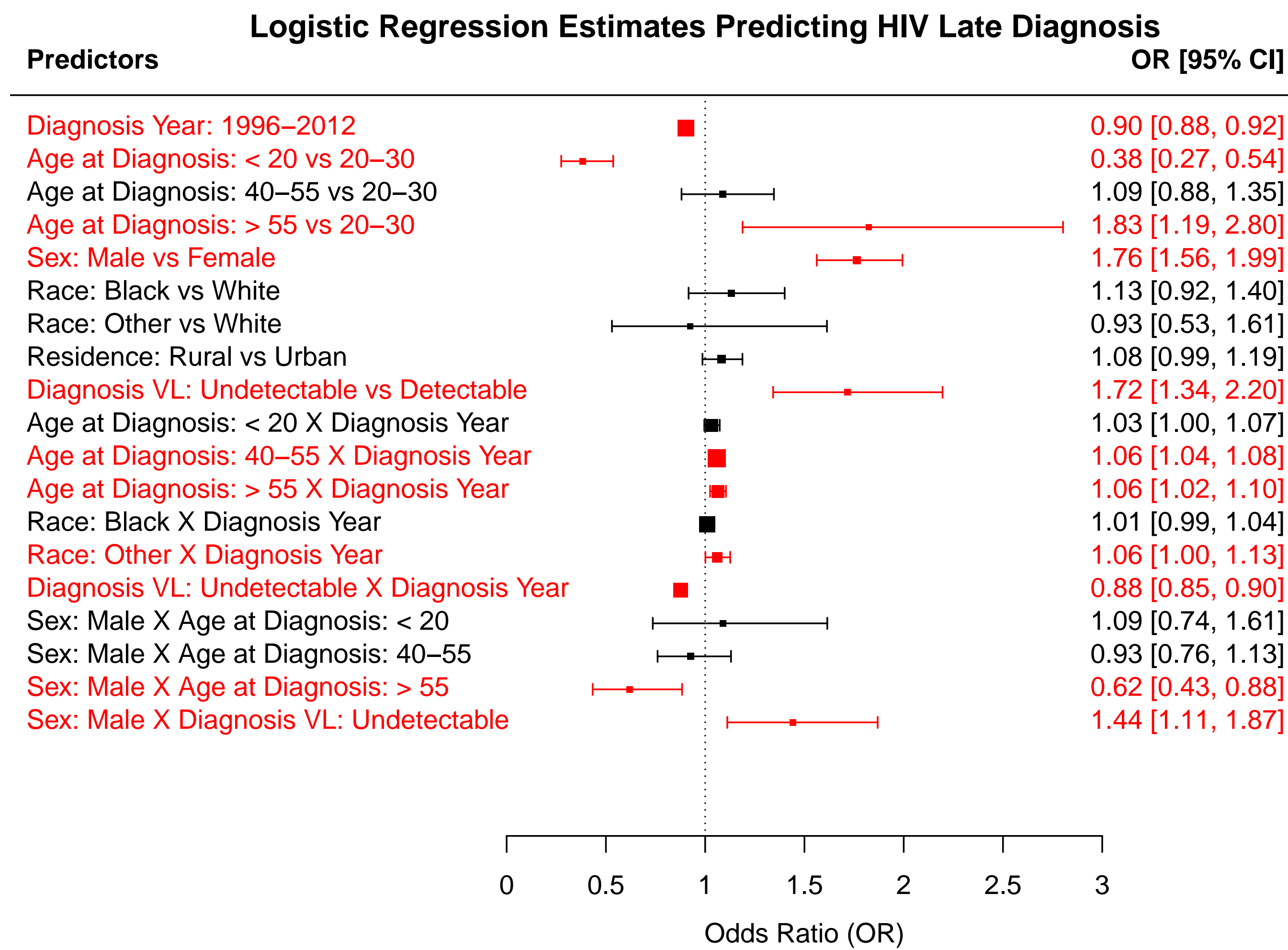
METHODS

Data from 9,477 HIV diagnosed patients in SC in the period 1996-2012 have been analyzed.

Late diagnosis of HIV infection was defined as stage 3 infection (CD4⁺ T cell count < 200 cells/mL) and/or AIDS defining opportunistic illness within 12 months of HIV diagnosis [1].

- Logistic regression model is used to identify the patient groups susceptible to late HIV diagnosis.
- Bayesian joint model is used to examine the differentials in patient viral load, CD4⁺ T cell count, and death risk as consequences of late HIV diagnosis.

RESULTS: CAUSES



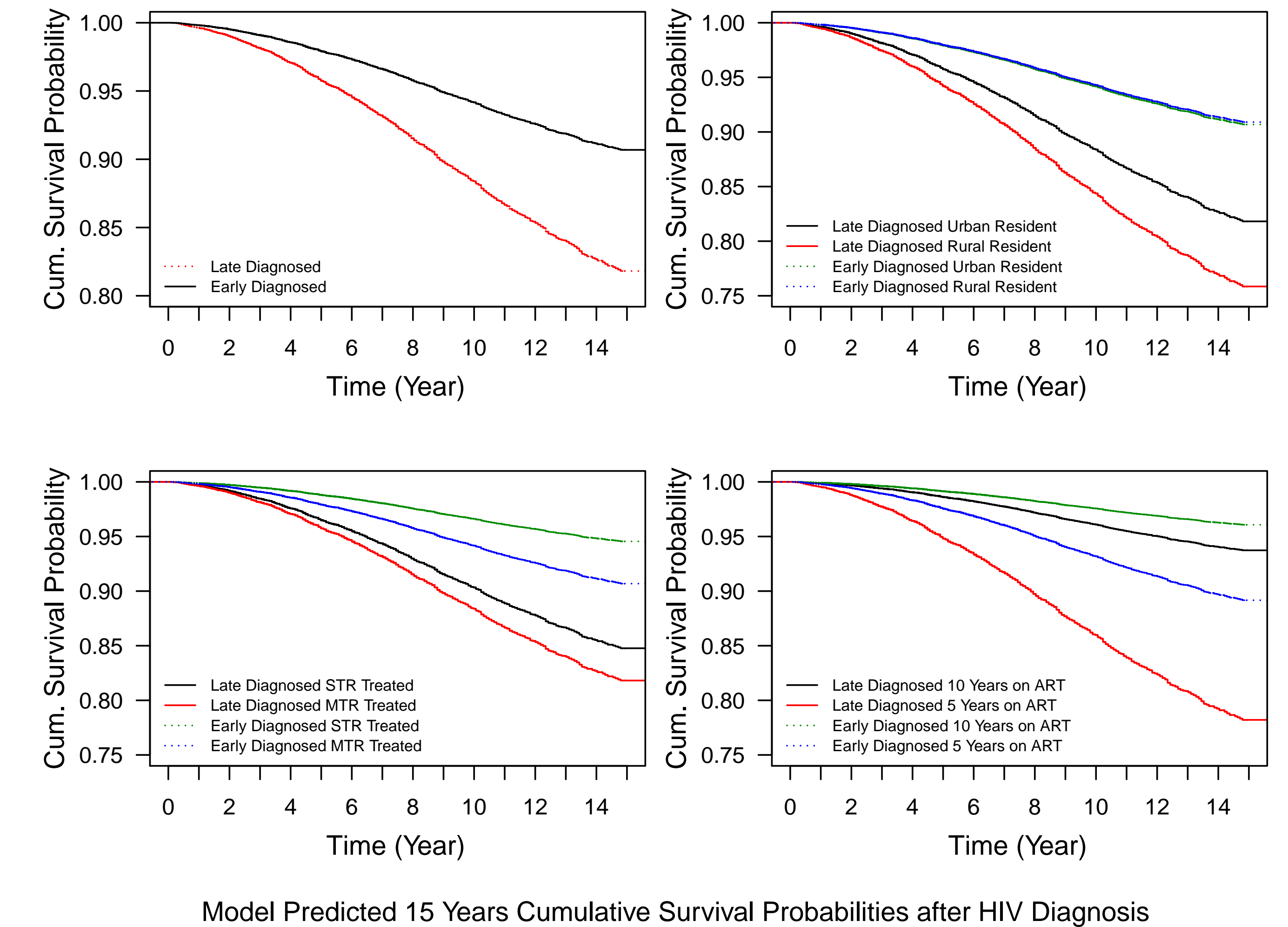
SUMMARY

Among 9,477 patients in sample, 5,463 (57.6%) were diagnosed late. The proportion declined from 65.5% in 1996 to 40.2% in 2012, however, remained significantly higher than the national estimate. Adult and older (≥ 20 years), male, and patients with undetectable VL exhibited significantly higher odds of being late diagnosed.

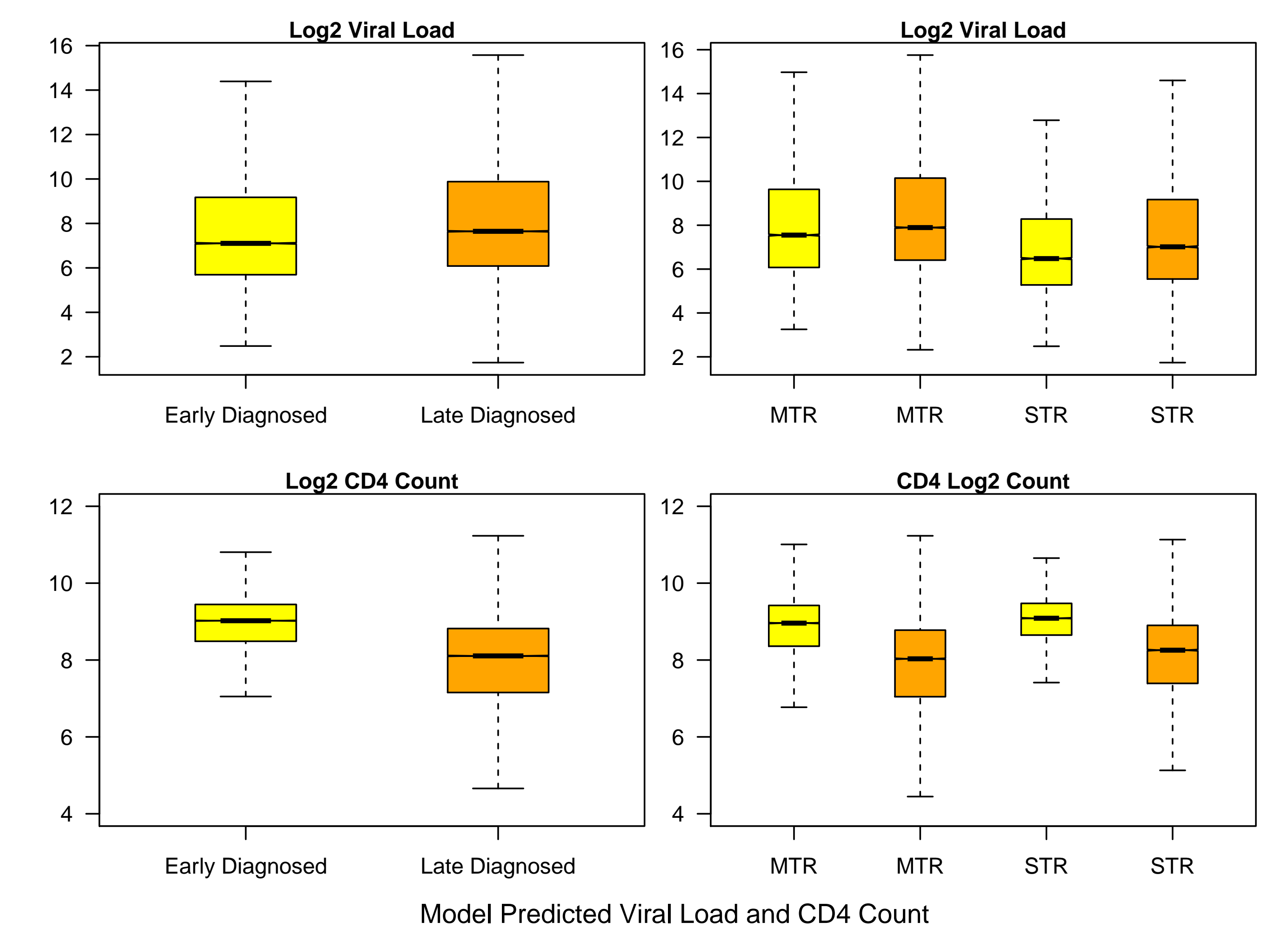
Late diagnosis increased the death risk by about three-fold. Late diagnosed patients in rural areas experienced elevated risk of death. Late diagnosed patients observed significantly lower survival rates irrespective of treatment given: Single Tablet Regimen (STR)/Multiple Tablet Regimen (MTR). Being on ART for long time did not make equal improvement among late diagnosed patients as it did for early diagnosed patients.

Though late diagnosed patients on ART were able to lower the VL on average closed to that of early diagnosed patients, it was not the case for CD4⁺ T cell count.

RESULTS: CONSEQUENCES ON DEATH



RESULTS: CONSEQUENCES ON VL AND CD4⁺



REFERENCES

[1] Richard M Selik and et al. Revised surveillance case definition for hiv infection—United States, 2014. *Morbidity and Mortality Weekly Report: Recommendations and Reports*, 63(3):1-10, 2014.