

Background

- Low-income New York City (NYC) residents with HIV are eligible for subsidized housing through federally funded Housing Opportunities for Persons with AIDS (HOPWA).
- Stable housing supports continuous care and antiretroviral therapy (ART) adherence, which promotes viral suppression; suppression improves individual health and prevents HIV transmission.
- Beginning in 2010, NYC HOPWA programs prioritized viral suppression as a goal for clients.
- In 2012, US guidelines recommended ART be considered in all HIV-infected persons, regardless of disease severity.

Aims, Population, Outcome & Exposures

- **Aims:** Measure trends in viral suppression among NYC HOPWA clients during 2009-2014 and assess whether factors associated with suppression in 2014 differed from those in 2009, to better understand the impact of changing HOPWA priorities and treatment guidelines
- **Population:** Persons enrolled in HOPWA contracts at any time during 2009-2014 (N = 1,960-2,607 annually)
- **Outcome:** Viral suppression, defined as last viral load in the year being ≤ 400 copies/mL
- **Exposures:** Clinical, demographic, and housing characteristics

Data Sources & Statistical Methods

- **Sources:** eCOMPAS data system with HOPWA client data was matched to NYC HIV surveillance registry with all viral load test results for HIV-positive New Yorkers
- **Test for trends in percent suppressed:** Cochran-Armitage
- **Identification of correlates of viral suppression:** Multivariable logistic regression models for 2009 and 2014

Results

Viral suppression among NYC HIV-infected housing clients increased overall from 61% in 2009 to 81% in 2014 ($p < 0.0001$). Suppression also increased in all clinical, demographic, and housing subgroups ($p < 0.05$).

Figures. Viral suppression trends, 2009-2014

Figure 1a. By lowest CD4 count in prior year

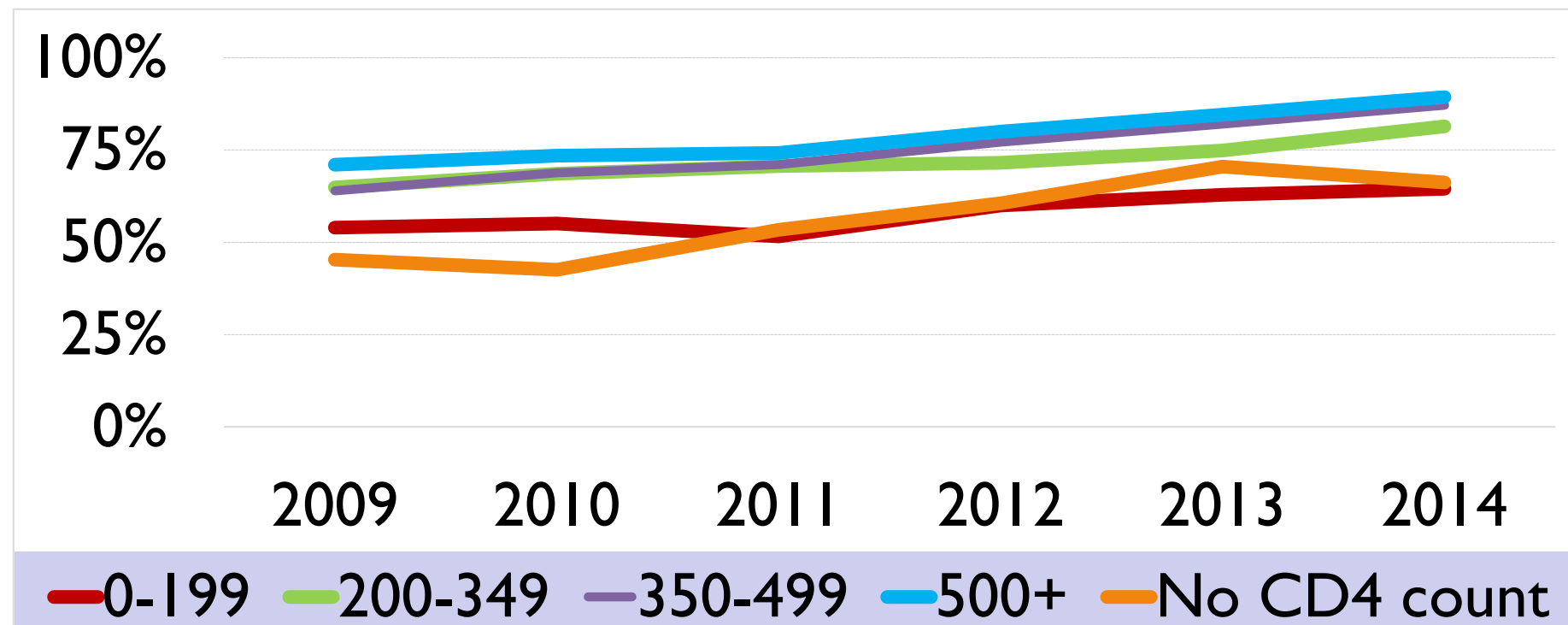


Figure 1b. By age group

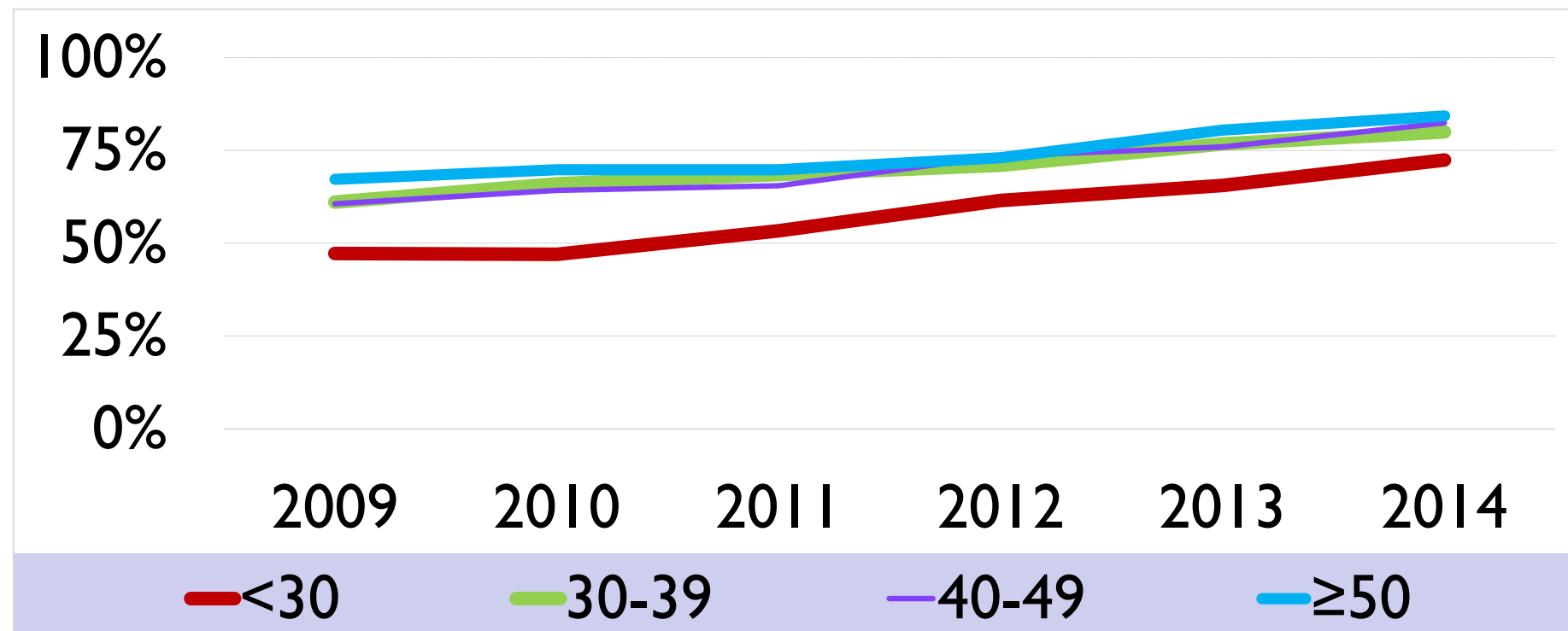


Figure 1c. By type of housing assistance

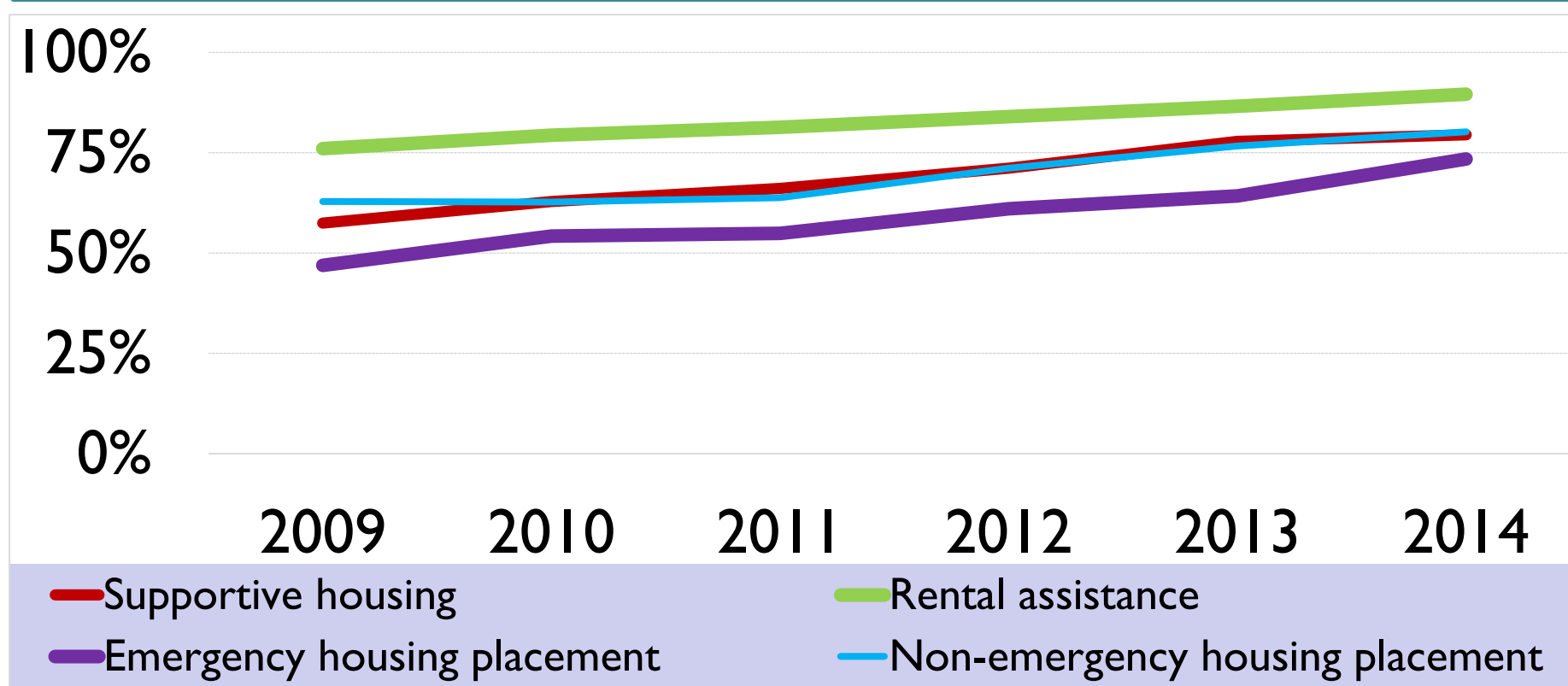


Table I. Selected clinical, demographic, and housing characteristics, and association with viral suppression in 2009 and 2014, among New York City HIV-infected housing clients

Characteristics	2009			2014		
	N	% suppressed	Adjusted OR (95% CI)*	N	% suppressed	Adjusted OR (95% CI)*
Lowest CD4 count in prior year (cells/μL)						
500+ (Ref)	573	71%	-	710	89%	-
350-499	491	64%	0.68 (0.52, 0.89)	397	87%	0.72 (0.49, 1.07)
200-349	591	65%	0.73 (0.57, 0.95)	381	81%	0.50 (0.35, 0.72)
0-199	676	54%	0.49 (0.38, 0.62)	318	64%	0.21 (0.15, 0.30)
Unknown	276	45%	0.36 (0.26, 0.49)	154	66%	0.25 (0.17, 0.39)
Age group (years)						
50+ (Ref)	757	67%	-	725	84%	-
40-49	1,013	61%	0.71 (0.57, 0.87)	614	82%	0.78 (0.57, 1.06)
30-39	545	61%	0.59 (0.46, 0.75)	400	80%	0.57 (0.41, 0.81)
<30	292	47%	0.43 (0.32, 0.57)	221	72%	0.51 (0.35, 0.75)
Gender						
Male (Ref)	1,661	62%	-	1,219	82%	-
Female	946	61%	0.90 (0.76, 1.08)	741	81%	0.88 (0.68, 1.14)
Race/ethnicity						
White (Ref)	136	60%	-	87	87%	-
Black	1,501	59%	0.89 (0.60, 1.28)	1,064	79%	0.52 (0.27, 1.03)
Hispanic	928	65%	1.04 (0.71, 1.54)	788	85%	0.62 (0.31, 1.23)
Other/unknown	42	62%	0.69 (0.33, 1.47)	21	76%	0.31 (0.09, 1.10)
Area of birth						
Outside of US (Ref)	775	74%	-	818	88%	-
US	1,584	54%	0.48 (0.39, 0.59)	948	76%	0.44 (0.32, 0.60)
Unknown	248	67%	0.73 (0.53, 1.01)	194	83%	0.71 (0.45, 1.13)
Type of housing assistance						
Rental assistance for independent living (Ref)	392	76%	-	471	90%	-
Housing placement assistance, emergency	249	47%	0.51 (0.35, 0.74)	211	73%	0.78 (0.47, 1.28)
Housing placement assistance, non-emergency	915	63%	0.82 (0.62, 1.1)	561	80%	0.91 (0.60, 1.38)
Supportive housing	1,051	57%	0.63 (0.47, 0.84)	717	79%	0.78 (0.52, 1.17)
Residential move						
Did not change neighborhoods during the year (Ref)	1,658	66%	-	673	78%	-
Changed neighborhoods during the year	949	53%	0.73 (0.61, 0.87)	1,287	84%	0.94 (0.72, 1.22)

*OR = odds ratio. CI = confidence interval. Adjusted ORs are bolded when they are statistically significantly different from 1.0 at $p < 0.05$ significance level.

Conclusions

- Viral suppression increased among NYC HIV-infected housing clients during 2009-2014, overall and in all subgroups, potentially resulting from changes in treatment guidelines and an emphasis within the housing program on viral suppression.
- More HIV-infected housing clients, especially relatively healthy, young, or residentially unstable, are successfully taking antiretroviral therapy.
- More work is needed to increase suppression among clients with lowest CD4 counts and youngest ages and who were US-born. The NYC health department is launching a year-long initiative with HOPWA housing providers to achieve this.

- Approximately 2,000 persons received housing assistance in the program each year (not shown).
- During 2009 and 2014, lower odds of suppression were seen in clients with lower CD4 counts and younger ages and who were US-born.
- In 2014 only, the odds of suppression among the second-highest CD4 group (350-499 cells/ μ L) and second-oldest age group (40-49 years) did not differ from those among the highest-CD4 group and oldest age group, and there were no differences in odds of suppression by housing characteristics.