Disparities in Viral Suppression among a Large Cohort of HIV-Infected Persons in Washington, DC <u>Castel AD</u>, Greenberg AE, Young H, Kalmin MM, on Behalf of the DC Cohort Executive Committee

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BACKGROUND

- Achieving viral suppression (VS) is the ultimate goal of the HIV care continuum.
- Persons not suppressed have poor clinical outcomes and the potential to transmit virus.
- Disparities exist among particular subpopulations with regard to treatment access.
- Accordingly, one of the goals of the National HIV AIDS Strategy is to reduce HIV-related health disparities.

OBJECTIVES

• To identify potential disparities in VS among an urban cohort of HIV-infected persons in care

METHODS

DC COHORT

- A longitudinal observational cohort study of HIVinfected persons in care in Washington, DC at 13 participating clinical sites
- Data abstracted from participants' electronic medical records manually and through electronic exports
- Included participants enrolled 1/2011 9/2013 with ≥ 2 viral loads reported through 12/2013 and a history of receiving ARV treatment

ANALYSIS

- <u>Viral suppression (VS):</u> A viral load (VL) <200 copies/ml at the time of enrollment or at the most recent VL measurement
- Sustained VS: All VL results <200 copies/ml during a specified time period
- Calculated bi- and multivariate logistic regression to identify factors associated with achieving VS
- Kaplan Meier curves created to assess sustained VS

Table 1. Characteristics of DC Cohort Participants by Viral Suppression (N=2,644)

Characteristics		Participants Ever	Particpants Not	
		Achieving VS	Achieving VS	P-value*
		<u>N (%)</u>	N (%)	
Age (yrs) (median, l	IQR)	47.1 (37.6-54.1)	41.1 (22.5-49.1)	<0.001
Sex at birth				0.01
	Male	1,867 (76.2)	133 (68.2)	
Race/Ethnicity				<0.0001
	Non-Hispanic black	1,805 (73.7)	177 (90.8)	
	Non-Hispanic white	414 (16.9)	9 (4.6)	
	Hispanic	135 (5.5)	5 (2.6)	
	Other**	36 (1.5)	4 (2.1)	
	Unknown	59 (2.4)	0 (0.0)	
Housing status				0.85
-	Permanent/stable	1,965 (80.2)	153 (78.5)	
	Temporary/unstable	264 (10.8)	25 (12.8)	
	Homeless	48 (2.0)	4 (2.1)	
	Other/Unknown	172 (7.0)	13 (6.7)	
Insurance status		112 (1.0)		<0.0001
nisulance status	Public	1 660 (60 4)	162 (02 6)	\U.UU I
		1,668 (68.1)	163 (83.6)	
	Private	623 (25.4)	22 (11.3)	
	Other	43 (1.8)	3 (1.5)	
	Unknown	115 (4.7)	7 (3.6)	
Mode of transmiss	ion			<0.0001
	MSM	1,063 (43.4)	57 (29.2)	
	High risk heterosexual	605 (24.7)	53 (27.2)	
	IDU	163 (6.7)	10 (5.1)	
	Perinatal	110 (4.5)	43 (22.1)	
	MSM/IDU	44 (1.8)	1 (0.5)	
	Transfusion/			
	coagulation disorder	13 (0.5)	1 (0.5)	
	Other	17 (0.7)	1 (0.5)	
	Unknown	433 (17.7)	28 (14.4)	
	Missing	1 (0.0)	1 (0.5)	
Voore HIV nasitive	0		· · ·	-0 004
Years HIV positive		10.7 (5.1-17.3)	11.3 (6.2-17.1)	<0.001
Duration on ARVs (3.7 (1.8-10.6)	5.7 (2.4-12.6)	0.03
	(cells/μl) (median, IQR)	255 (103-400)	111 (10-326)	0.48
Alcohol abuse				0.06
	Yes	339 (13.8)	24 (12.3)	
Substance abuse				0.03
	Yes	464 (19.0)	39 (20.0)	
Hepatitis C status			. ,	0.58
•	Positive	323 (13.2)	23 (11.8)	
Hepatitis B status			(0.68
	Positive	52 (2.1)	5 (2.6)	0.00
Mental health/Dep		02 (2.1)	0 (2.0)	0.53
		025 (20 0)	70 (25 0)	0.00
	Yes	<u>935 (38.8)</u>	70 (35.9)	
	oxon test; **Other race inc		viduais, Asians, Alas	ka matives,
american Indians Na	ative Hawaiians, and Pacif	ic leigndare		

with Achieving Viral Suppression*

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Non-Hispanic black vs. Non-Hispanic w
Age (per five y
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Homeless vs. permanent/stable hou
Public vs. private insu
Heterosexual vs. M
IDU vs. M
Perinatal vs. M
Transfusion/coagulation vs. M
Alcohol abuse vs. r
Substance abuse vs.:
Hepatitis C vs.:
Hepatitis B vs. :
Mental health diagnosis vs.

significantly associated with viral suppression

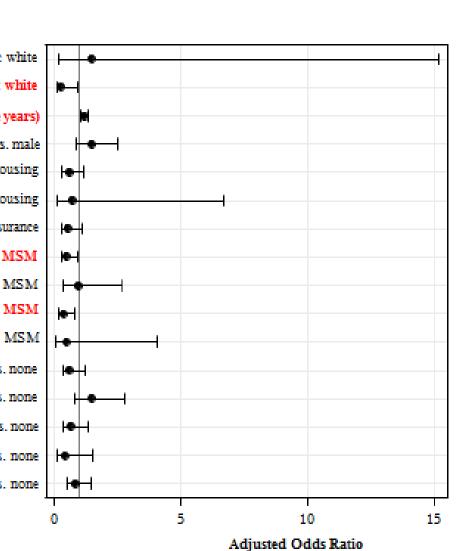
Executive Convertions (Jeffrey Binkley, Harlen Hays, Thila Subramanian, Kathy Wood, Rachel Debes); Children's National Institutes of Health [UO1 Al69503-03S2]. DC Cohort Executive Committee Members: Data in this manuscript were collected by the DC Department of Health [UO1 Al69503-03S2]. DC Cohort Executive Committee Members: Data in this manuscript were collected by the DC Cohort Executive Committee Members: Data in this manuscript were collected by the DC Department of Health [UO1 Al69503-03S2]. DC Cohort Executive Committee Members: Data in this manuscript were collected by the DC Department of Health [UO1 Al69503-03S2]. DC Cohort Executive Committee Members: Data in this manuscript were collected by the DC Department of Health [UO1 Al69503-03S2]. DC Cohort Executive Committee Members: Data in this manuscript were collected by the DC Department of Health [UO1 Al69503-03S2]. DC Cohort Executive Committee Members: Data in this manuscript were collected by the DC Department of Health [UO1 Al69503-03S2]. DC Cohort Executive Committee Members: Data in this manuscript were collected by the DC Department of Health [UO1 Al69503-03S2]. DC Cohort Executive Committee Members: Data in this manuscript were collected by the DC Department of Health [UO1 Al69503-03S2]. DC Cohort Executive Committee Members: Data in this manuscript were collected by the DC Department of Health [UO1 Al69503-03S2]. DC Cohort Executive Committee Members: Data in this manuscript were collected by the DC Department of Health [UO1 Al69503-03S2]. DC Department [UO1 Al69503-03S2]. DC Department [UO1 Al69503-03S2]. DC HAHSTA (Michael Kharfen); Family and Medical Counseling Service (Angela Wood); George Washington University (Princy Kumar, Mary Young); George Washington University (Princy Kumar, Mary Sevice (Angela Wood); George Washington University (Princy Kumar, Mary Sevice); NetroHealth (Annick Hebou); National Institutes of Health (Carl Dieffenbach, Henry Masur); Unity Health Care (Stephen Abbott); Veterans Affairs Medical Center (Debra Benator); Washington Hospital Center (Maria Elena Ruiz); Whitman-Walker Health (Rick Elion). We would also like to acknowledge the Research Assistants at all of the participating sites, the DC Cohort Community Advisory Board and GW Research Assistant, Sally Behan

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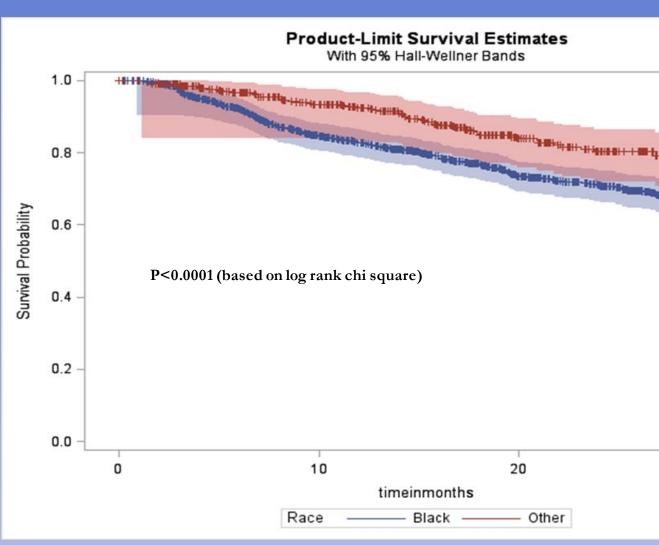
RESULTS

Figure 2. Kaplan Meier Curve of Sustained Viral Suppression



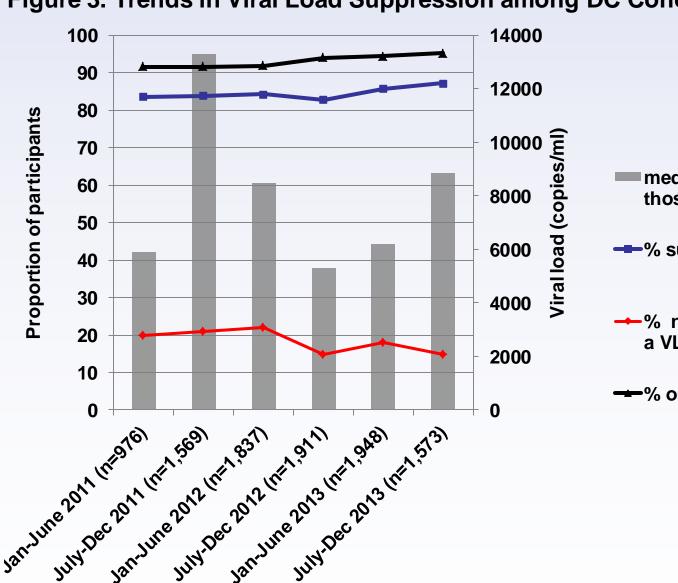


*Adjusted for all other variables in the model; variables in red were those found to be statistically



RESULTS

- 1,636 (62%) participants had sustained VS over the entire follow-up period
- 302/1375=28.8% of blacks failed to sustain VS (mean time to failure=24.9 months)
- 64/509=14.3% of other races failed to sustain VS (mean time to failure=26.7 months)



Study time period

Figure 3. Trends in Viral Load Suppression among DC Coh





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- Data reflect only those persons in care and consented to be in the DC Cohort.
- Limited follow-up period; longitudinal analysis will allow for further assessment of sustained VS.

DISCUSSION

hort Participants	• Among a large urban cohort of HIV-infected persons,
	the majority of persons were able to achieve and
	maintain viral suppression.
edian VL among ose not suppressed	• Disparities in viral suppression exist with regard to
suppressed (VL<200)	race, age, and mode of infection.
	• Further analysis of factors such as ART exposure and
not suppressed with VL >100K	drug resistance may provide further insight into
on ARVs	understanding observed treatment failures.
	 Efforts to identify populations with disparate
	outcomes will allow for appropriate targeting of
	resources to improve VS and achieve national goals.
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CONCLUSIONS

SUMMARY

- 93% of DC Cohort participants were able to achieve VS.
- Blacks, younger persons, those infected heterosexually or perinatally were significantly less likely to achieve VS.
- Blacks had significantly faster time to virologic failure compared to other race/ethnicities.
- The majority of participants sustained VS over time.
- Among the unsuppressed, median VLs ranged from 5,290-13,284 copies/ml, with 15-22% having VLs >100K.