

Trends in Awareness and Use of Pre-Exposure Prophylaxis, New York City (NYC) 2012-2014

Nana Mensah, MPH
Kathleen Scanlin, MPH
Zoe Edelstein, PhD MS
Paul Kobrak, PhD
Julie Myers, MD MPH

HIV in New York City

- New York City (NYC) has one of the largest HIV epidemics in the United States
 - Over 117,000 people diagnosed and living with HIV
 - 2,832 new diagnoses in 2013
- Men who have sex with men (MSM) are disproportionately impacted
 - 57% of all new HIV diagnoses in 2013
 - 71% of new diagnoses among men in 2013
- Between 2001 and 2013, no significant decrease in number of new diagnoses among MSM in NYC

Pre-Exposure Prophylaxis (PrEP)

- Daily pill prescribed to prevent HIV infection
- US FDA approved July 2012
- >90% effective if taken everyday
- Covered by New York State public insurance and most private insurers

NYC Department of Health has been measuring PrEP awareness and use among MSM since Spring 2012

Study Aim

We examined time trends and associations with PrEP awareness and use among MSM in NYC, 2012 – 2014.



Methods

Study design; Sexual Health Survey

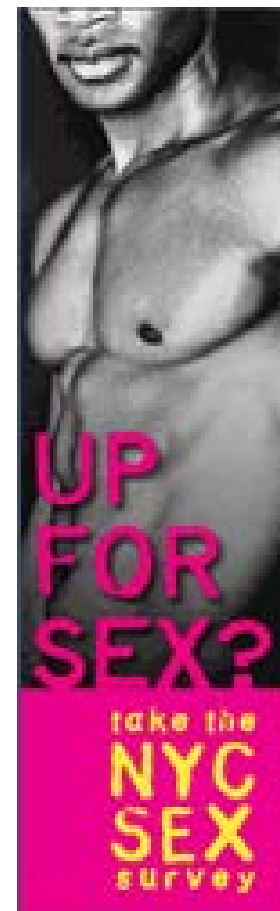
- Semi-annual, online surveys among MSM in New York City
- Analysis includes 6 survey cycles of data collection, spring 2012 to fall 2014

Study population

- Assigned male gender at birth
- NYC residents (ZIP code)
- 18-40 years of age
- Reported anal sex with a man in the past 6 months
- HIV-negative or unknown status

Data collection

- Recruitment online via banner ads on social networking sites and hook-up sites/apps targeted to gay men/MSM



Methods continued

Relevant survey questions /outcomes

- **PrEP AWARENESS:** “Sometimes people who do not have HIV take HIV medications on a daily basis before sex to keep from getting HIV. This is called pre-exposure prophylaxis, or PrEP. Have you ever heard of PrEP?”
- **PrEP USE:** “In the past 6 months, have you used PrEP to prevent yourself from becoming infected with HIV?”
- **Socio-demographics:** age, race/ethnicity, education, sexual identity

Data analysis

- Measured time trends and correlates with outcomes (PrEP awareness and use) over 6 survey cycles, 2012-2014
- Built multivariable logistic regression models for each outcome
 - Factors included were those that varied significantly between data collection cycles or were significant in bivariate models
 - Explored interaction terms with survey cycle; to detect differences in trends by factor

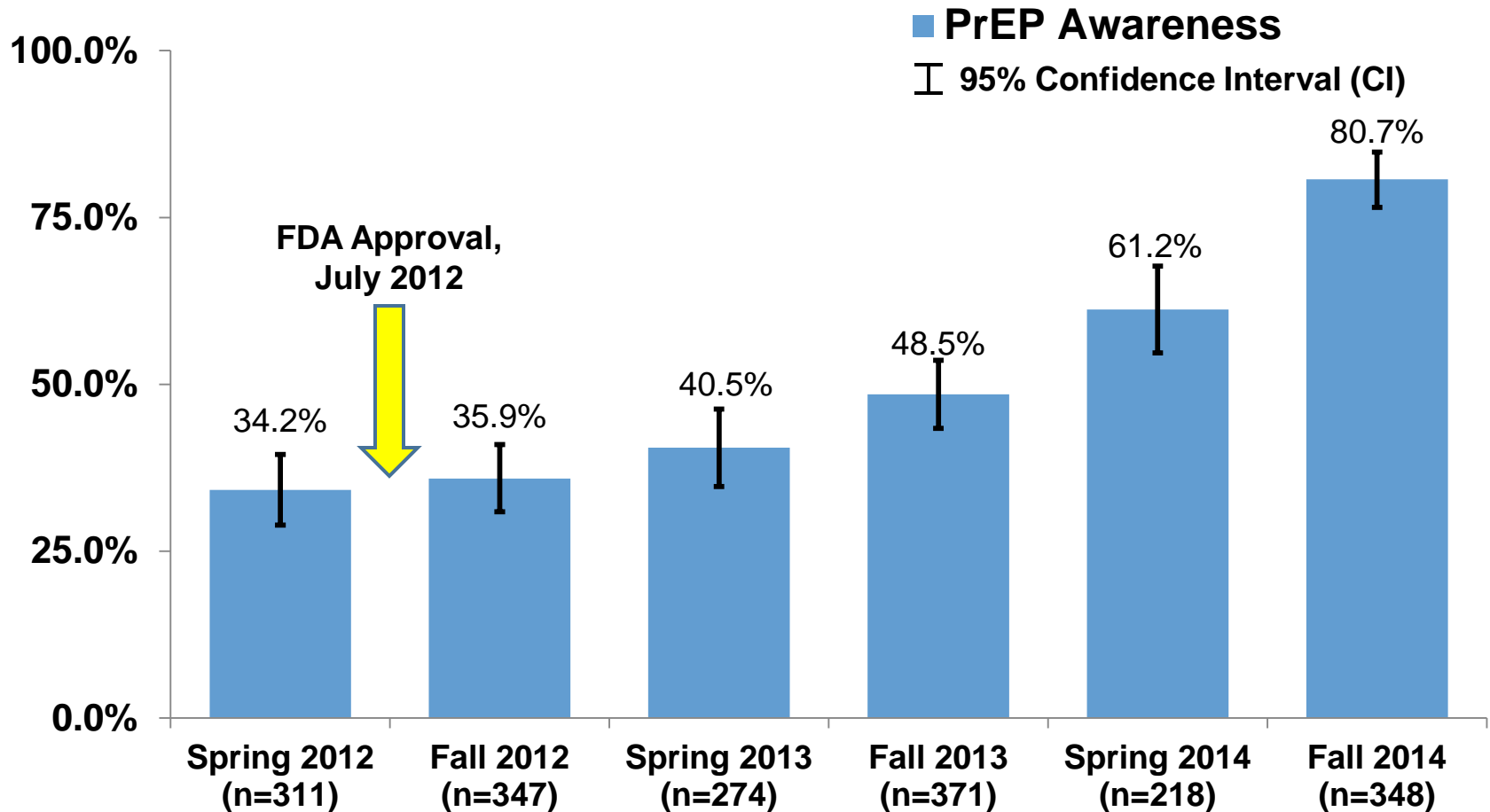
Sample: Demographic Characteristics (n=1869)

Characteristic	Category	n	%
Survey Cycle	Spring 2012	311	16.6
	Fall 2012	347	18.6
	Spring 2013	274	14.7
	Fall 2013	371	20.0
	Spring 2014	218	12.0
	Fall 2014	348	18.6
Age, years	18-29	1118	59.8
	30-40	751	40.2
Race/ethnicity	White	960	53.1
	Black	415	22.9
	Hispanic	292	16.1
	Other race	142	7.9
Level of education	High school or less	562	30.4
	More than high school	1284	69.6

PrEP Awareness

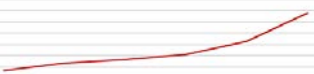
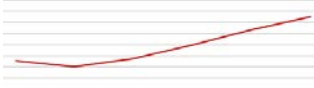
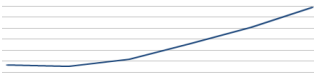
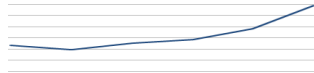
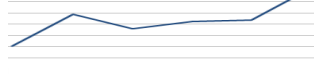

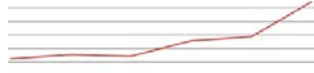



Awareness of PrEP among MSM in New York City, 2012 - 2014



* Aged 18-40, sexually active, with self-reported HIV status as negative or unknown

Time Trends in PrEP Awareness by Demographic Characteristics, unadjusted

Characteristic	Category	Spring 2012 (%)		Fall 2014 (%)	Relative % Change	p
Age, years	18-29	26.5		77.6	+192.4	<.0001
	30-40	45.2		84.8	+87.4	<.0001
Race/ ethnicity	White	36.3		88.6	+143.9	<.0001
	Black	33.3		69.0	+107.0	<.0001
	Hispanic	20.5		72.5	+255.6	<.0001
	Other race	41.4		85.3	+106.1	.0002
Level of education	High school or less	22.9		64.3	+180.5	<.0001
	More than high school	39.5		87.0	+120.2	<.0001

Correlates of PrEP Awareness, Multivariable

	Category	N	% Aware	aOR (95% CI)
Age, years	18-29	1108	44.2	Ref
	30-40	746	58.9	1.60 (1.30 – 1.99)
Race/ ethnicity	White	956	53.5	Ref
	Black	409	44.5	0.74 (0.56 – 0.97)
	Hispanic	288	44.1	0.87 (0.65 – 1.16)
	Other race	81	57.0	0.91 (0.62 – 1.34)
Level of education	High school or less	557	35.6	Ref
	More than high school	1276	78.5	2.15 (1.73 – 2.68)
Survey Cycle	Spring 2012	307	34.2	Ref
	Fall 2012	345	35.9	1.22 (0.86 – 1.73)
	Spring 2013	274	40.5	1.29 (0.88 – 1.86)
	Fall 2013	367	48.5	2.12 (1.50 – 3.00)
	Spring 2014	214	61.2	3.47 (2.94 – 5.24)
	Fall 2014	347	80.7	9.07 (6.11 – 13.45)

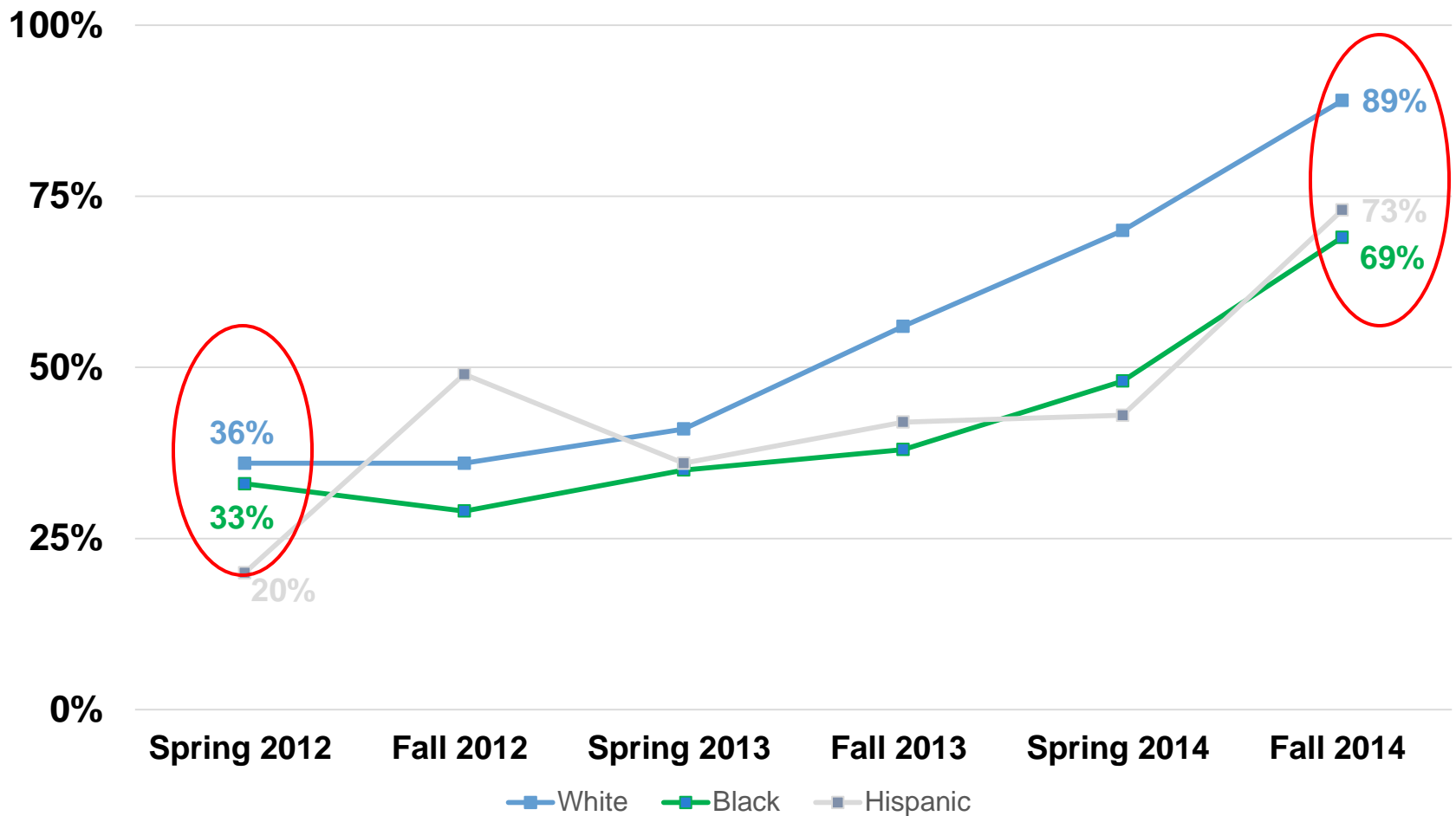
PrEP Awareness

Significant Race-Time Interaction

Category	<u>Spring 2012</u>			<u>Fall 2014</u>		
	N	% Aware	aOR (95% CI)	N	% Aware	aOR (95% CI)
White	61	36.3	Ref	147	88.6	Ref
Black	18	33.3	1.30 (0.64 – 2.64)	69	69.0	0.36 (0.18 – 0.69)
Hispanic	9	20.5	0.52 (0.24 – 1.25)	32	72.7	0.46 (0.20 – 1.10)
Other race	12	41.4	1.17 (0.51 – 2.65)	29	85.3	0.67 (0.23 – 2.0)

PrEP Awareness

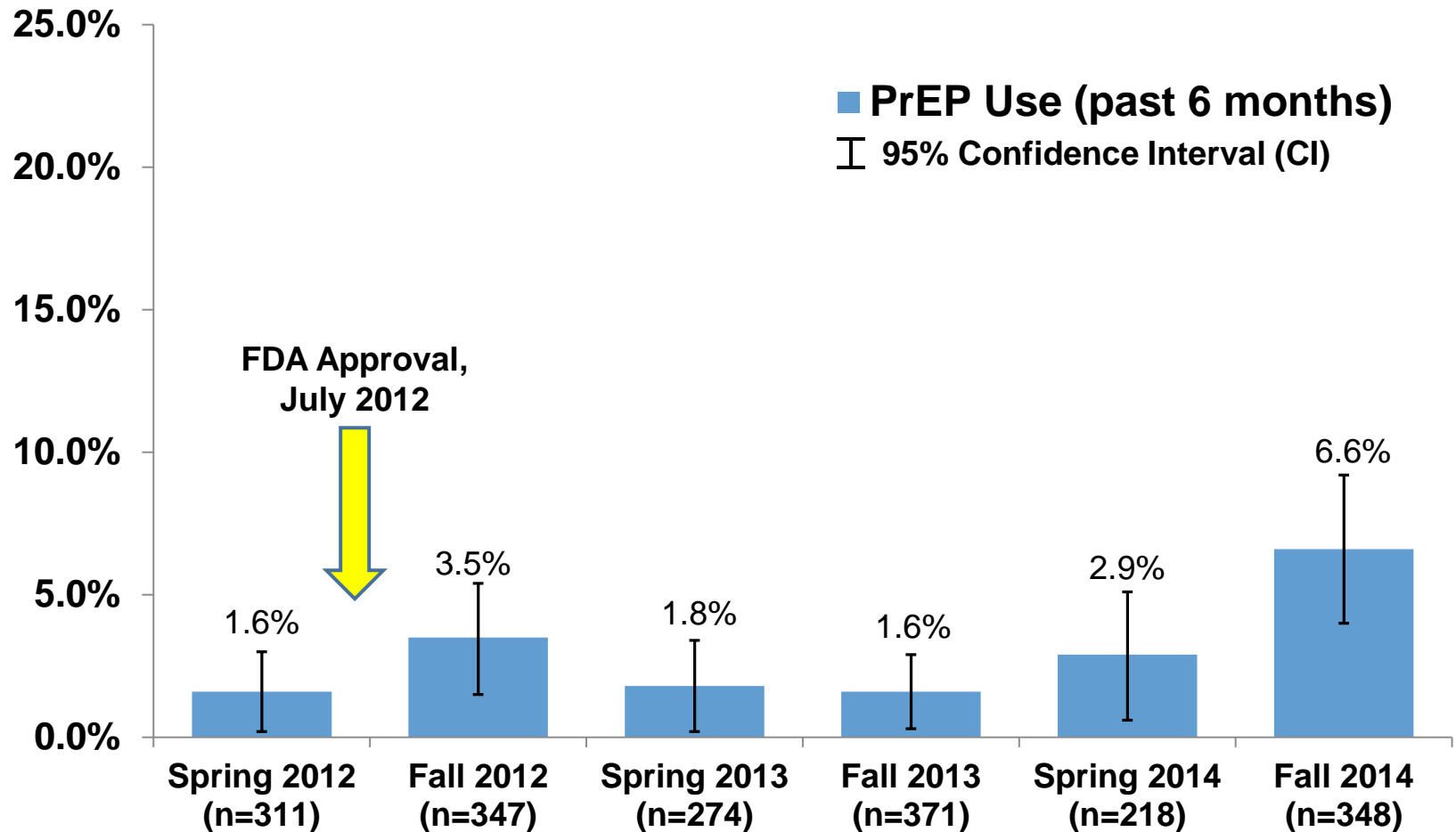
Significant Race-Time Interaction



PrEP Use


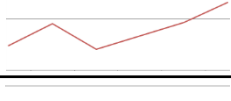




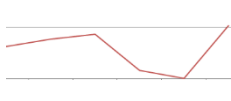



PrEP Use among MSM in New York City, 2012 - 2014



* Aged 18-40, sexually active, with self-reported HIV status as negative or unknown

Trends in PrEP Use by Demographic Characteristics, unadjusted

Characteristic	Category	Spring 2012 (%)		Fall 2014 (%)	Relative % Change	P
Age, years	18-29	1.1		6.6	+502.7	.013
	30-40	2.4		6.6	+178.2	.108
Race/ ethnicity	White	1.2		7.2	+507.6	.023
	Black	1.9		7.0	+278.4	.016
	Hispanic	4.6		6.8	+49.9	.85
	Other race	0.0		2.9	N/A	.77
Level of education	High school or less	3.1		5.1	+62.9	.21
	More than high school	.95		7.3	+667.4	.003

Correlates of PrEP Use, adjusted

	Category	N	% Used	aOR (95% CI)
Age, years	18-29	1107	2.4	1
	30-40	743	4.0	1.70 (0.99 – 2.89)
Race/ ethnicity	White	956	2.9	1
	Black	409	3.4	1.30 (0.66 – 2.55)
	Hispanic	288	3.4	1.27 (0.60 – 2.69)
Level of education	High school or less	557	2.9	1
	More than high school	1276	3.2	1.07 (0.58 – 1.97)
Survey Cycle	Spring 2012	307	1.6	1
	Fall 2012	345	3.5	2.19 (0.76 – 6.32)
	Spring 2013	274	1.8	1.13 (0.32 – 3.96)
	Fall 2013	367	1.6	0.97 (0.29 – 3.22)
	Spring 2014	210	2.9	1.79 (0.54 – 5.98)
	Fall 2014	347	6.6	4.09 (1.53 – 10.92)

Summary

- PrEP awareness and use increased significantly from 2012 to 2014 among surveyed sexually-active NYC MSM
- Awareness increased among all participants (+136%) and in each socio-demographic group measured
 - ▣ Use increased substantially (+312%), but remained low overall
- Correlates of PrEP awareness
 - ▣ More recent survey cycle
 - ▣ Older age (30-40 vs. 18-29)
 - ▣ Higher education (greater than HS vs. HS or less)
 - ▣ Race/ethnicity (black vs. white), but only in the more recent survey cycles
- Correlates of PrEP use
 - ▣ More recent survey cycle

Limitations

- Selection bias
 - ▣ Convenience sample
 - ▣ Self-selection

- Cross-sectional surveys

- Self-reported data
 - ▣ Potential concerns with online survey data

- Results may not be generalizable to other populations
 - ▣ Similar trends reported in other studies

Implications

- Results suggests PrEP is increasingly being recognized and adopted as an HIV prevention strategy among NYC MSM
- Indication of success of multi-domain, collaborative approach to increasing PrEP uptake in NYC
 - Daskalakis et al. Accelerating the Implementation of Antiretroviral Medications to Prevent HIV Infection in New York City. Abstract #1419, Monday 3:30-5:00pm
- Key areas being monitored and addressed:
 - Increasing PrEP use among MSM at risk
 - Addressing potential disparities in PrEP awareness and use



Acknowledgements

SHS Co-Investigators

Kathleen Scanlin, MPH

Zoe Edelstein, PhD MS

Paul Kobrak, PhD

Jennifer Medina Matsuki, MPH

Rafael Ponce

Ilona Gale, MPH

Bureau of HIV Prevention and Control Leadership

Demetre Daskalakis, MD MPH

Julie Myers, MD MPH

SHS Field Research Assistants

Contact information

Nana Mensah

nmensah@health.nyc.gov

**Share the Night,
Not HIV**

PrEP is preventive medication that can help you stay negative, even if he might be positive.

Condoms provide additional protection.
For more information on PrEP, talk to your doctor,
call 311 or visit nyc.gov and search "HIV PrEP and PEP"

NYC Health

©2014 The City of New York, Department of Health and Mental Hygiene. All Rights Reserved.

**We Share
Everything
but HIV**

PrEP is preventive medication that can help you stay negative, even if your partner is positive.

Condoms provide additional protection.
For more information on PrEP, talk to your doctor,
call 311 or visit nyc.gov and search "HIV PrEP and PEP"

NYC Health

©2014 The City of New York, Department of Health and Mental Hygiene. All Rights Reserved.

**We Share
Everything
but HIV**

PrEP is preventive medication that can help you stay negative, even if your partner is positive.

Condoms provide additional protection.
For more information on PrEP, talk to your doctor,
call 311 or visit nyc.gov and search "HIV PrEP and PEP"

NYC Health

©2014 The City of New York, Department of Health and Mental Hygiene. All Rights Reserved.