

# PrEP Stigma Predicts PrEP Uptake and Adherence: Results from the RADAR Cohort Study (0988)

Brian Mustanski, PhD; Michael E. Newcomb, PhD; Daniel T. Ryan, MS

Northwestern University Feinberg School of Medicine and Northwestern Institute for Sexual and Gender Minority Health & Wellbeing

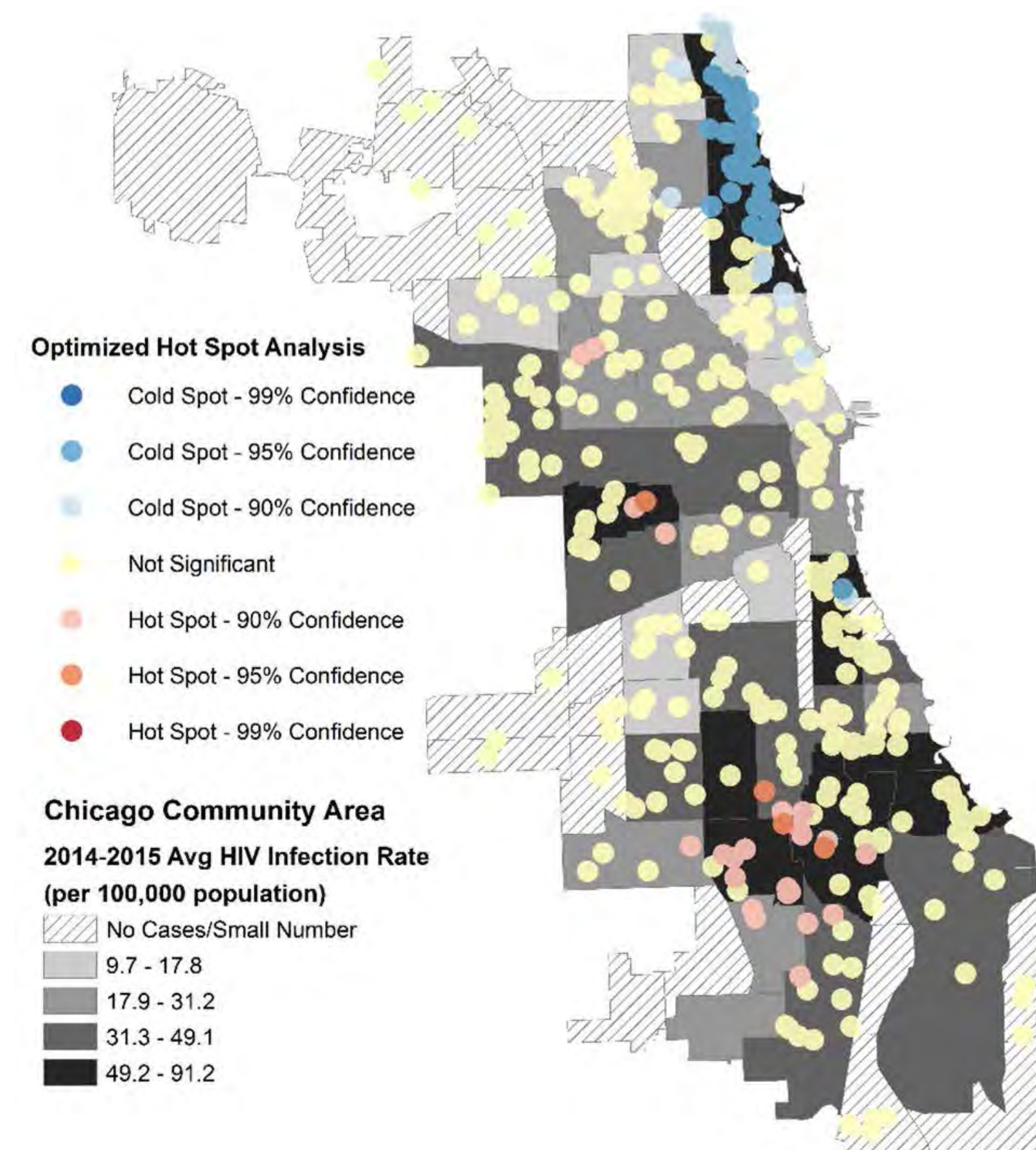
[brian@northwestern.edu](mailto:brian@northwestern.edu)

## INTRODUCTION

Increasing the uptake of pre-exposure prophylaxis (PrEP) to prevent HIV acquisition among at-risk populations, such as young men who have sex with men (YMSM), is of vital importance to slowing the HIV epidemic. Stigma and negative injunctive norms, such as the so called “Truvada Whore” phenomenon,<sup>1</sup> hamper this effort. In our prior research we developed a measure of PrEP Stigma and Positive Attitudes (PSPA) and demonstrated that these injunctive norm beliefs differ by race/ethnicity and cluster geographically among YMSM in Chicago.<sup>2</sup>

### INJUNCTIVE NORMS

- Definition: What a group commonly approves or disapproves of. Synonymous with “subjective norms” or “moral norms.”
- One of the strongest social predictors of both risky and protective health behaviors.
- Originated in the theories of reasoned action and planned behavior.<sup>3</sup>



Map reproduced from Mustanski et al. (2018)<sup>2</sup>  
GIS optimized hot spot analysis for PrEP stigma score from RADAR participants (n = 411). HIV infection rates from Chicago Department of Public Health, 2016 STI/HIV Surveillance Report

## METHODS

**Participants:** Data were collected as part of the RADAR study, an ongoing longitudinal cohort study of young men who have sex with men and transgender women (YMSMTW) living in the Chicago metropolitan area.<sup>(e.g., 2,4)</sup> Analyses were conducted on data from 105 YMSMTW with PSPA measured at two time points 6 months apart (to assess measure stability), and 622 participants who reported on PSPA at one time point and reported on PrEP use and adherence 6 months later. Data from first report were collected between February 2016 and October 2016.

**Measures:** Current PrEP use and adherence (#missed doses in prior week) were self-reported.

The PrEP Stigma and Positive Attitudes (PSPA) scale<sup>2</sup> (1 = strongly disagree 5 = strongly agree)

### Positive Attitudes

1. I think people should take PrEP.
2. People who are on PrEP are making a smart decision to protect their health.
3. People who are on PrEP are responsible.

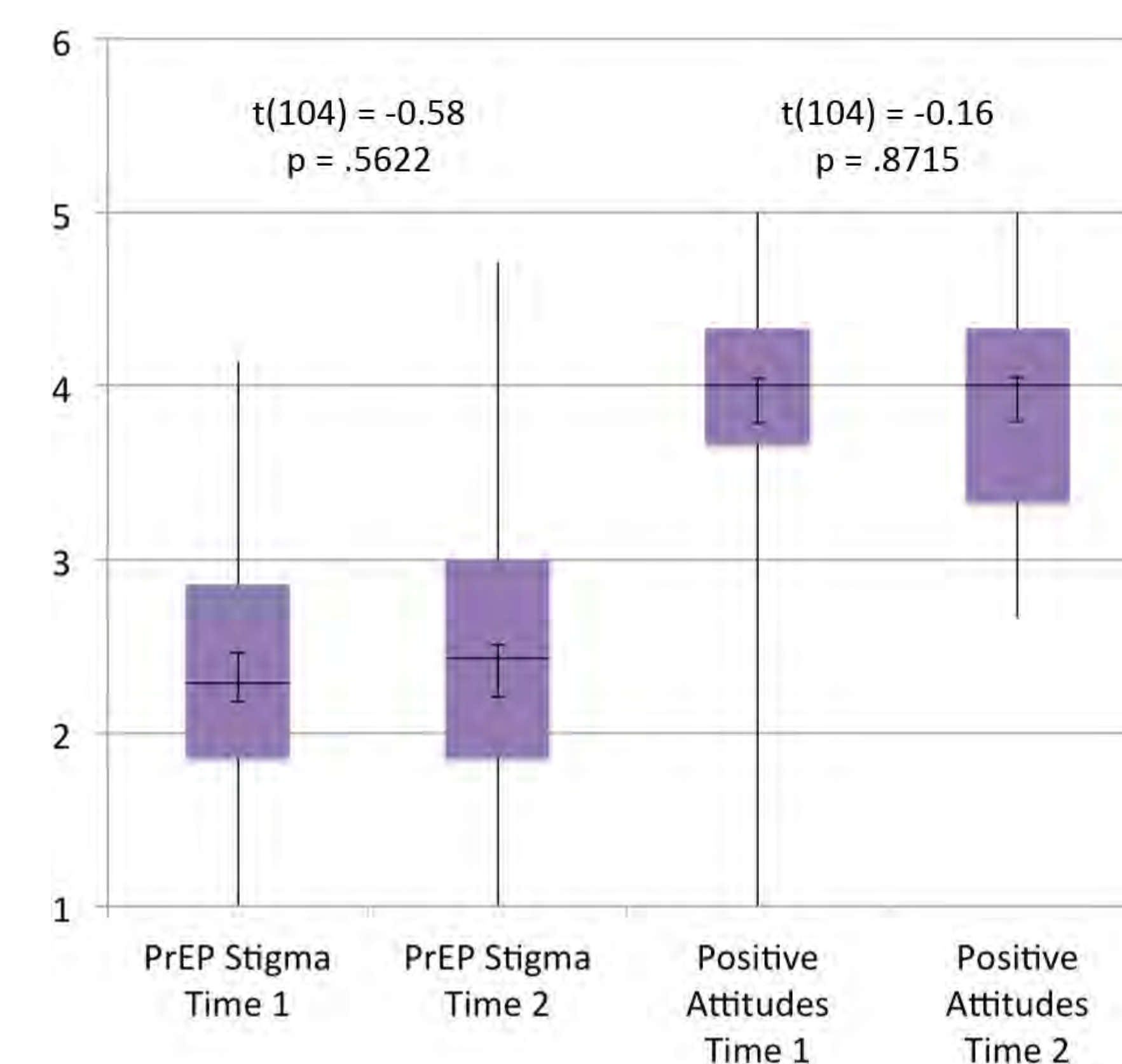
### PrEP Stigma

1. People who are on PrEP sleep around.
2. People who are on PrEP are irresponsible.
3. Having sex with someone on PrEP is risky.
4. I would not trust someone who told me they were on PrEP.
5. People who are on PrEP can't control their sex drive.
6. People who are on PrEP use it as an excuse to have sex without a condom.
7. Many people on PrEP lie about whether or not they take it every day.

## RESULTS

**Demographics:** Participants ranged in age from 16-29 years (M = 21.0, SD = 2.8). The majority identified as cisgender male (93.4%). The sample was diverse in terms of race/ethnicity (29.4% Black; 33.3% Latinx; 26.2% White) and sexual orientation (66.6% gay and 22.2% bisexual).

**PrEP Stigma and Positive Attitudes were highly stable over 6 months.**



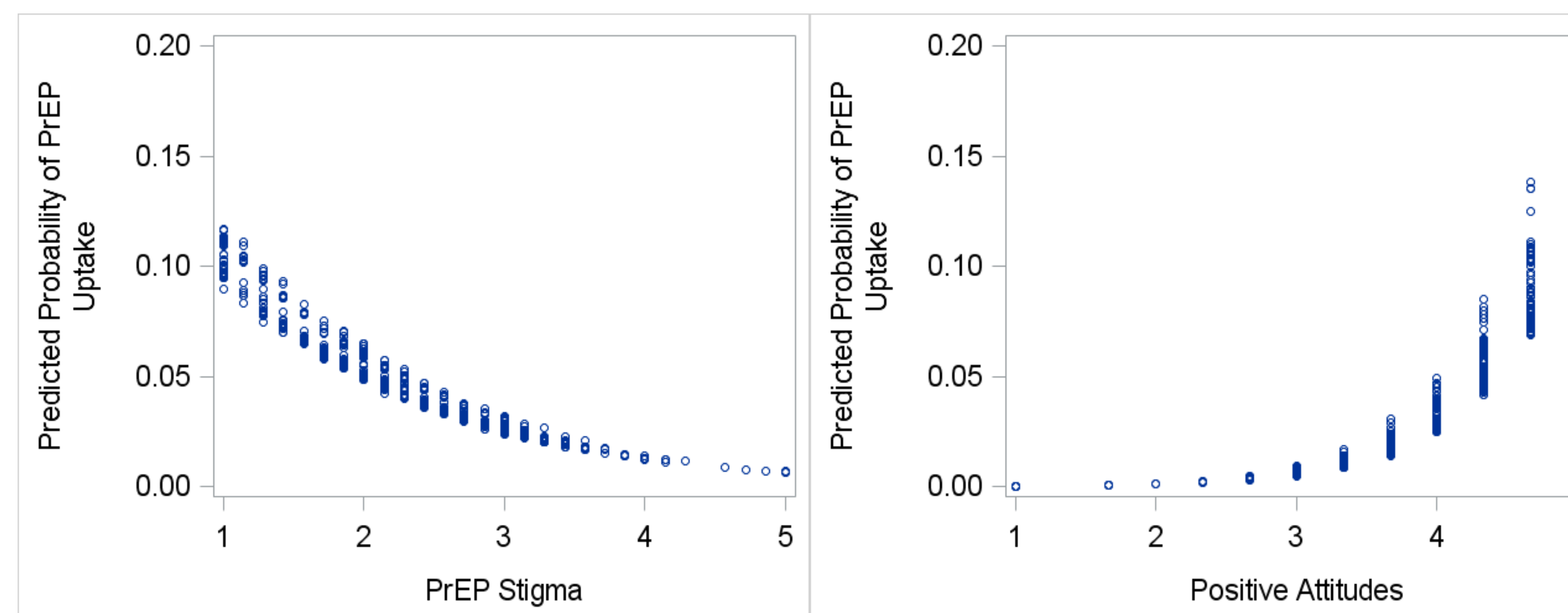
### Correlation Matrix For PrEP Stigma & Positive Attitudes

	1	2	3
1. PrEP Stigma (Time 1)			
2. PrEP Stigma (Time 2)	<b>0.62</b>		
3. Positive Attitudes (Time 1)	-0.32	-0.36	
4. Positive Attitudes (Time 2)	-0.30	-0.45	<b>0.59</b>

All p values < .01

**PrEP Uptake:** At the 6 month follow-up time point, 5.1% (n = 32) of participants who were not using PrEP at the baseline visit reported PrEP use in the prior 6 months, with 4.0% (n = 21) currently using PrEP at the time of follow-up interview.

**Predicting PrEP uptake:** Controlling for age, race, and gender identity, participants with **higher positive attitudes towards PrEP were significantly more likely to report currently taking PrEP** at the next study visit (OR=5.05, 95% CI: 2.40, 10.62) and participants with **higher PrEP stigma were significantly less likely to report currently taking PrEP** at the next visit 6 months later (OR=0.50, 95% CI: 0.29, 0.85).



**PrEP adherence:** Of those participants initiating PrEP, participants who reported missing at least one dose in the past week had significantly higher PrEP stigma scores (t=-2.39, P < .05) at the visit before compared to participants who did not miss a dose in the past week. Sensitivity analyses did not show an effect at higher levels of nonadherence.

## Discussion

In this longitudinal study of young MSM and transgender women:

\*Attitudes towards PrEP were more positive than stigmatizing. Stigma and positive attitudes were relatively independent factors.

\*PrEP stigma and positive attitudes were stable over 6 months.

\*Positive attitudes towards PrEP and PrEP stigma both were significant longitudinal predictors of PrEP. Positive attitudes had larger effects than stigma.

\*PrEP stigma longitudinally predicted PrEP adherence (defined as missing 1 dose in prior week). Positive PrEP attitudes were not predictive of adherence.

These findings are the first to look at how injunctive norms about PrEP longitudinally predict PrEP use and adherence. Results suggest that interventions that reduce stigmatizing attitudes towards PrEP and improve positive attitudes could increase PrEP utilization and improve adherence among users. Social marketing campaigns such as Chicago's PREP4Love campaign have been shown to positively influence PrEP attitudes. Personalized normative feedback interventions may also be effective at changing injunctive norms. Future analyses should examine how PrEP injunctive norms are related to PrEP sustainment versus discontinuation. Future research in the RADAR sample will test for biomarkers of PrEP use, which will help address measurement limitations related to PrEP adherence.

## Acknowledgements

This project was supported by a grant from the National Institute on Drug Abuse (U01DA036939), with support services provided by the Third Coast Center for AIDS Research (P30 A1117943) and the Northwestern University Clinical and Translational Sciences Institute (UL1TR001422). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. We would like to thank the RADAR research team, particularly Antonia Clifford for overseeing the project. We also thank the RADAR participants for sharing their experiences.

## References

1. Calabrese SK, Underhill K. How Stigma Surrounding the use of HIV Preexposure Prophylaxis Undermines Prevention and Pleasure: A Call to Destigmatize "Truvada Whores". *Am J Public Health*. 2015;105(10):1960-1964.
2. Mustanski B, Ryan DT, Hayford C, Phillips G, 2nd, Newcomb ME, Smith JD. Geographic and Individual Associations with PrEP Stigma: Results from the RADAR Cohort of Diverse Young Men Who have Sex with Men and Transgender Women. *AIDS Behav*. 2018;22(9):3044-3056.
3. Ajzen I, Fishbein M. *Understanding attitudes and predicting social behavior*. Englewood Cliffs, N.J.: Prentice-Hall; 1980.
4. Mustanski B, Morgan E, D'Aquila R, Birkett M, Janulis P, Newcomb ME. Individual and Network Factors Associated With Racial Disparities in HIV Among Young Men Who Have Sex With Men: Results From the RADAR Cohort Study. *J Acquir Immune Defic Syndr*. 2019;80(1):24-30.