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Behavior Change in Year following Diagnosis with Recent HIV-infection among Southern California Men Who Have Sex With Men

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Introduction:

- Understanding behavioral patterns of people with recent HIV infection over time provides insight into secondary transmission from individuals who are highly infectious
- Reducing unprotected sex soon after HIV-infection is likely to be an important component of efforts to control the MSM HIV epidemic in the US

Objective:

- To analyze sexual behaviors and partnering patterns of a cohort of MSM with recent HIV infection during their first year following diagnosis to determine the effects of partner type, partnership stability, partner characteristics including serostatus, and drug use on their reported practice of transmission behaviors such as unprotected anal intercourse (UAI)

Methods:

- 225, recently HIV-infected MSM were enrolled in a behavioral sub-study between 2002 and 2006
- HIV risk behaviors were assessed using a computer-assisted self interview
- Interviews were offered every 3 months in first year of study and every 6 months for as long as they were enrolled
- Baseline questions addressed last three sexual partners and at follow-up interviews the last partner
- Changes over time in numbers and HIV status of partners, UAI, drug use and partnership dynamics via the Partnership Assessment Scale (PAS) were measured
- A "persistent partner" was defined as those partners reported on in a previous interview.
- A bivariate random effect logistic regression model was used to assess the associations with individual and partner characteristics.

Results:

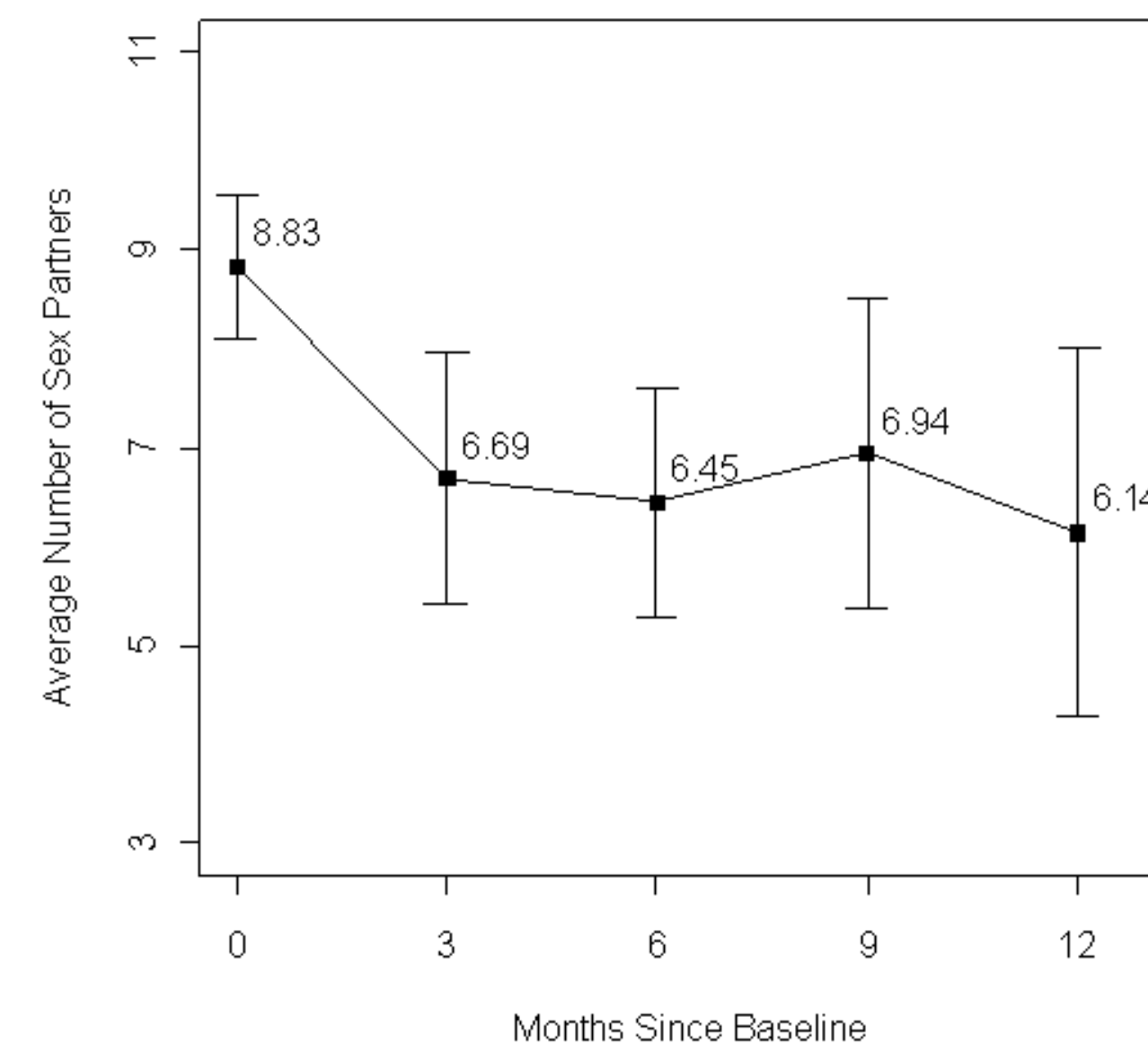
- Follow-up behavioral data was available for analysis on 193 men resulting in 562 interviews on 1,011 partners over a year
- There was median of 2 follow-up visits, with a median follow-up time of 106 days
- The mean age of participants was 35 years (range: 19-64)
- Most participants identified as White (71%), then Hispanic (21%)

Table 1: UAI and PAS reported at each time period

	Overall	Baseline	Month 3	Month 6	Month 9	Month 12
Number of subjects	193	193	121	107	86	55
Total number of reported partners	1011	597	131	120	100	63
Reported UAI with partner	525/967 (54.3%)	320/576 (55.6%)	67/128 (52.3%)	61/116 (52.6%)	43/91 (47.3%)	34/56 (60.7%)
Average PAS across all partners *	12.4(8.3)	10.3(8.4)	14.6(8.3)	16.6(8.2)	14.5(8.8)	15.9(9.2)

*Responses to all questions not available for all 1011 reported partners.
** PAS= Partnership Assessment Scale; Numbers reported as Mean(SD)

Figure 1: Mean number of partners reported in the prior 3 months (95% CIs)

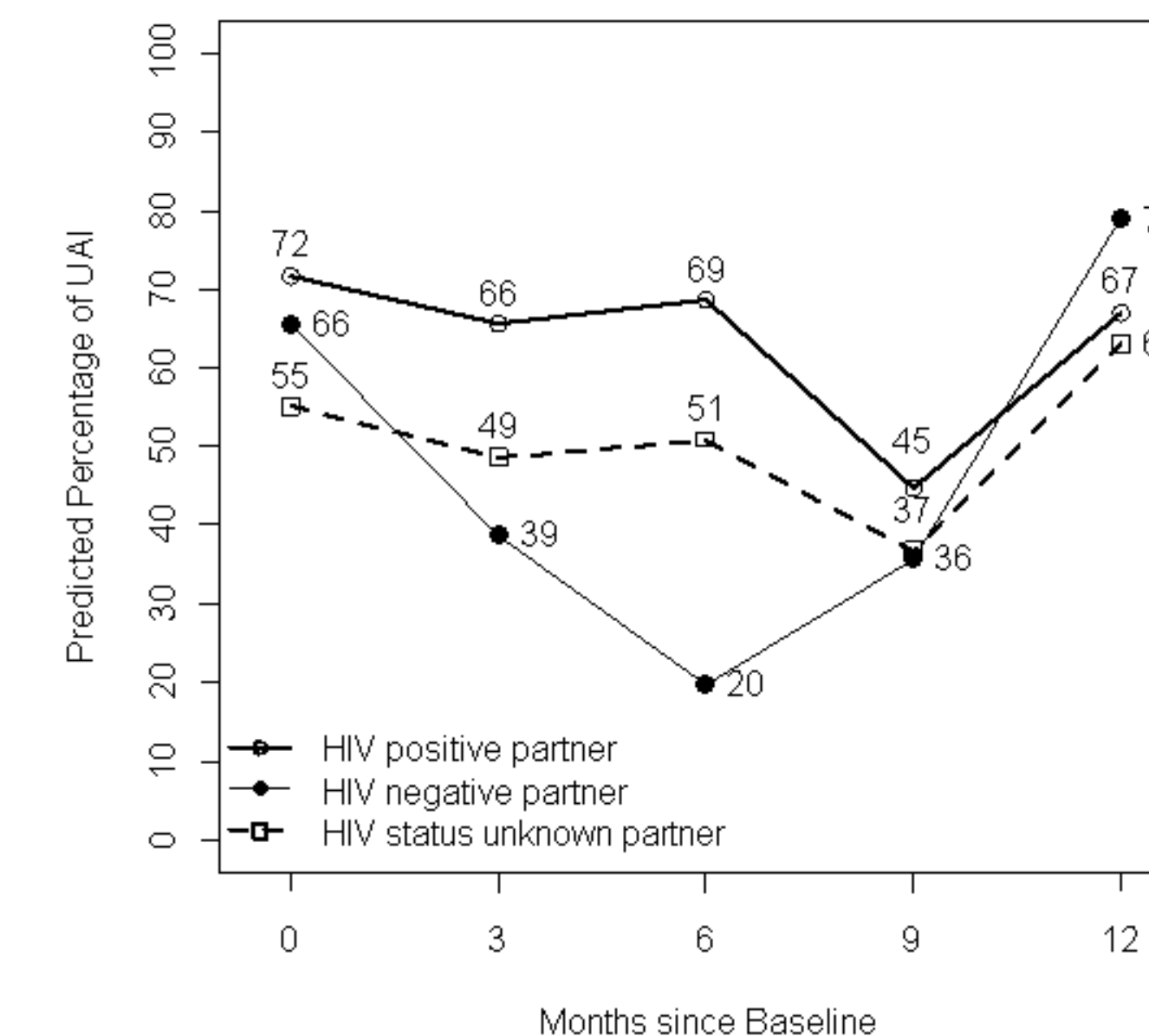


Results cont'd:

- There was a significant decrease in the numbers of partners reported over time (figure 1), with the most significant drop occurring from baseline to 3-months ($p < .0001$, 95% CI for the rate ratio 3 months to baseline 0.65 -- 0.78).

- Among those reporting a last partner as HIV negative, the percent reporting UAI with that partner decreased from 66% at baseline to 36% at 6 months ($p=0.04$ for significance of -22.5% change) but then rebounded at 12 months to 79% ($p=0.06$ for 87.1% change from 9 months to 12 months) resulting in more men with HIV negative partners having UAI with them after a year of being diagnosed with HIV

Figure 2. Percent Reporting Unprotected Anal Intercourse (UAI) with Last Partner by HIV-infection Status of Last Partner: From Baseline Through One Year of Follow-Up



- Over the year following HIV diagnosis, the following were significantly associated with reported UAI in the multivariable analysis (Table 2) :

Hispanic ethnicity; PAS score at baseline and FU; methamphetamine use at baseline and FU; HIV negative partner at follow-up; partners with unknown HIV status at follow-up

Table 2: Odds Ratios and 95% CI for covariates in a multiple logistic random effects model on the reporting of UAI with any reported partner.

Variable	OR	95% CI	
		Lower	Upper
Baseline Intercept [†]	0.98	0.44	2.19
Followup Intercept [†]	0.85	0.40	1.83
Baseline Methamphetamine use***	3.2	1.82	5.62
Followup Methamphetamine use***	5.46	2.24	13.3
Baseline Partner HIV negative	0.67	0.32	1.39
Baseline Partner HIV status unknown	0.76	0.35	1.65
Followup Partner HIV negative***	0.32	0.18	0.59
Followup Partner HIV status unknown*	0.42	0.21	0.84
Partner HIV positive (reference)	-	-	-
Baseline PAS**	1.05	1.02	1.09
Followup PAS**	1.06	1.02	1.1
Hispanic**	0.51	0.32	0.81
Other	0.96	0.45	2.03
White (reference)	-	-	-

*significant at .05, ** significant at .01, *** significant at .001

[†]Baseline intercept is an indicator of the initial visit, Follow-up intercept is an indicator of any visit after baseline.

Conclusions:

- Men with recent HIV-infection reduced their total numbers of partners over their first year of infection; the greatest decrease was in the first 3 months and afterwards declines were slight although significantly less than baseline.
- We identify a rebound in risk behaviors at one year, suggesting that behavioral risk reduction is not sustained after a year.
- There is potential HIV transmission to many different men, as over half reported a partner whose HIV status was negative or status unknown during that year. Moreover, while the trend was for a reduced number of partners, over half of the partners they did have were men vulnerable to acquiring their HIV.

Implications:

Our findings highlight the importance of the first 3 months after diagnosis as a time when behavior change occurs. It also suggests a need for programs to support the maintenance of such change after this window of opportunity and particularly after 9 months.