

# Patterns of Substance Use among MSM and Its Relationship to HIV Status and Risk Behaviors: Implications for Prevention

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Crystal Prevention Project  
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# CRYSTAL Prevention (CRYSP) Needs Assessment

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Primary Needs Assessment Goal: develop a profile of gay men/MSM living in 6 targeted communities with high HIV prevalence rates living (or playing) on Chicago's northeast side guided by a series of key analytic questions:

- What is the prevalence of methamphetamine and other substance use, including alcohol use, among MSM living in or frequenting the Project CRYSP target area?
- How often is methamphetamine used by those who use the drug and in combination with what other drugs is it used?

# CRYSTAL Prevention (CRYSP) Needs Assessment

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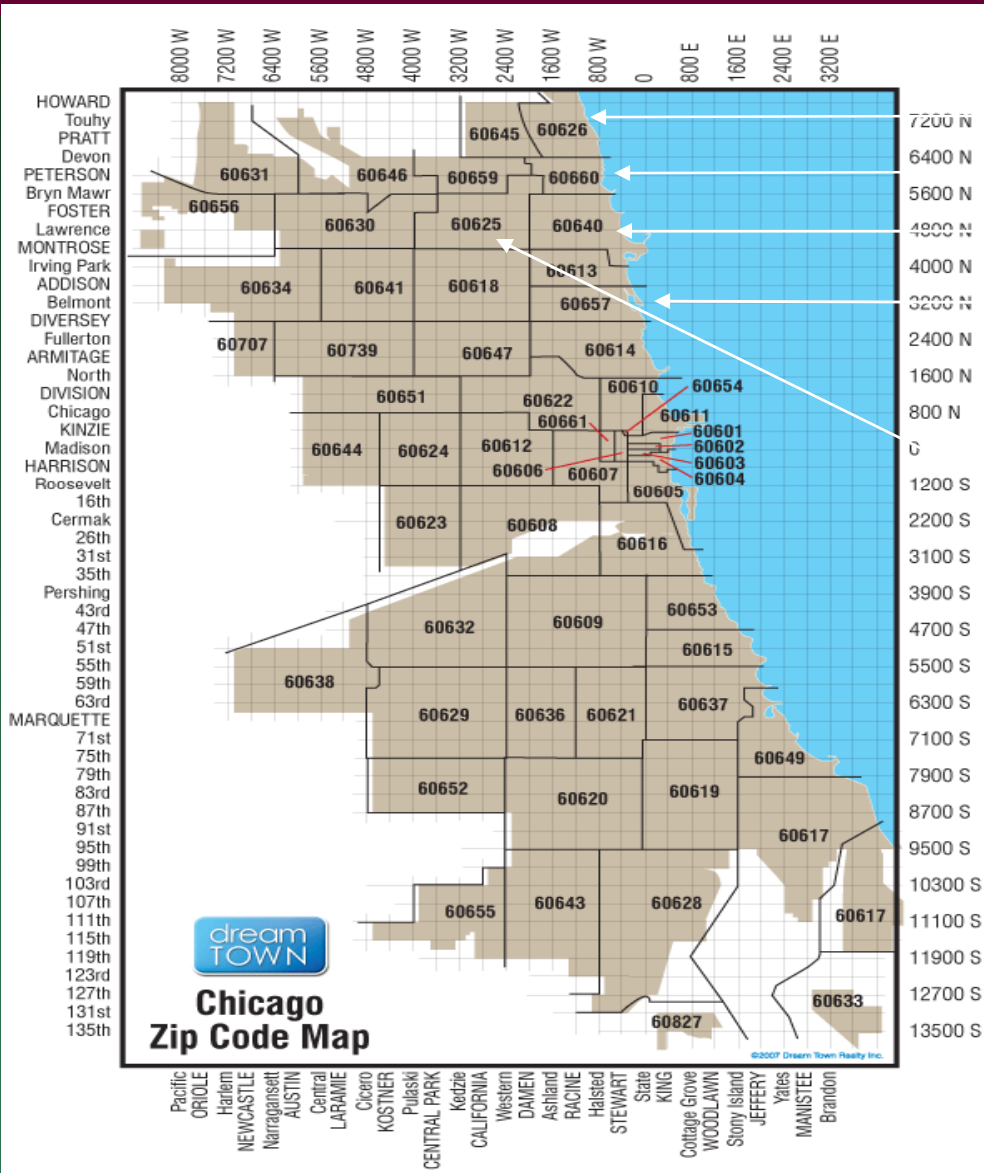
- What are the associations of important co-factors identified in the research literature as being related to increased participation in risky sexual activities such as, having a serious mental illness (SMI), being HIV positive, and being infected with other STDs and meth use?
- Why do MSM start using methamphetamine?
- How, if at all, is the pattern of substance use, including methamphetamine use, among Chicago MSM associated with HIV status and with sexual risk behaviors?

# CRYSTAL Prevention (CRYSP) Needs Assessment

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- What elements/strategies would constitute an effective campaign to prevent and reduce crystal methamphetamine (and other drug) use among Chicago MSM?
- Key advice from the first think tank:
  - Do NOT focus solely on meth use
  - Do NOT run a scare tactic campaign, have positive messages
  - Consider drug use within the context of a holistic health message

# CRYSIP Target Communities



60626 – Rogers Park

60660 – Edgewater

60640 – Uptown

60613 60657 – Lakeview

60625 – Lincoln Square

# CRYSP Source Data:

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- Internet surveys (2008-2009) of methamphetamine and other drug use (including alcohol) and health-related behaviors.
- National HIV Behavioral Surveillance Data or “CHAT” (CDC multi-site study).
- Focus groups with treatment clients in the Crystal Clear program at Howard Brown Health Center (to get at the whys).

# CRYSP Needs Assessment

- CRYSP Internet Survey Data:
  - Develop a baseline of meth use and HIV risk using data in collected in the first wave (Fall 2007).
  - Use subsequent years (2008 – 2010) assess trends in meth use and effects of CRYSP intervention.
  - Questions (2008) structured to parallel NHBS data for combined analyses and comparison of online with in-person survey participants.
- Analytic Plan:
  - Place meth use in the context of other drug use to see if respondents can be classified into use groups (and targeted for prevention accordingly).
  - Develop HIV risk group profile based on risky sexual behavior indicators.
  - Relate drug use to HIV risk using group profiles.
  - Relate various co-factors such as HIV status and serious mental illness

# Internet Survey Data

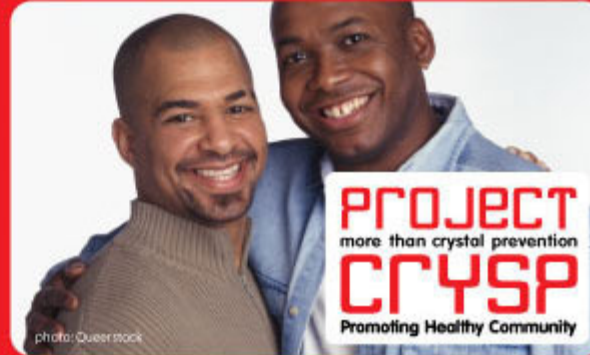
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- Advertised on web sites of CRYSP agencies and Lifelube.org using banner ads.
- 2007 collection year included Internet dating site but 2008 did not.
- Online questionnaire for both years had 72 questions, many multipart; 30-40 minutes to complete.
- Survey was restructured in 2008 to change or add questions but drug use questions remained (mostly) the same.
- Completion rate in 2007 (70%) was somewhat higher than 2008 (63%).

# Sample Banner Ads

**Men of Chicago**  
**Tell us about**  
**your sex life**

[CLICK HERE TO GO TO SURVEY](#)



**Men of Chicago**  
**Tell us about**  
**your sex life**

[CLICK HERE TO GO TO SURVEY](#)

# Demographics by Collection Year

	<b>2007</b> <b>(N = 649)</b>	<b>2008</b> <b>(N = 396)</b>	
<b>Ethnicity</b>			
African-American	9.4 %	8.8 %	
White	76.0	73.5	
Latino	8.2	11.4	
Other	6.5	6.3	
<b>Age Category</b>			
18-24	17.9	16.9	
25-44	59.8	60.6	
45+	22.3	22.3	
<b>HIV+</b>	19.3	17.7	
<b>SMI</b>	17.7	28.7	***
<b>Lonely</b>	47.8	35.2	***

# Drug Use Indicators by Collection Year

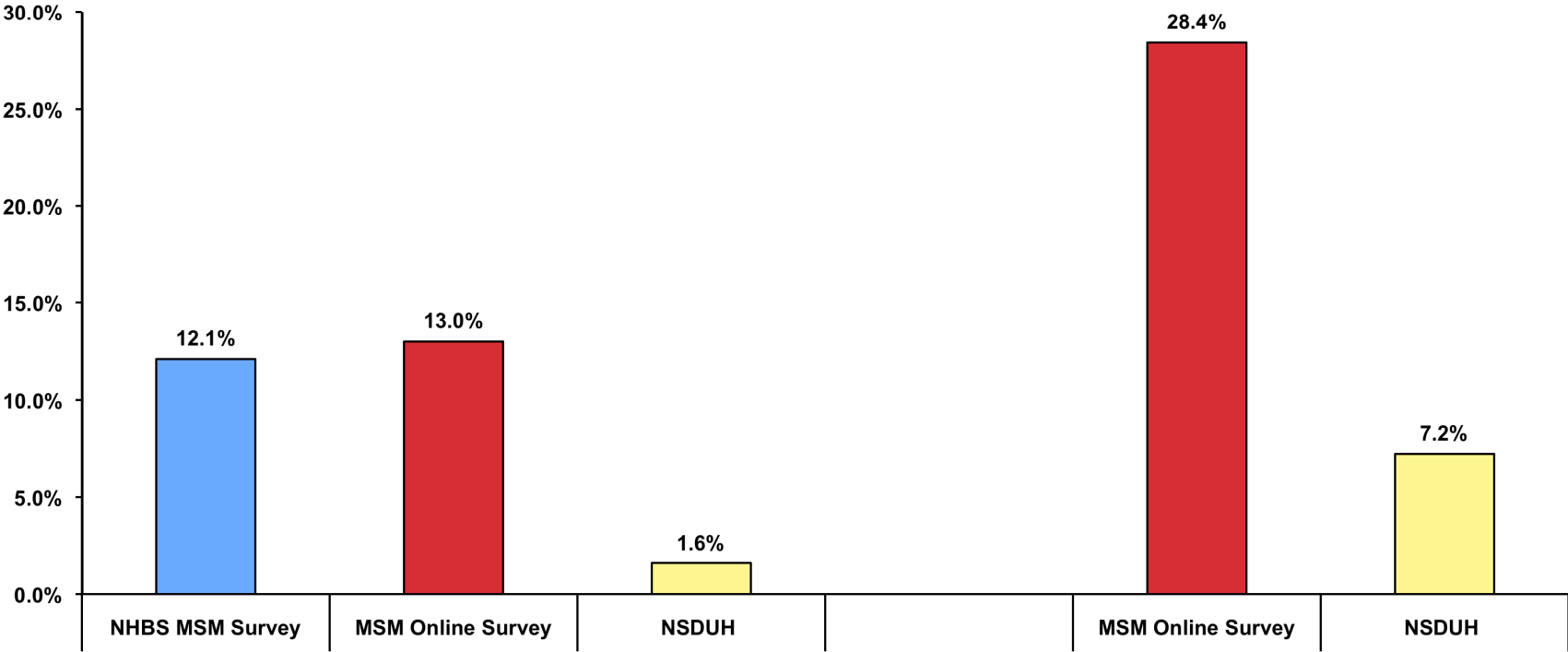
	2007 (N = 649)	2008 (N = 396)	
Alcohol Use > weekly	57.7 %	58.8 %	
<b>Alcohol abuse</b>	<b>16.5</b>	<b>26.3</b>	<b>**</b>
Mj Use > weekly	13.7	10.5	
<b>Poppers &gt; weekly</b>	<b>15.3</b>	<b>7.6</b>	<b>***</b>
Cocaine	12.6	14.8	
Analgesics	9.7	12.7	
Tranquilizers	12.9	13.9	
<b>Hallucinogens</b>	<b>1.5</b>	<b>7.0</b>	<b>***</b>
Club Drugs	11.1	12.3	
<b>Methamphetamine</b>	<b>23.7</b>	<b>13.7</b>	<b>***</b>
<b>Erectile Dysfunction</b>	<b>4.0</b>	<b>27.4</b>	<b>***</b>

# HIV Risk Indicators by Collection Year

	<b>2007</b>	<b>2008</b>
	<b>(N = 649)</b>	<b>(N = 396)</b>
<b>Paid for sex</b>	7.1 %	7.0 %
<b>Got paid for sex</b>	4.0	5.6
<b># Men had sex with</b>		
0-1	71.4	73.3
2-10	17.4	14.3
> 10	11.2	12.4
<b>URAI</b>	28.1	31.6
<b>UIAI</b>	34.6	37.1
<b>Injected drugs</b>	3.2	3.8

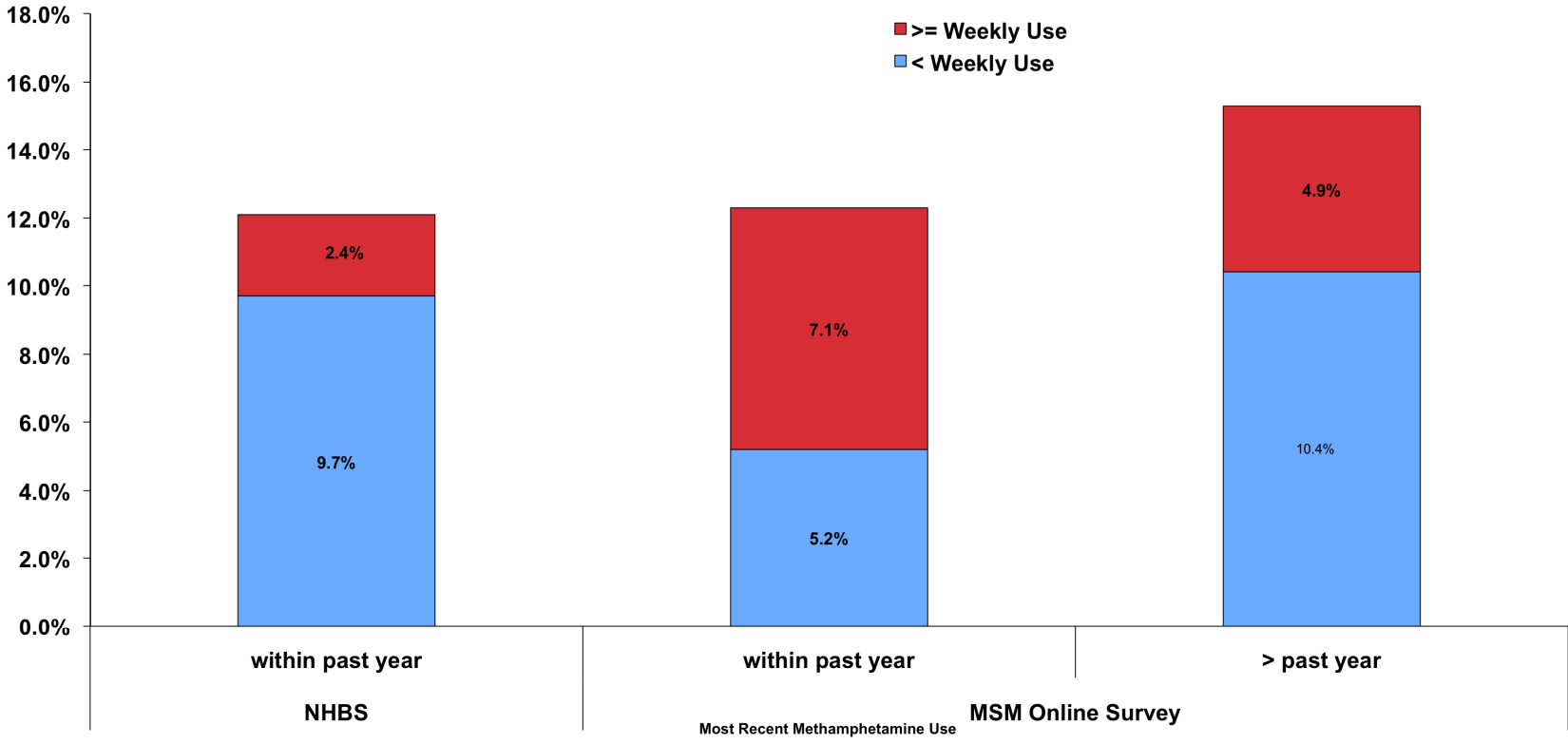
# HIV Risk Indicators by Collection Year

Prevalence of Methamphetamine Use by Measurement Period and Survey Sample



# HIV Risk Indicators by Collection Year

Figure 4. Frequency of Methamphetamine Use among Chicago MSM by Survey and Recency of Use

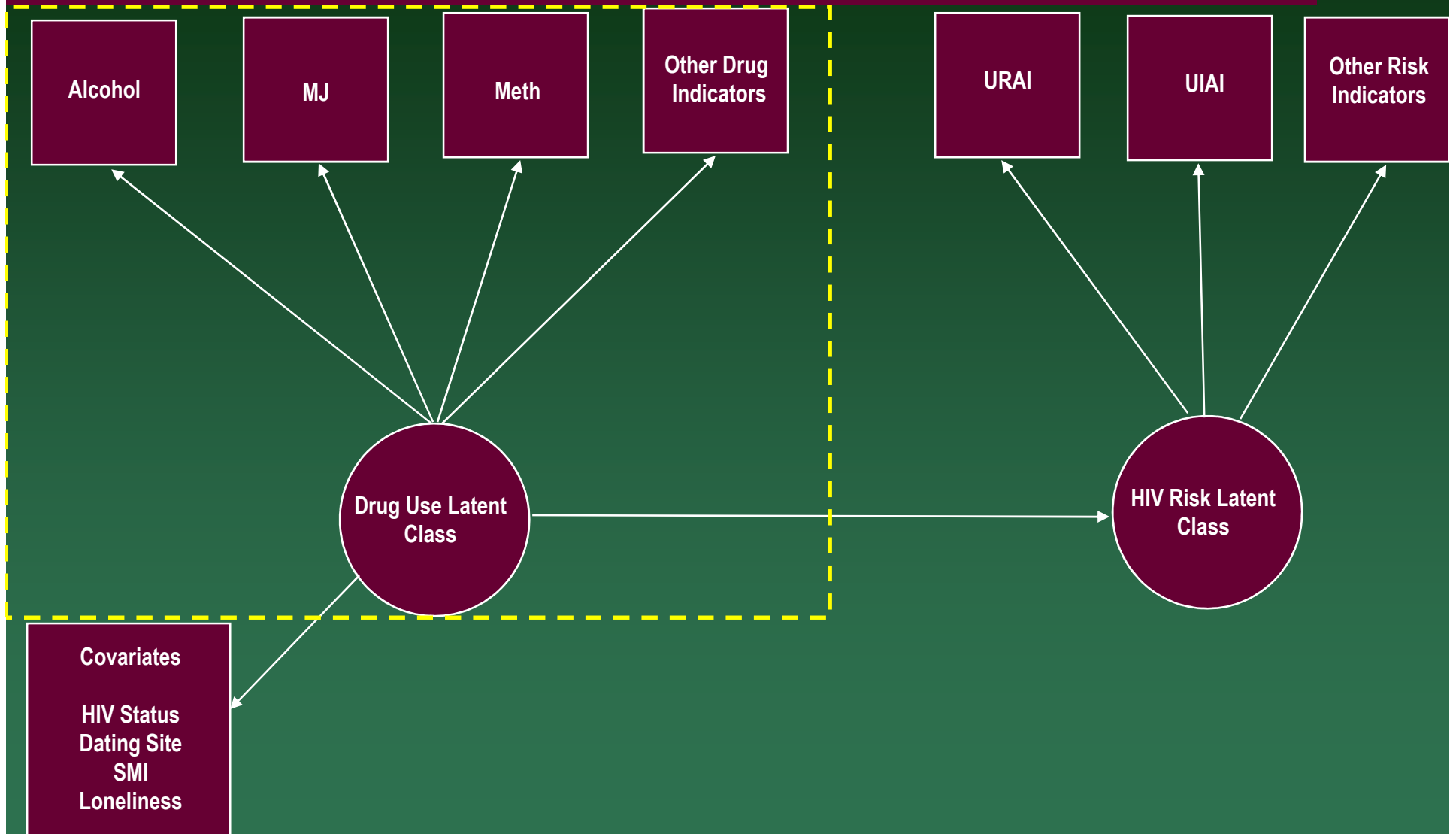


# Patterns of Drug Use and HIV risk

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- Analytic Question: Can we group participants, particularly meth users in the context of other drug use and can we group participants according to HIV risk indicators?
- If so, does the pattern of use relate to the pattern of HIV risk behaviors?
- Latent Class Analysis used to address all three questions.

# Full Latent Class Model



# LCA Results for Drug Classes

Classes	Likelihood Ratio	Parameters	BIC	SS Adj BIC	AIC	LMR	Entropy
1	977.51	12	8748.70	8710.59	8690.32		
2	882.15	27	8532.89	8447.14	8401.48	0.0000	0.823
3	783.81	41	8531.51	8401.29	8331.96	0.1889	0.690
4	706.18	55	8526.02	8351.34	8258.34	0.0445	0.767
5	654.17	69	8558.55	8339.41	8222.74	0.0097	0.828
6	619.63	89	8606.63	8343.02	8202.67	1.0000	0.818

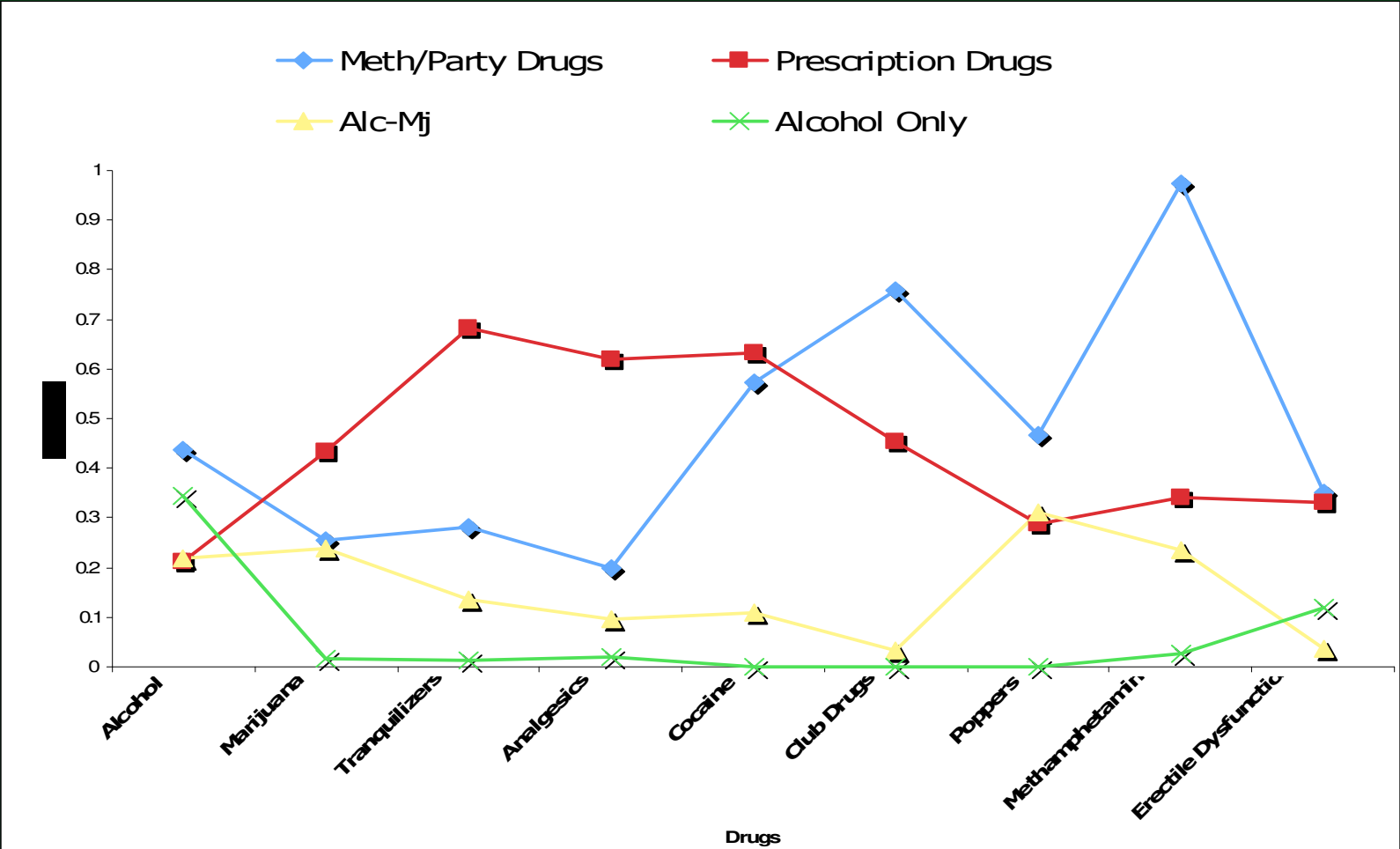
# LCA Results: Entropy

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## Classification Results

	Class 1	Class 2	Class 3	Class 4
Class 1	0.899	0.019	0.082	0.000
Class 2	0.054	0.807	0.139	0.000
Class 3	0.024	0.027	0.868	0.081
Class 4	0.001	0.001	0.129	0.869

# LCA Results: Estimated Drug Use Probabilities by Latent Class

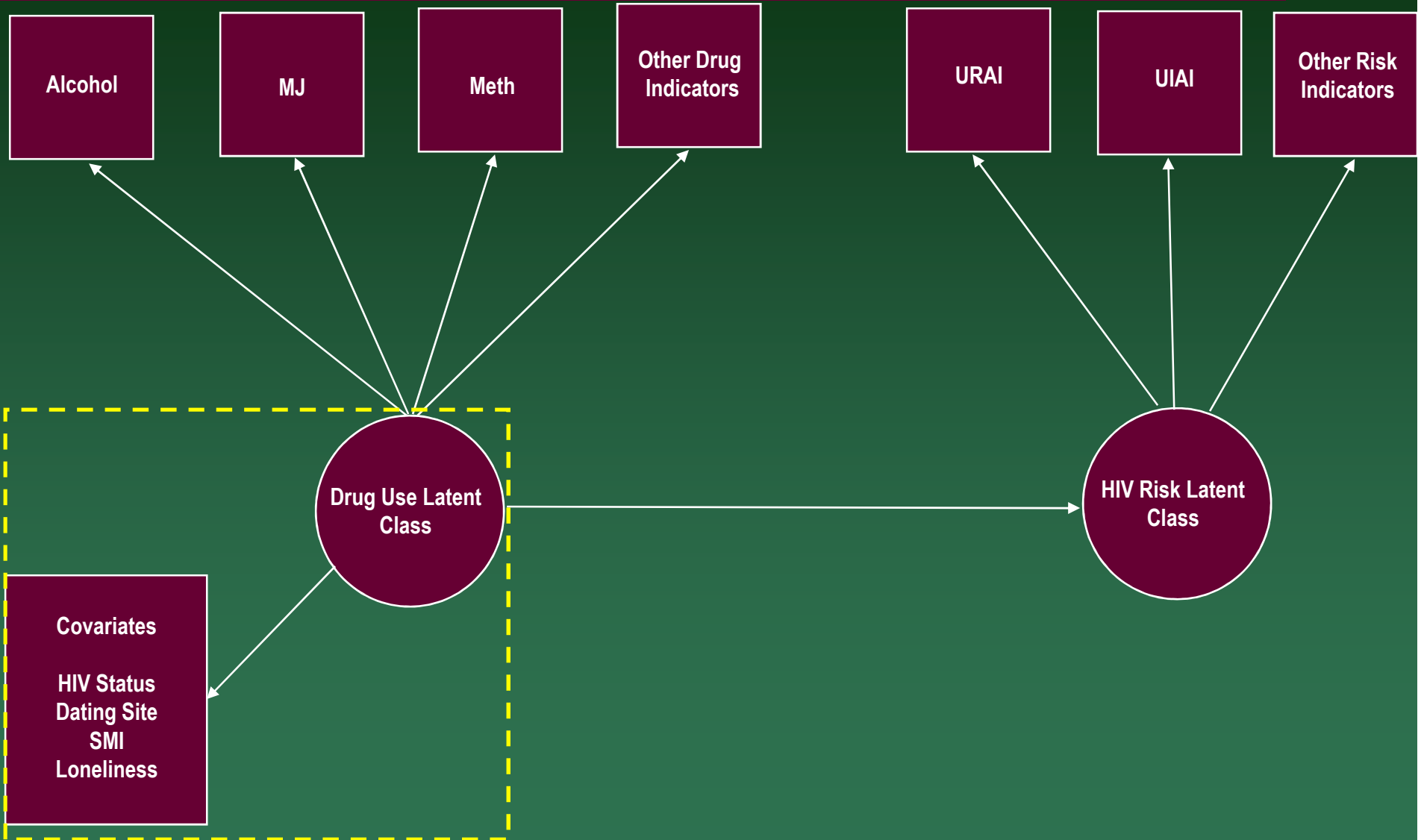


# LCA Results: Class Sizes

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	<b>Internet</b>	<b>NHBS</b>
<b>Meth/Party Drugs</b>	10%	4%
<b>Prescription Drugs</b>	3	2
<b>Alcohol - MJ</b>	37	26
<b>Alcohol/Non-User</b>	48	68

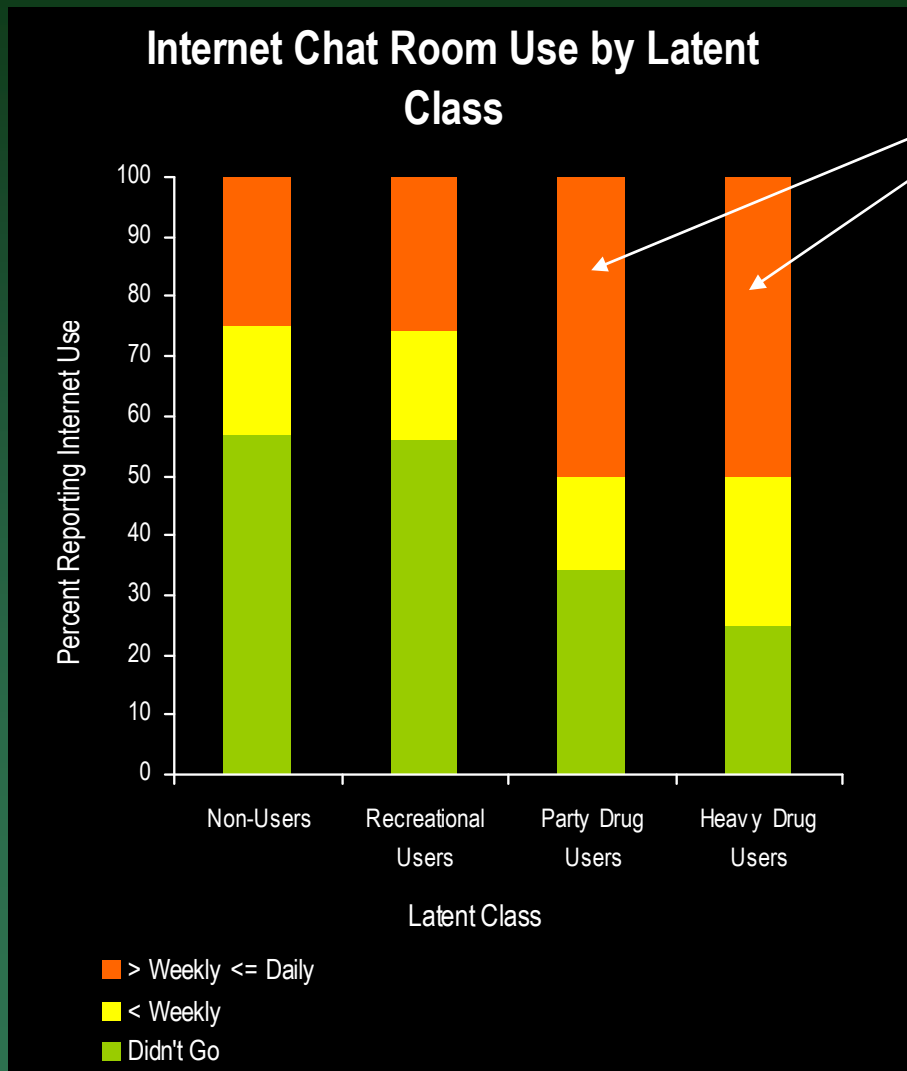
# Latent Class Model: Add Covariate Predictors



# LCA Results: Covariates

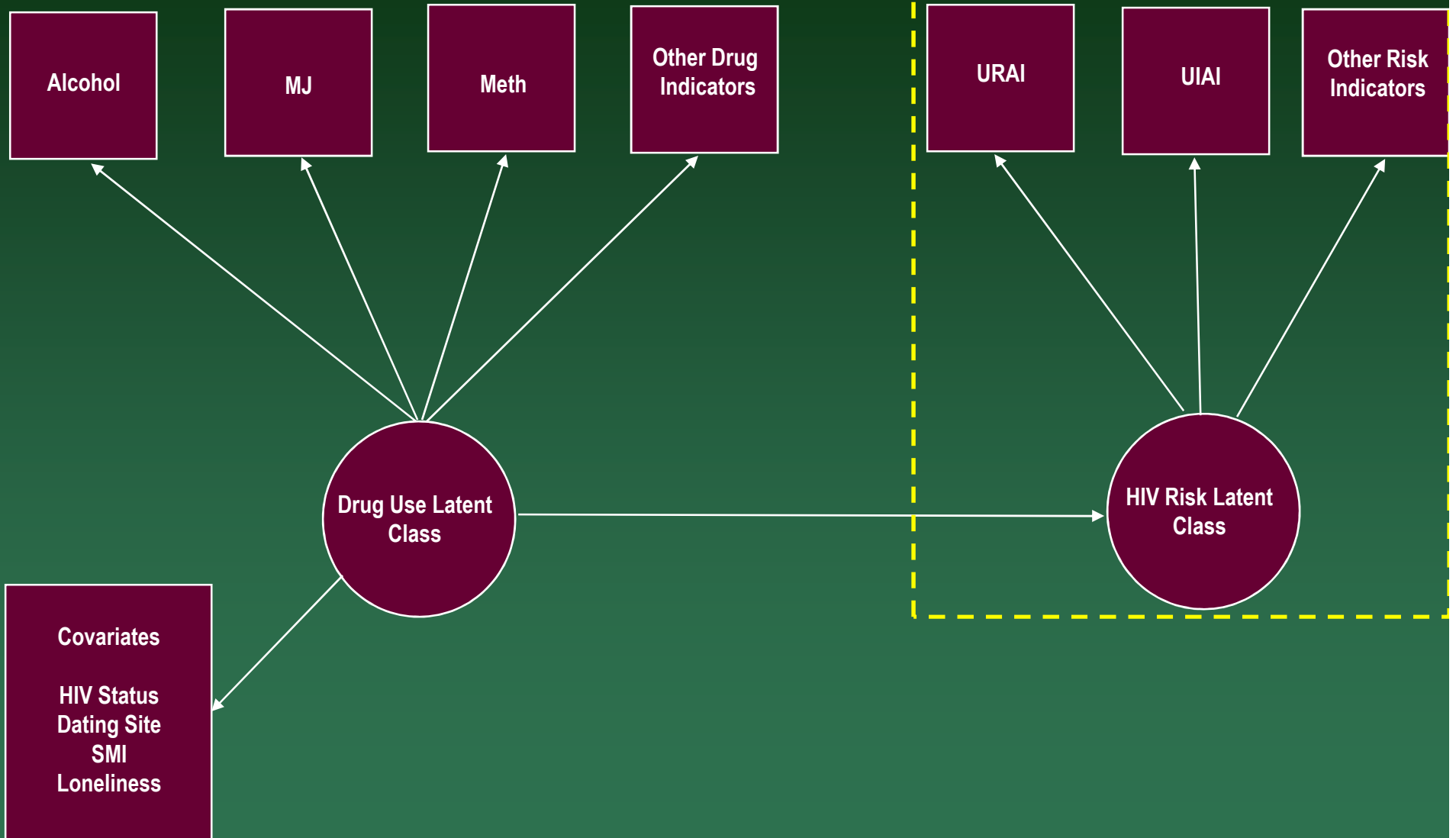
	Odds Ratios	95% CI	
<b>Meth/Party Drug Users</b>			
HIV Status	10.01	(5.32 - 18.81)	**
SMI	2.19	(1.15 - 4.19)	*
Loneliness	1.12	(0.64 - 1.97)	
Internet Dating Site	2.53	(1.43 - 4.49)	**
<b>Prescription Drug Abuse</b>			
HIV Status	0.64	(0.07 - 5.96)	
SMI	4.17	(1.76 - 9.85)	**
Loneliness	1.61	(0.59 - 4.40)	
Internet Dating Site	0.71	(0.16 - 3.30)	
<b>Alcohol - Marijuana Use</b>			
HIV Status	3.39	(1.85 - 6.21)	**
SMI	0.89	(0.48 - 1.64)	
Loneliness	1.09	(0.71 - 1.67)	
Internet Dating Site	2.94	(1.91 - 4.52)	**

# LCA Results: Internet use by LC



Participants in the party drug and heavy drug use classes are much more likely to use Internet chat rooms on a regular basis (50% in each group reporting at least weekly use).

# Latent Class Model: Estimate HIV Risk Classes

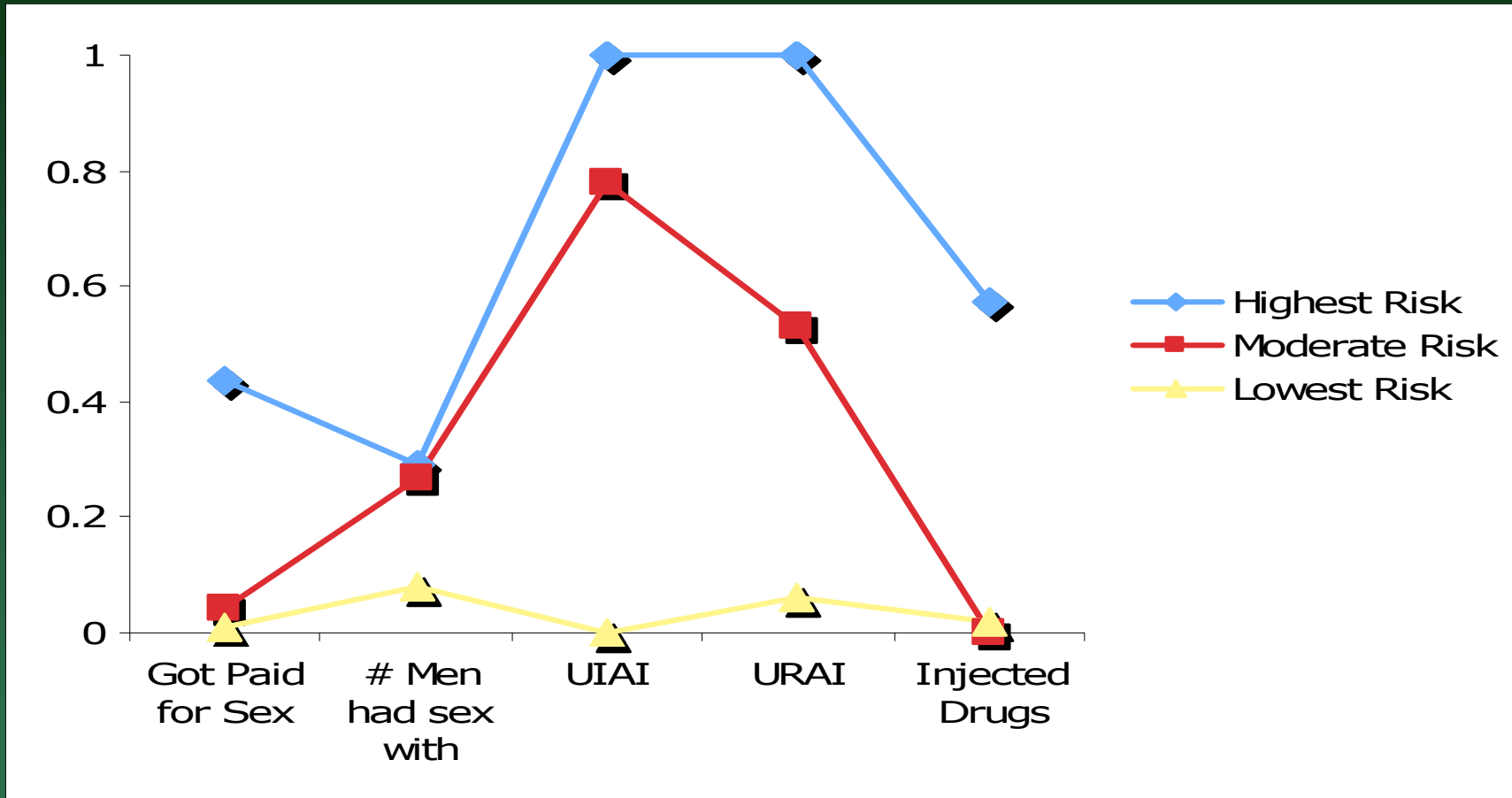


# LCA Results for HIV Risk Classes

Classes	Likelihood Ratio	Parameters	BIC	SS Adj BIC	AIC	LMR	Entropy
1	124.63	7	4808.15	4785.92	4774.04		
2	109.56	15	4456.40	4408.77	4383.31	0.0000	0.658
3	63.73	20	4004.91	3941.38	3907.44	0.0000	0.75
4	17.52	27	4043.43	3957.68	3911.85	0.2879	0.783

Low = 64%; Mod = 32%; High = 4%

## LCA Results: Estimated HIV Risk Indicator Probabilities by Latent Class



Low = 64%; Mod = 32%; High = 4%

## LCA Results: Demographics by Latent HIV Risk Class

	<b>Low</b>	<b>Moderate</b>	<b>High</b>	
	<b>(N = 619)</b>	<b>(N = 311)</b>	<b>(N = 36)</b>	
<b>Ethnicity</b>				
African-American	9.2	8.7	9.1	%
White	75.0	76.2	75.8	
Latino	8.2	10.0	8.9	
Other	7.1	5.1	6.2	
<b>Age Category</b>				
18-24	19.4	12.2	13.9	*
25-44	56.5	65.9	72.2	
45+	24.1	21.9	13.9	
<b>HIV+</b>	10.5	30.3	63.9	***
<b>Other STDs</b>	28.4	53.5	75.0	***
<b>SMI</b>	20.4	20.9	38.9	*
Dating Site	31.8	37.0	27.8	
Loneliness	41.3	45.4	60.6	

# HIV Status and Methamphetamine

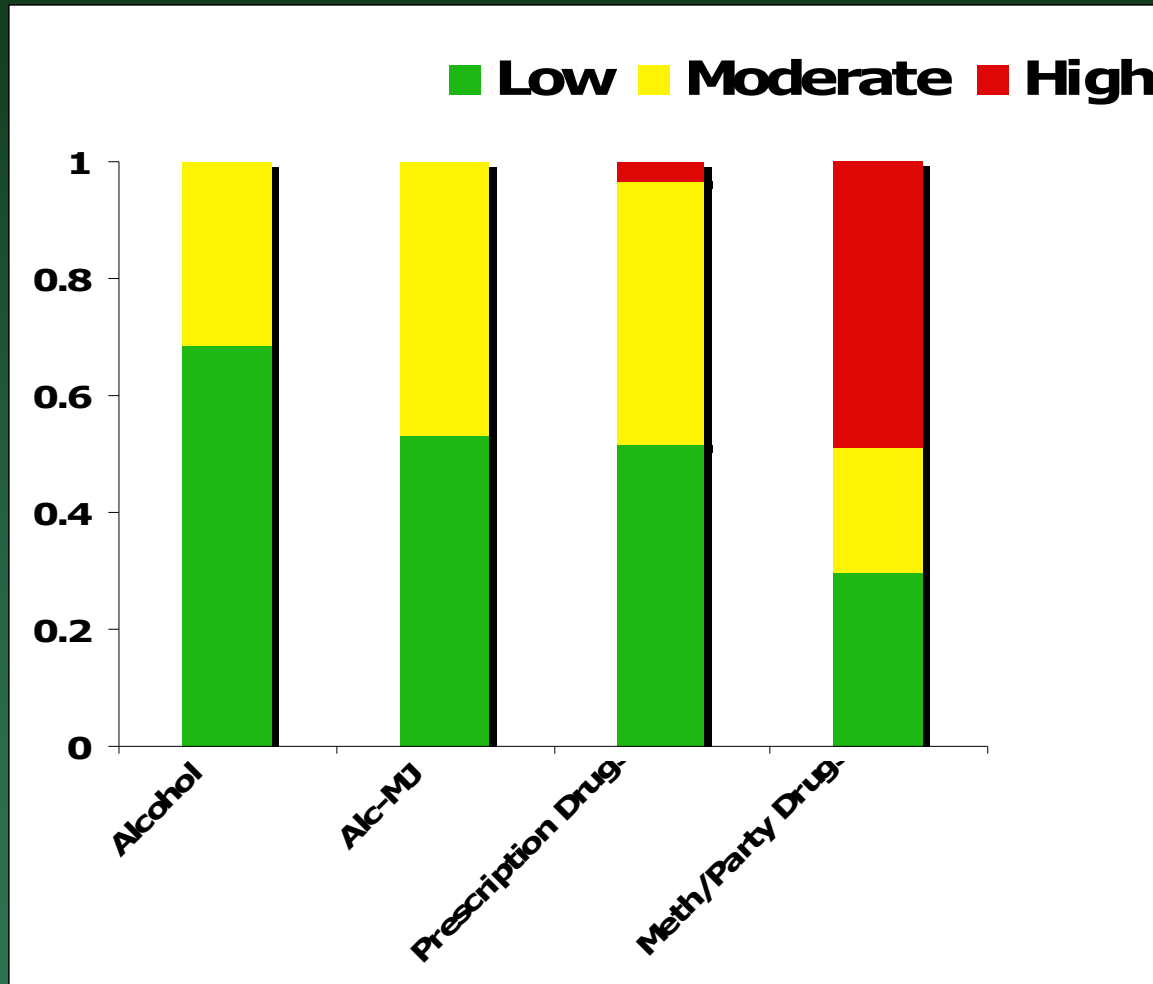
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*I myself was positive prior to my use of meth, so -- but I've heard that -- and I understand that from a lot of people, that's where they get it, is during their meth use. But I think you have to be careful in terms of blaming the meth use on it. I think -- you know, again I too, meth, crystal meth took me to places no other drug would take me, although there are certain drugs I didn't do, but crystal meth took me to sexually a very, you know, raw, animalistic, boundary-free sort of place. (Focus Group Participant, 1/15/2008)*

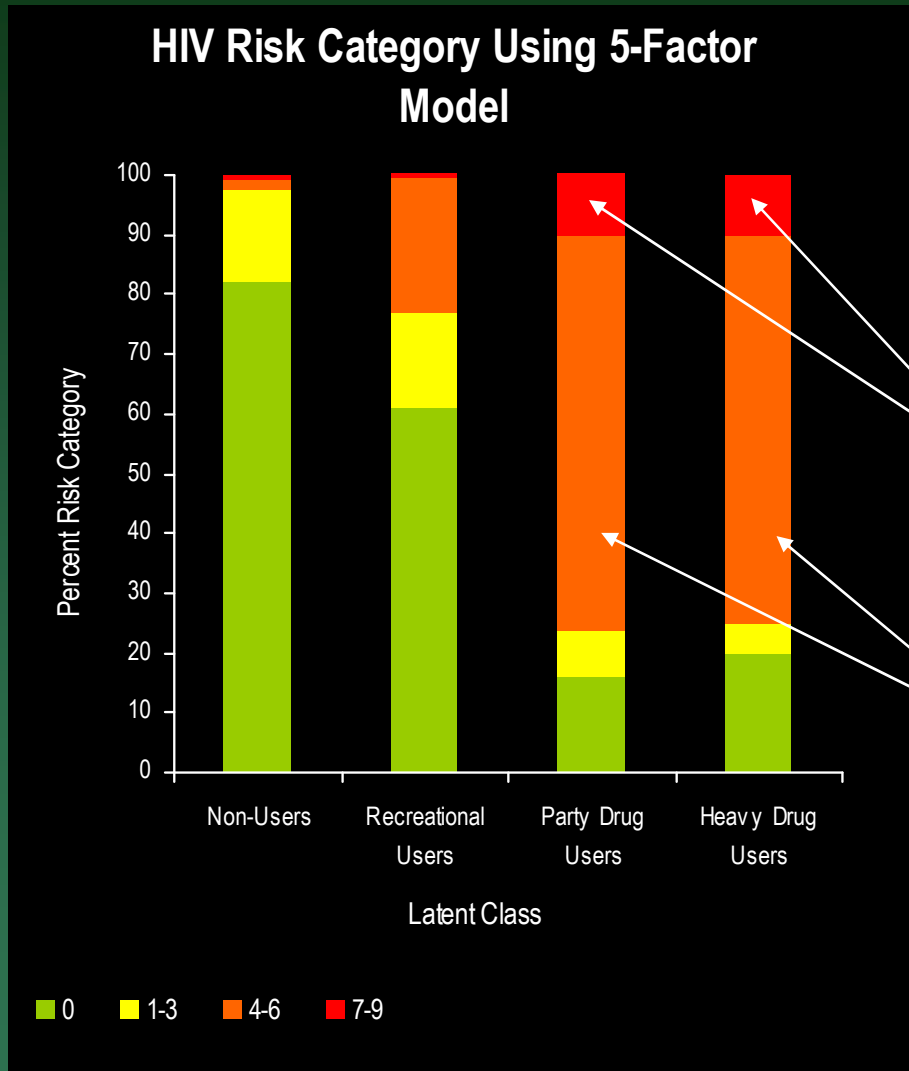
# HIV Status and Methamphetamine

□ *...everyone doing meth is positive (well almost everyone, some young crack heads will do anything for Tina including fuck bareback lie and rob shit from your house when you're not looking). Positive guys want to meet up, have fun, and forget about all the shit and baggage we are carrying... Tina helps us do that without feeling fucked up, dirty, sick, and unwanted. Every PNP guy I know is positive and not interested in partying with negative men we just want to not feel like dirty pariah outsiders and we want to fuck again and Tina helps us do that but now we are doubly hated by the gay community cause we are "dirty" and "druggies" which drives guys deeper into their Tina and HIV closets. (Internet survey respondent)*

# LCA Results: Estimated HIV Risk Class Probabilities by Latent Drug Use Class (with Covariates)



# LCA Results: Estimated HIV Risk by Latent Drug Use Class (NHBS Data)



- HIV Risk increases by Latent Class and is highest for Party Drug Users and Heavy Drug Users

Category 7-9 corresponds to an incidence rate of 11.8%

Category 4-6 corresponds to an incidence rate of 5.1% (new HIV infections per year)

# Why do MSM begin meth use?

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*...one of the things that enabled me or, I don't know, drove me away from the cocaine and more towards the meth among other things was that to me in my stilted vision, I was seeing much more of it as social opportunity to be with people, less isolating, at least in the beginning, and that's what I was longing for, was the social connectedness. (Focus Group Participant, 1/15/2008)*

# Why do MSM begin meth use?

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Methamphetamine initiation appears to be multiply determined:

- Have fun and party (perhaps majority of “casual” users)
- Feel more a part of the gay social scene (circuit parties)
- Feel more attractive (middle aged gay men)
- Because of a partner’s preferences
- To deal with isolation and loneliness
- To deal with stigma of being HIV+
- Expressly because it is socially sanctioned (“bad boy” allure)
- Curiosity

# Why do MSM begin meth use?

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- For many MSM the initial use of methamphetamine occurs in non-sexual settings and for non-sexual reasons and is not used primarily to enhance sex; however, first use can and does occur in sexually charged contexts such as bathhouses, circuit parties, and private sex parties.

*I guess I did it out of curiosity at first, and then once I took my first snort, I realized how, you know, how great it made me feel, how I could talk about anything, and then the sexual side was definitely strong too. It enhanced my sexual behavior. So it started out as a social thing and then it was more sexual. (Focus Group Participant, 1/08/2008)*

# Why do MSM begin meth use?

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- For some MSM, the fusion of compulsive sex with methamphetamine use does strengthen over time, ultimately magnifying the difficulty of overcoming addiction to the drug because giving up the drug means also having to change sexual behaviors and/or be afraid of never having good sex again without meth.

# Conclusions

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- Methamphetamine use is part of a pattern of use that frequently includes marijuana, club drugs, and poppers.
- About 30% of the men in the CRYSP target community should be targeted for a primary prevention campaign. They likely already use meth recreationally but not regularly (group 2).
- About 5% to 10% of the men in the CRYSP target community regularly use meth-poppers-club drugs and should be targeted for a secondary prevention campaign.
- Men who are HIV positive are disproportionately in the highest risk group and in the methamphetamine using group. A different prevention campaign is likely needed for HIV positive men.

# Conclusions

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- SMI is related to polypharmacy, particularly abuse of prescription drugs, but does not appear to be related specifically to meth use.
- Men who use Internet dating sites are more likely to be in the methamphetamine-poppers-club drugs group making such sites an important vector for prevention information.
- The different psychological motivations for drug initiation and use argue for targeted and tailored prevention messages that speak directly to each motivation.

# Conclusions

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- Many respondents to the surveys and in the focus groups wanted non-scare campaigns but they also wanted honest information about the effects of chronic drug use, particularly as an appeal to “gay men’s vanity”.
- The importance of social-connectedness, loneliness, and the need for meaningful relationships were also mentioned repeatedly but did not show up in our analytic models?

# Contact information:

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