

# Are interactions between substance use and place associated with sexual risk? An analysis of new partner encounters in a sample of MSM in England

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## INTRODUCTION

- Event-level studies have consistently suggested that substance use is associated with sexual risk behaviour in MSM, while associations with venue of sex are less clear
- Qualitative evidence suggests that substance use is linked to location of use in MSM
- No multiple-event studies have examined interactions between substance use before sex and venue of substance use and sex in associations with sexual risk behaviours
- This analysis focuses on new partner encounters to remove confounding due to partner familiarity or relationship with the partner

## METHODS

- The Sigma Panel 2011 collected information via web survey in 2011 and 2012
- 1,879 MSM living in England reported on up to two same-sex encounters with a new sexual partner for a total of 2,913 included encounters
- Substance use was measured for respondents as yes/no and number of substances consumed
- Location of sex was measured as either private (e.g. home), sex-on-premises venue (SOPV—e.g. sauna/bathhouse) or cruising or outdoors location
- Unprotected anal intercourse (UAI) was the sexual risk behaviour tested as an outcome
- Generalised estimating equations were used to model associations
- Substance use measures and location of sex were first tested separately, then together in a 'main effects' model, and then with interaction terms

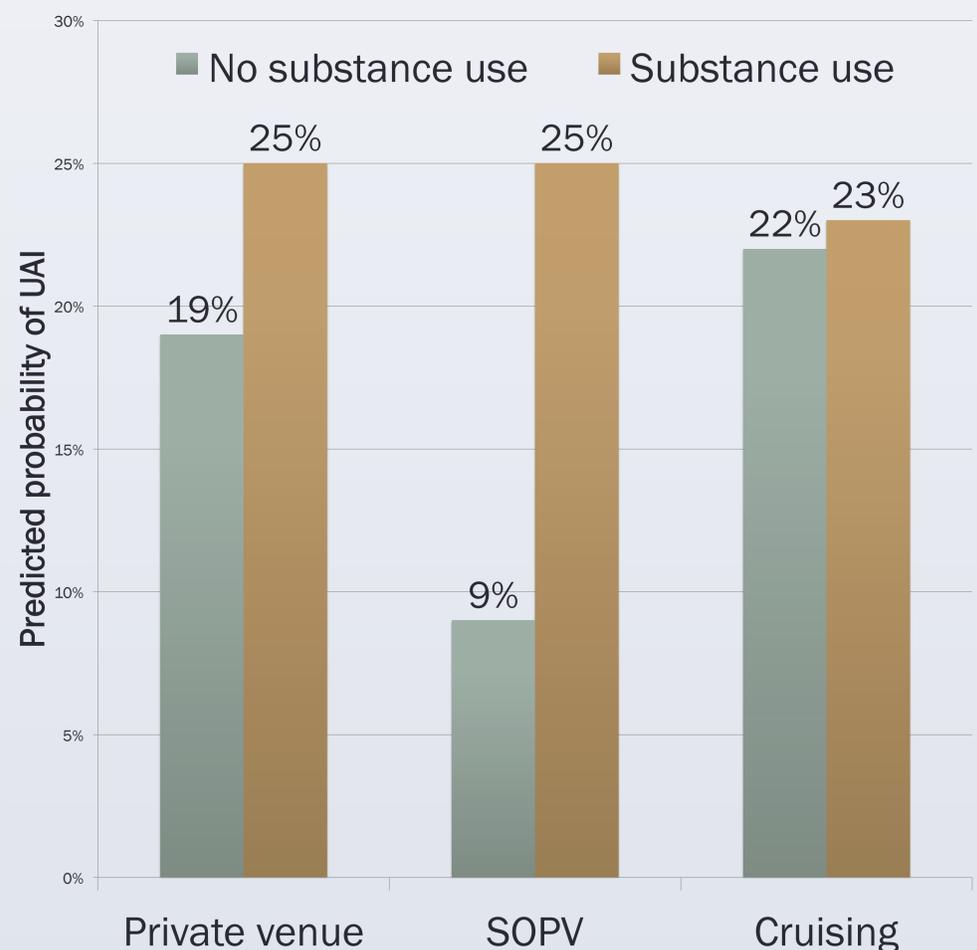
## RESULTS: Initial and main effects models

- Any substance use by respondent (OR=1.57) and number of substances used by respondent (OR=1.32) were associated with increased UAI (all  $p < 0.001$ )
- Compared to encounters in private venues, encounters in SOPVs (OR=0.69,  $p < 0.01$ ) but not in cruising locations (OR=0.99,  $p > 0.05$ ) were associated with increased UAI
- A main effects model with any substance use and location of sex and a main effects model with number of substances used and location of sex yielded associations similar in magnitude and significance to initial models tested

## RESULTS: Interaction models

- **Interaction model: any substance use.** Encounters in SOPVs and any use interacted to increase odds of UAI (OR=2.23), with main effects for use (OR=1.47) and for SOPVs (OR=0.43) also significant (all  $p < 0.05$ )
- Main effect (OR=1.21) and interaction (OR=0.73) terms for cruising locations were all  $p > 0.10$
- **Interaction model: number of substances.** An interaction model with number of substances used and location of sex did not yield a statistically significant interaction term (all  $p > 0.10$ )

Figure 1. Predicted UAI probabilities under an interaction model



## CONCLUSION

- Though SOPVs are associated with decreased UAI, marginal probabilities suggest this association diminishes with substance use
- This suggests either that substance use 'equalises' risk between venues of sex, or that substance use is associated with a much higher jump in risk in SOPVs where UAI would otherwise be rare
- Findings should inform understandings of venue-based health promotion interventions, especially in highly stimulating sexual contexts where cognitive escape is likely