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## Background

Massachusetts Department of Public Health (MDPH) conducts HIV/AIDS surveillance and behavioral risk surveillance. The data from each population-based system depicts a different profile of injecting drug users (IDU). Needle exchange user data (a provider-based system) offer yet another profile.

## Methods

MDPH reports newly diagnosed HIV cases through its HIV/AIDS Surveillance Program and identified 402 new HIV cases with IDU as single mode of exposure and 58 cases reporting both MSM and IDU exposure from 2003-2005.

The state also participates in the Centers for Disease Control and Prevention (CDC) National HIV Behavioral Risk Surveillance (NHBS) Program and surveyed 442 eligible IDU in 2005. Respondents were identified through respondent driven sampling (RDS) in which IDU recruited each other to the study. RDS is used to identify "hidden populations" and has been used to estimate the population proportion of IDU.

The state also collected information from 5348 needle exchange users (July 2004-June 2005).

## Results

Comparison of IDU Demographic Across Three Data Systems in Massachusetts

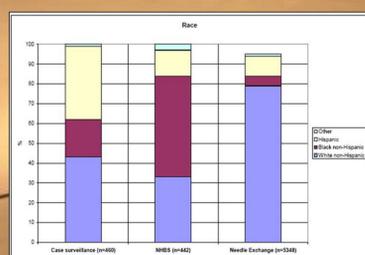
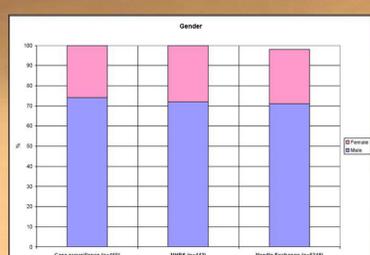
Characteristic	Case surveillance (n=460)	NHBS (n=442)	Needle Exchange* (n=5348)
<b>Gender</b>			
Male	74	72	71
Female	26	28	27
Undetermined			2
<b>Race</b>			
White non-Hispanic	43	33	79
Black non-Hispanic	19	51	5
Hispanic	37	13	10
Other	1	3	1
Undetermined			5
<b>Age Group</b>			
18-19 years	1	1	5
20-29 years	12	15	43
30-39 years	31	28	24
40-49 years	42	37	20
50+ years	14	18	9

\*Not all needle exchange users provided data.

According to case surveillance data of newly diagnosed individuals exposed through IDU or MSM/IDU, 74% were male and 26% were female. Behavioral risk data identified 72% male and 28% female IDU, and needle exchange users were 71% male and 27% female.

In case surveillance, 43% of newly diagnosed individuals exposed through IDU or MSM/IDU were White Non-Hispanic, 19% Black Non-Hispanic, 37% Hispanic and 1% Other, while NHBS found 33% White Non-Hispanic, 51% Black Non-Hispanic, 13% Hispanic and 3% Other. Needle exchange users, however, were 79% White Non-Hispanic.

Age ranges were similar for the 2 surveillance systems. Needle exchange users were much younger than IDU captured in surveillance systems.



Using Respondent Driven Sampling Analysis Tool (RDSAT) we examined transition matrices and homophily for key demographic variables including race.

The NHBS sample data was consolidated into the racial groupings of White non-Hispanic, Black non-Hispanic and Hispanic/Other. White non-Hispanic and Black non-Hispanic respondents were more likely to recruit network members of the same race while Hispanics/Others were more likely to recruit from across all races.

The RDS estimates for the IDU population race proportions were similar to the sample proportions suggesting that the sample was representative of the population.

Transition matrix and Homophily by Race

	White	Black	Hispanic / Other	Homophily
White	0.683	0.159	0.154	0.534
Black	0.103	0.756	0.141	0.511
Hispanic/Other	0.273	0.376	0.351	0.209

RDS estimate for IDU population race proportions

	White	Black	Hispanic / Other
Population Proportion	0.32	0.501	0.179

**If the RDS sample is reflective of the population proportions, why are Black non-Hispanic individuals not represented to the same extent in other data systems?**

Q. Were Black non-Hispanic NHBS respondents less likely to have visited medical providers and therefore less likely to be identified through case surveillance?

A. Overall 80% of NHBS respondents had visited a doctor in the past 12 months. There were no differences by race.

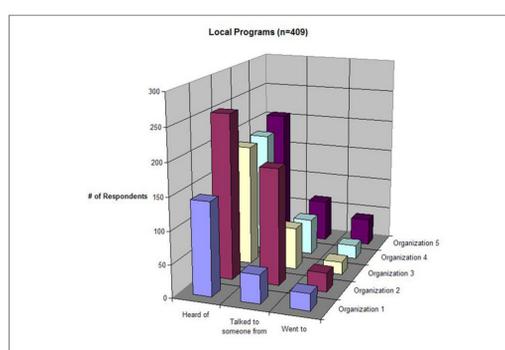
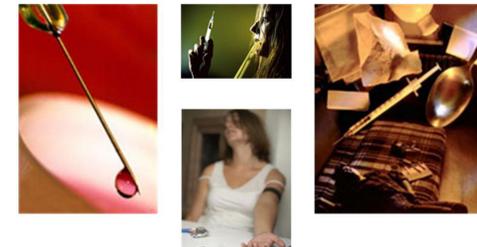
Q. Were Black non-Hispanic NHBS respondents less likely to have been tested for HIV?

A. Overall, 92% of NHBS respondents had ever been tested for HIV, and 80% had been tested in the past 12 months. 95% knew they were negative and 5% did not know their results. There were no differences by race.

Q. Were Black non-Hispanic NHBS respondents less likely to have participated in local treatment and prevention programs? (NHBS respondents were asked about familiarity with 5 specific programs)

A. Many IDU had heard about local treatment and prevention programs, a subset had talked to a staff member at the program and a smaller subset had actually participated.

Blacks/African Americans were more likely than white or Hispanic respondents to have participated in local programs. (p<.03)



## Conclusion

Each data system provides important data in designing appropriate public health prevention and education services, and each sheds light on a different aspect of the epidemic among IDU. To reach demographic and behavioral subgroups of IDU, public health officials must use information from sometimes disparate data systems. Understanding how different methods contribute to different results is key to effective service development and social marketing. RDS has identified a "hidden" population in Massachusetts.