

Injecting Drug Users (IDU) in Massachusetts: Why are Demographic Characteristics Different Across Three Public Health Data Systems?

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Background: Massachusetts Department of Public Health (MDPH) HIV conducts HIV/AIDS case 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: 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, 19% Black, 37% Hispanic and 1% Other, while NHBS found 33% White, 51% Black, 13% Hispanic and 3% Other. Age ranges were similar for the 2 surveillance systems. Needle exchange users, however, were 79% White, and were much younger than IDU captured in surveillance systems.

Comparison of IDU Demographic Across Three Data Systems in Massachusetts

	Case surveillance (n=460)	NHBS (n=442)	Needle exchange ¹ (n=5348)
M	74	72	71
F	26	28	27
undetermined			2
White non-Hispanic	43	33	79
Black non-Hispanic	19	51	5
Hispanic	37	13	10
Other	1	3	1

¹ Not all needle exchange users provided data.

undetermined			5
18-19	1	1	5
20-29	12	15	43
30-39	31	28	24
40-49	42	37	20
50+	14	18	9

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, black and Hispanic/other. Whites and blacks were more likely to recruit network members of like race while Hispanics/Others were more likely to recruit from across all races.

Transition matrix and Homophily by Race

	White	Black	Hisp/Other	Homophily
White	.683	.159	.154	.534
Black	.103	.756	.141	.511
Hisp/Oth	.273	.376	.351	.209

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

	White	Black	Hisp/Other
Population Proportion	.32	.501	.179

If the RDS sample is reflective of the population proportions, why are Blacks/African Americans not represented as fully in other data systems?

Were respondents in specific race categories more or less likely to have visited providers and therefore, more or less likely to be identified through case surveillance?

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

Were respondents in specific race categories more or less likely to have been tested for HIV?

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.

Were respondents in specific race categories more or less likely to have participated in local treatment and prevention programs? (NHBS respondents were asked about 5 specific programs)

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.

[INSERT CHART 1]

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

Conclusions: 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.