

Benjamin RH Muthambi, DrPH, MPH[^]; Nathaniel Geyer, MS^{*^}; Khaled Iskandarani, MPH^{*^}; Vladimir Krepets, PhD^{*} and Tonya Crook, MD, MS, DTM&H^{**}

Penn State College of Medicine, Departments of Public Health Sciences^{*} & Medicine^{**}; Commonwealth of Pennsylvania, Department of Health[^]

Objectives

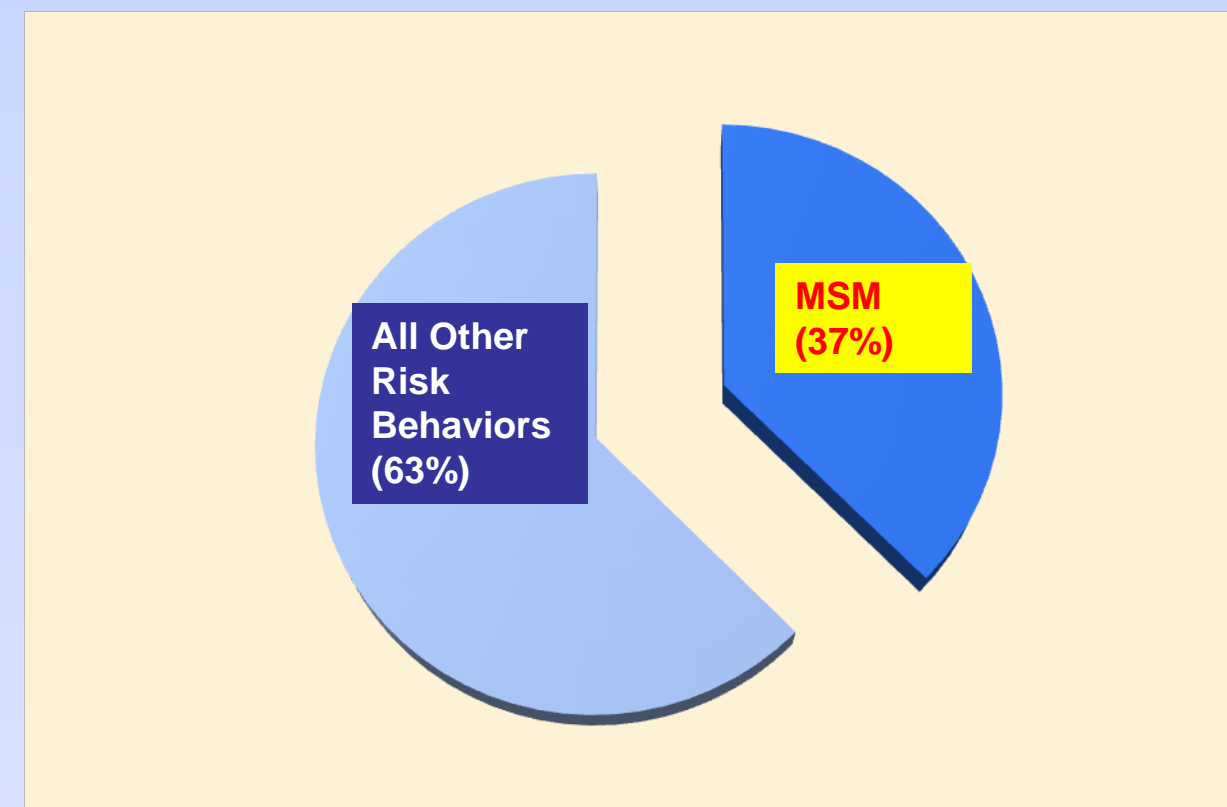
To examine the likelihood of persons diagnosed and living with HIV/AIDS (PDLWH/A) in Pennsylvania (PA) who can potentially transmit HIV through men who have sex with men, MSM [including MSM who are also Injection Drug Users, IDU, i.e. MSM-IDU] vs. all other HIV risk behaviors and how this varies according to several demographic and geospatial characteristics.

Methods

The PA HIV case surveillance dynamic cohort studied included 34,772 adults/adolescents (>13-years old at the time of HIV diagnosis, excluding those probably infected through mother-to-child-transmission) with a definitive HIV-diagnosis from January 1, 1980 who were longitudinally followed-up and presumed alive after death registry linkage as of December 31, 2010. Simple chi-square, geospatial, and adjusted/multiple logistic regression analyses were performed to estimate likelihoods of PDLWH/A who can potentially transmit HIV through MSM (vs. all other probable modes of transmission) and how this varies by current age(in 2010), race/ethnicity, sex/gender, and coalition region/HIV service area (HSA) of residence at the time of diagnosis.

Results: Simple Analyses

Figure 1. Proportion of Men who have Sex with Men (MSM) vs. All Other Risk Behaviors, 2010

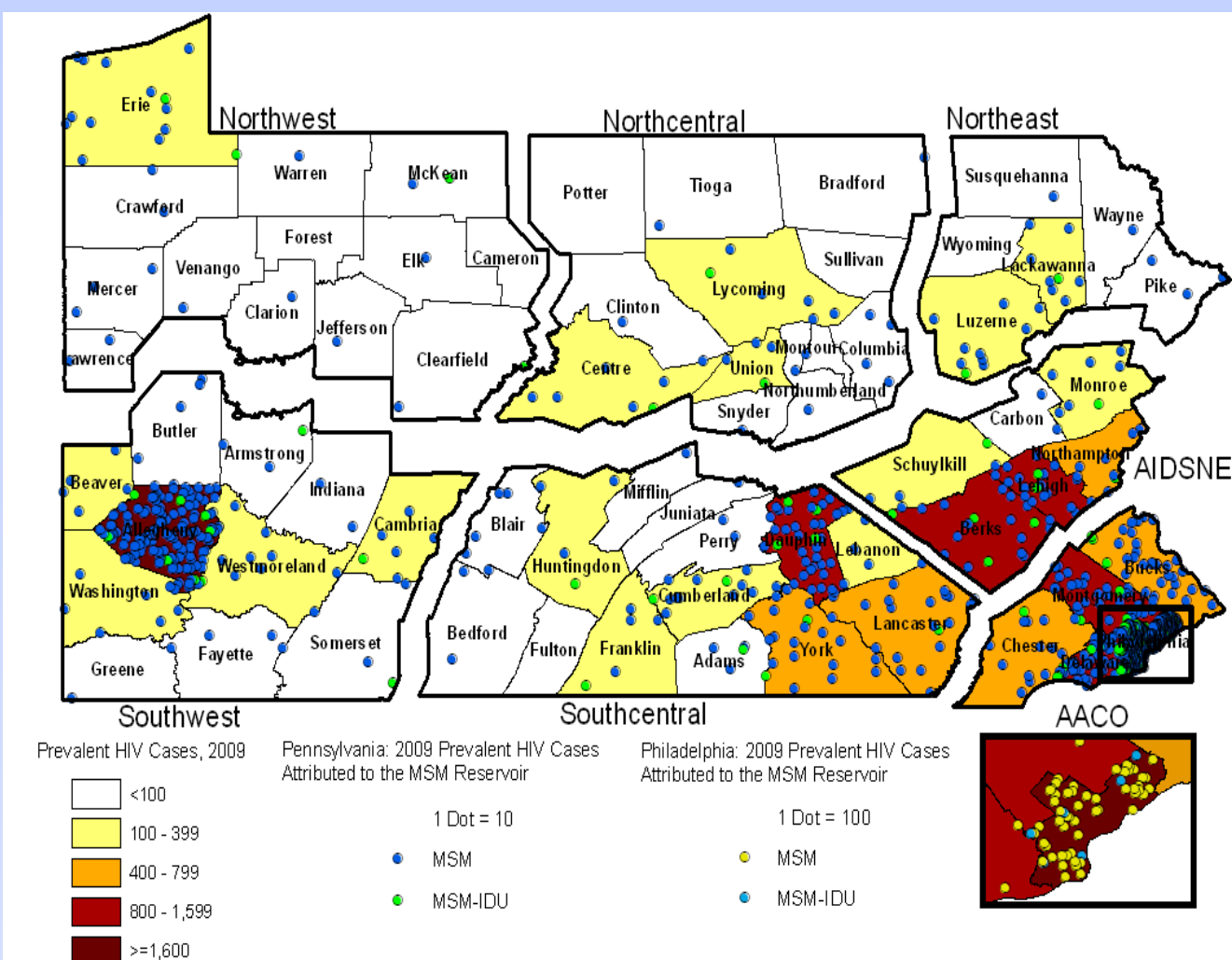


Results: Simple Analyses

Table 1. Characteristics of PDLWH/A in PA who can Potentially Transmit HIV through MSM vs. All Other Risk Behaviors, 2010

Characteristics		MSM (incl. MSM-IDU)		All Other Risk Behaviors		P-Value
		Number	Percent	Number	Percent	
	Total	13035	100	21737	100	
Current Age (Years) as of December 31, 2010	13-19	71	1	72	0	
	20-29	1566	12	1416	7	
	30-39	2086	16	3688	17	
	40-49	4742	36	7903	36	
	50-59	3389	26	6439	30	
	>=60	1181	9	2219	10	<.0001
Race/Ethnicity	White, Non-Hispanic	6538	50	4858	22	
	Black, Non-Hispanic	5245	40	12585	58	
	Hispanic	1106	8	4038	19	
	Asian	115	1	144	1	
	Other race/ethnicity	27	0	33	0	<.0001
Coalition Region (Fig 2) (HIV Service Area, HSA)	AACO	8151	63	14626	67	
	AIDSNET	694	5	2077	10	
	North-central	319	2	494	2	
	Northeast	272	2	523	2	
	Northwest	326	3	405	2	
	South-central	1343	10	2182	10	
	Southwest	1930	15	1430	7	<.0001

Figure 2. Map of the Distribution of PDLWH/A in PA from 1980-2009 by Coalition Region/HIV Service Area (HSA) Stratified by County with an Overlay of Dot-Density of PDLWH/A who are MSM and MSM-IDU cases.



Results: Adjusted Analyses

Table 2. Likelihood of PDLWH/A in PA who can Potentially Transmit HIV through MSM vs. All Other Risk Behaviors, 2010

Variable	MSM (incl. MSM-IDU) N=13035	All Other Risk Behaviors N=21737	Unadjusted Odds Ratio			Adjusted Odds Ratio		
			OR	95% CI	OR	95% CI		
Current Age (Years) as of December 31, 2010	13-29	1637 13%	1488 7%	1.00		1.00		
	30-39	2086 16%	3688 17%	0.51	0.47 0.56	0.46	0.42 0.50	
	40-49	4742 36%	7903 36%	0.55	0.50 0.59	0.45	0.41 0.49	
	50-59	3389 26%	6439 30%	0.48	0.44 0.52	0.38	0.35 0.41	
	>=60	1181 9%	2219 10%	0.48	0.44 0.53	0.38	0.34 0.42	
	Race/Ethnicity		0%					
White, Non-Hispanic	6538 50%	4858 22%	1.00		1.00			
Black, Non-Hispanic	5245 40%	12585 58%	0.31	0.30 0.33	0.28	0.27 0.29		
Hispanic	1106 8%	4038 19%	0.20	0.19 0.22	0.22	0.20 0.23		
Other race/ethnicity	142 1%	177 1%	0.42	0.35 0.52	0.37	0.30 0.46		
Coalition Region	AACO	8151 62%	14626 67%	1.00		1.00		
	AIDSNET	694 5%	2077 10%	0.60	0.55 0.66	0.53	0.48 0.58	
	North-central	319 2%	494 2%	1.16	1.00 1.34	0.85	0.73 1.00	
	Northeast	272 2%	523 2%	0.93	0.80 1.08	0.61	0.52 0.71	
	Northwest	326 2%	405 2%	1.44	1.25 1.68	0.97	0.83 1.14	
	South-central	1343 10%	2182 10%	1.10	1.03 1.19	0.84	0.78 0.91	
	Southwest	1930 15%	1430 7%	2.42	2.25 2.61	1.79	1.65 1.93	

Table 3. Race-stratified Likelihood of PDLWH/A in PA who can Potentially Transmit HIV through MSM vs. All Other Risk Behaviors, 2010

Variable	Racial/Ethnic Minorities (Blacks or Hispanics)				All Other Races/Ethnicities (Primarily Whites)				
	MSM (incl. MSM-IDU) N=6351	All Other Risk Behaviors N=16623	Adjusted Odds Ratio	95% CI	MSM (incl. MSM-IDU) N=6684	All Other Risk Behaviors N=5114	Adjusted Odds Ratio	95% CI	
Current Age (Years) as of December 31, 2010	13-29	1212 19%	1159 7%	1.00	425 6%	329 6%	1.00		
	30-39	1216 19%	2807 17%	0.43	0.38 0.47	870 13%	881 17%	0.74	0.62 0.88
	40-49	2151 34%	6041 36%	0.35	0.32 0.39	2591 39%	1862 36%	1.04	0.89 1.22
	50-59	1365 21%	4910 30%	0.28	0.25 0.30	2024 30%	1529 30%	0.98	0.84 1.15
	>=60	407 6%	1706 10%	0.23	0.21 0.27	774 12%	513 10%	1.15	0.96 1.38
Coalition Region	AACO	4820 76%	12014 72%	1.00	3331 50%	2612 51%	1.00		
	AIDSNET	267 4%	1479 9%	0.47	0.41 0.54	427 6%	598 12%	0.56	0.49 0.64
	North-central	103 2%	297 2%	0.92	0.73 1.16	216 3%	197 4%	0.87	0.71 1.06
	Northeast	67 1%	264 2%	0.63	0.48 0.83	205 3%	259 5%	0.62	0.51 0.75
	Northwest	80 1%	227 1%	0.91	0.70 1.18	246 4%	178 3%	1.11	0.91 1.35
	South-central	387 6%	1422 9%	0.70	0.63 0.79	956 14%	760 15%	0.99	0.89 1.11
Southwest	627 10%	920 6%	1.66	1.49 1.85	1303 19%	510 10%	2.01	1.79 2.25	

Summary: Adjusted Analyses

The proportion of PDLWH/A who can potentially transmit HIV through-MSM was ~37% (racial/ethnic minorities~49%). PDLWH/A who can potentially transmit HIV through-MSM were more likely to be males who: were residents of the Southwest HIV Service-Area, HSA(OR=1.79;95%CI:1.65-1.93) compared to AACO HSA (Philadelphia and surrounding four PA counties); and were less likely to be males who: a) are currently in the age-group 30 – 39 years (OR=0.46;95%CI:0.42-0.52) and successive older age groups among minorities, compared to the 13-29 years age-group, b) are racial/ethnic minorities [blacks (OR=0.28; 95%CI:0.20-0.23), Hispanics (OR=0.22; 95%CI:0.20-0.23)] and other races (OR=0.37; 95%CI:0.30-0.46) compared to whites; c) AIDSNET (Lehigh valley and surrounding areas) HSA (OR=0.53;95%CI:0.48-0.58), North-central HSA (OR=0.85;95%CI:0.73-0.998), Northeast (OR=0.61;95%CI:0.52-0.71), and South-central HSA (OR=0.84;95%CI:0.78-0.91) compared to the AACO HSA.

Conclusions

Given the high proportion presumed to know their HIV-status (~4/5), the substantial proportion of PDLWH/A constituting the potential reservoir of those who can transmit HIV through MSM (almost 2/5) suggests a major opportunity for tracking referrals, and linkage and retention in care to ensure sustained prevention/care for the subgroups identified as more likely to be in this reservoir. Program planning and resource allocation should consider these findings to assure timely access and linkage to HIV treatment and HIV prevention services for the subgroups identified.

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Footnotes:

-AACO, AIDS Activities Coordinating Office is the HIV service coalition region including Philadelphia and 4 surrounding counties in PA;