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Needle in a Haystack: The Yield of Syphilis Outreach Screening at 5 US Sites—2000 to 2007

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Abstract

Background: Screening for syphilis has been performed for decades, but it is unclear if the practice yields many cases at acceptable cost, and if so, at which venues. We attempted a retrospective study to determine the costs, yield, and feasibility of analyzing health department-funded syphilis outreach screening in 5 diverse US sites with significant disease burdens.

Methods: Data (venue, costs, number of tests, reactive tests, new diagnoses) from 2000 to 2007 were collected for screening efforts funded by public health departments from Philadelphia; New York City; Washington, District of Columbia; Maricopa County, Arizona (Phoenix); and the state of Florida. Crude cost per new case was calculated.

Results: Screening was conducted in multiple venues including jails, shelters, clubs, bars, and mobile vans. Over the study period, approximately 926 258 tests were performed and 4671 new syphilis cases were confirmed, of which 225 were primary and secondary, and 688 were early latent or high-titer late latent. Jail intake screening consistently identified the largest numbers of new cases (including 67.6% of early and high-titer late-latent cases) at a cost per case ranging from $144 to $3454. Data quality from other venues varied greatly between sites and was often poor.

Conclusions: Though the yield of jail intake screening was good, poor data quality, particularly cost data, precluded accurate cost/yield comparisons at other venues. Few cases of infectious syphilis were identified through outreach screening at any venue. Health departments should routinely collect all cost and testing data for screening efforts so that their yield can be evaluated.

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Keywords

community outreach; selective screening; syphilis

Screening of populations thought to be at increased risk for syphilis has been performed as a means of epidemic control for decades.[1,2] However, there have been relatively few evaluations of the practice; when evaluations are available, the results have been mixed. Some jail-based screening programs have reported 1.3% to 1.7% of screened inmates to have new, untreated cases of syphilis when screening was performed in communities with high rates of heterosexual syphilis transmission.[3–5] However, few cases have been found in other venues where high disease rates are expected, such as in venues catering to men who have sex with men (MSM).[6,7] In one review that covered 7 large US cities with MSM outbreaks, targeted screening in nonmedical settings only uncovered 132 new cases of syphilis out of 14 143 syphilis screening tests performed.[8] In King County, Washington, an analysis of health department-run syphilis control activities from 1998 to 2005 showed that the proportion of cases diagnosed through screening did not change despite intensified disease control efforts and dramatic increases in syphilis among MSM.[9] Between 1999 and 2003, the San Francisco Department of Public Health screened nearly 1600 men in nonclinical settings, but only 0.2% of these were found to have early syphilis infection.[10]

In the face of rising syphilis rates since 2000, the Centers for Disease Control and Prevention has sought to reframe syphilis elimination efforts but continue to encourage the public health sector to develop, implement, and evaluate syphilis control interventions in a wide variety of settings, such as jails, sex clubs, and mobile testing vans.[11] Collaboration with community-based organizations (CBOs) is strongly encouraged; in fact, Centers for Disease Control and Prevention currently mandates that 15% of the funds allocated to health department-run sexually transmitted disease control programs for syphilis elimination be allocated to CBOs.[11] Although this surely assists in forming valuable community partnerships, it may also encourage health departments to plan interventions which include serologic screening out of convenience, because 1 of the few mechanisms by which money can easily flow from a local health department to a CBO is through a laboratory contract. Moreover, though public health programs that perform such screenings are encouraged to analyze their effectiveness,[11,12] it is unclear if they do so.

Syphilis outreach screening efforts have typically been evaluated using the proportion of tests that are positive or the proportion that are new cases as the primary outcome measures. However, these measures do not take into account the time, energy, and resources that have gone into finding a single case. In the face of current widespread budgetary constraints, a simple cost accounting approach to the evaluation of outreach screening efforts would be valuable for program planning. We did a retrospective analysis of data from 2000 to 2007 to systematically evaluate the costs and yield of health department-funded syphilis outreach screening between different geographic sites and venues, explore the feasibility of collecting retrospective cost data from urban health departments, and if possible, identify the outreach screening venues that were most effective in identifying new cases in the current epidemic.

Methods

All site-specific data were retrospectively collected by local members of Centers for Disease Control and Prevention's Division of Sexually Transmitted Disease Prevention Field Epidemiology Unit. The Field Epidemiology Unit includes physicians stationed in health departments of 5 diverse US sites with significant sexually transmitted disease burdens: New York City; Washington, District of Columbia; Maricopa County, Arizona (Phoenix); Philadelphia; and the state of Florida. Data were from 2000 to 2007, and were available in varying degrees of detail at each site. Sex of cases was not available from all the sites and venues so were not included.

Outreach screening was defined as a serologic test for syphilis performed in any nonmedical setting with the participation of the local health department. Health department participation ranged from some involvement in planning to exclusive funding and execution. The principal goal, or yield, of outreach screening was defined as the number of syphilis cases that were previously unknown to the health department that were found through screening efforts. The stages of new cases were collected to calculate infectious yield. Infectious yield was defined as the number of primary and secondary (P&S) cases that were found. Data on early latent and high-titer late-latent cases (≥1:32) were collected in an attempt to measure cases that might lapse or relapse into secondary syphilis and to find infectious syphilis cases that might have been misclassified.

Participating sites were asked to categorize their outreach screening efforts into the following venues: jail intake screening, jail outreach screening, CBO outreach screening, mobile van screening, screening at bars and clubs, sex venue screening, schools/colleges, homeless shelters, substance abuse programs, and other. Jail intake screening was defined as opt-out syphilis screening performed as part of a health assessment with or without physical examination for inmates who are being processed into correctional facilities, whereas jail outreach screening was defined as any intermittent jail-based screening performed by the health department. Community-based organizations outreach screening was defined as any syphilis screening performed by a CBO using health department funds, personnel, or laboratory capacity. Mobile van screening was performed in vehicles outfitted to perform serologic testing; sex venue screening was offered at bathhouses or sex clubs catering to MSM clients.

Costs were defined as all expenses incurred by health departments in planning or executing outreach screening, and did not include costs of locating patients or treatment. Screening costs included staffing, laboratory testing, supplies, overhead, and any miscellaneous expenses. Costs were culled from grant budgets, time sheets, materials lists, and laboratory testing costs for both reactive and nonreactive serologies. Staff salaries were calculated using site-specific wage scales.

To calculate cost per case for a given venue in a given year, necessary data elements were defined as

1. total number of screening tests performed at that venue;

2. number of reactive tests (both treponemal and nontreponemal);
3. number of new cases;
4. staffing costs (in person/hours);
5. testing costs for both reactive and nonreactive tests;
6. overhead costs for the venue;
7. any miscellaneous costs; and
8. any insurance or other reimbursement for testing.

Crude costs of finding a new case of syphilis were calculated for each venue and site by (1) tabulating the total yearly net cost of a particular outreach screening venue, (2) dividing it by the number of new syphilis cases found at the venue during that year, and (3) taking the mean of the yearly costs per case. If costs for a particular venue were extrapolated from grant budgets, the percentage of time or resources specifically devoted to syphilis outreach screening at that venue (as opposed to other educational or sexually transmitted disease testing efforts) were approximated; if this was not possible, the entire sum granted for all activities at that venue was used in cost per case calculation.

Results

At all sites from 2000 through 2007, approximately 926 075 screening tests were performed and 4671 new syphilis cases were confirmed, of which 225 were P&S, 688 were early latent or high titer late latent, and the remainder late-latent cases. Of the early latent and high-titer late-latent cases, 465 (67.6%) were identified from jail intake screening. Costs per new case identified ranged from $40 to $86 579. Data quality varied a great deal between sites and venues.

Common venues

The most common screening venues were jail intake (4 sites), CBO outreach (5 sites), mobile van (3 sites), and sex venue (3 sites; Table 1). Though jail intake, mobile van, and sex venue screening were performed similarly across sites, the means of performing CBO outreach screening varied. In 1 scenario (“combined approach screening”), health department grant funds were used by CBOs for combined education and screening for syphilis and other sexually transmitted diseases. “Health department-tracked screening” was when a CBO either organized a specific screening event where costs were tracked, or when a CBO paid for all costs of outreach screening except laboratory testing (paid for by the health department). Community-based organizations screenings included events at bars and clubs, fairs, circuit parties, and gay pride events. Syphilis tests were also consistently available at some CBO offices.

Local idiosyncrasies in how activities were documented made venue data categorization difficult. For example, Florida classified the majority of its outreach screening as “DIS (disease intervention specialist)-targeted outreach” and “field bloods not related to cases.” In 2001, Florida categorized 1007 tests as “field bloods, not case-related,” and 10 244 tests as

"DIS (disease intervention specialist)-targeted outreach". More specific venue information was not available for either of these 2 categories of data, and therefore they were excluded from yield analysis.

Completeness of data

At least some data from most sites were incomplete. For some sites and years, no data on syphilis outreach screening were available. Aside from jail outreach and CBO screening, data from Florida on the requested venues only included the number of screenings and total number of tests performed. Many data from Washington, District of Columbia, were also not readily available; in some instances, health department personnel were aware that outreach screening had taken place in a particular venue during a particular year, but were unable to provide further information. In addition, New York City and Philadelphia were unable to specify the proportion of funds given to CBOs that was used for screening.

Fixed costs, or costs that do not vary according to testing volume, were difficult to obtain. Such costs include program and data management, training, travel, facility space, and equipment, and were often not calculated or recorded at the time of outreach screening. Fixed costs were taken into account in jail intake screening and in efforts that were calculated from grants, such as sex venue and mobile van screening in Philadelphia, and some CBO events in New York City.

Venue-specific results

Jail intake screening—Jail intake screening was performed in New York City, Maricopa County (Phoenix), Philadelphia, and Washington, District of Columbia. All sites performed very large numbers of screening tests; data quality from this venue was uniformly good. For example, in Maricopa County, 59 140 screening tests were performed in 2005. Of these tests, 1458 were reactive, and 131 were new cases. Only 9 of these new cases (0.015% of the total number of tests) were reported as infectious (Table 2). Indeed, very few P&S cases were reported through jail intake screening at any site. However, a total of 2241 early and high-titer late-latent cases were identified from the jail intake screening sites during the study period; 1425 (63.6%) of these were from Maricopa County (Phoenix).

The difference in cost per case calculated in this analysis reflected the varying degrees of involvement of the health department in jail intake screening programs. For example, the Philadelphia Department of Public Health used yearly grant funds of $87 000 to pay for staffing, laboratory costs, supplies, and overhead for syphilis screening in the central county correctional facility. New York City Department of Health and Mental Hygiene paid for standard laboratory testing at an outside reference laboratory in males and females, staffing and laboratory costs of rapid testing in the women's prison, and confirmation of new cases. The rapid testing was discontinued in 2007 due to low rates of syphilis in females. In contrast, Maricopa County paid for 2 full-time employee phlebotomists and epidemiologic confirmation of cases only, and in Washington, District of Columbia, the Department of Health sent disease investigators to review the test results several times per year, but otherwise provided no funds; consequently health department costs per case was low. The mean health department cost per new case for jail intake screening was: $277 (range = $144-

$514) in Washington; $381 (range = $217-$635) in Maricopa County; $3203 (range = $2874-$3454) in New York City; and $1227 (range = $658-$1990) in Philadelphia.

CBO outreach screening—Data from CBOs employing combined approach screening were among the most incomplete from all venues—in some cases, the test results or even the number of tests performed was unknown(Table 3). It was not possible to separate the screening costs from the cost of education and community awareness activities using available data, so the average calculated cost per case appeared high. When CBOs performed health department-tracked screening, the number of tests performed, screening test results, and hours worked were more likely to be known (Table 4); consequently costs per case appeared lower. Notably, in Philadelphia, data from outreach screening at 1 health-department tracked CBO site was indistinguishable in the local database from tests done in a clinic run by the same CBO; therefore this data could not be analyzed. In addition, it was difficult to track which of the CBO screenings were targeted at MSM; however, when they were, few new, infectious, or early and high-titer late-latent cases were confirmed.

Mobile unit—Philadelphia, DC, and Maricopa County used mobile testing van screening for at least 1 year. Maricopa and DC's vans provided only syphilis and human immunodeficiency virus (HIV) testing; Philadelphia's offered gonorrhea and chlamydia testing as well. Staffing and operating costs were determined from grants in Philadelphia, and from hourly rates and yearly operating costs in Maricopa; cost data from DC are unavailable. No site included initial costs of purchasing or outfitting the vehicle, as this was done prior to 2000. Mobile van screening in Maricopa discovered more new cases than did CBO screening, and it is worth noting that, though it performed a relatively small number of tests (range = 438–1172/year), the Maricopa mobile van found at least 1 infectious case per year from 2000 to 2005 at a reported average cost per case of $520 (range = $398-$712). In Philadelphia, all costs except mobile van purchase were known. However, the van was frequently inoperable due to mechanical and logistical problems, and had the lowest yield of all local screening venues—only 6 new cases were uncovered during the entire study period at an average yearly cost of approximately $86 579.

Sex venues—Screening at sex venues for MSM was performed at 3 sites: Maricopa, Philadelphia, and Washington, District of Columbia. In 2004 to 2005, the District of Columbia Department of Health funded syphilis and HIV screening, including laboratory costs, in a bathhouse once per week. A total of 179 tests were performed, yielding 8 new cases at a cost per case of $934. No infectious cases were found. Maricopa and Philadelphia both performed bathhouse screening from 2006 to 2007. In Philadelphia, health department-funded personnel were stationed at the venue 2 to 3 times per week and offered education and comprehensive sexually transmitted disease screening; tests were run at the public health laboratory. A total of 192 tests were performed over this period, yielding 4 new cases, 1 of which was a secondary case. All new cases were from 2006 when costs per case were $7451; in 2007 the effort cost $30 368 and no new cases were found. In Maricopa County, 14 screening events were held in 2006 and 3 were held in 2007, resulting in 319 tests; at each event, 2 staff members spent 2 hours performing the screening. Four new cases were

discovered, and none were classified as P&S. However, costs were low ($343 per case in 2006 and $239 to find no cases in 2007).

Discussion

In this analysis, we have attempted to standardize data and enable comparisons between different screening sites and venues by using lower cost per case as the metric of success. A notable finding of our analysis was that such a retrospective study is not highly feasible: Data collection on outreach screening was extremely variable, with marked differences in data quality at different outreach screening venues, even at the same geographic site. Data quality on costs was particularly poor: Outreach screening costs, especially fixed costs (training, supervision, program and data management, and facilities costs), were difficult to obtain and classify and were almost certainly underestimated when grant records were not used to calculate cost per case. A recent report comparing the cost-effectiveness of HIV screening in a clinic versus outreach setting estimated that fixed costs comprised 51% to 67% of the actual costs of an outreach screening effort[13]; if this were true at our sites, cost per case of at least some efforts may have been underestimated by 2 to 3 times. Therefore, accurate relative costs comparisons between CBO, mobile van, and sex venue screening could not be calculated.

Data from jail intake screening, however, was very detailed from all sites that performed it, and health department cost per case estimates could be made at these venues. Jail intake screening was a high-yield effort for all programs that performed it. These screenings tested thousands of inmates per year and consistently identified the largest numbers of new cases, including the large majority of the total confirmed early and high-titer late-latent cases. Health department cost per case ranged from $144 to $3454. The high cost per case in New York City jails is largely attributable to the higher cost of the rapid plasma reagin and large volume of persons screened. Maricopa jail intake screening identified more than 130 new syphilis cases every year, at an average cost per case of $381 (range = $217-$635). In Washington, where the jail (not the health department) paid for all testing, the health department cost per case averaged only $277 (range = $144-$514). In contrast, using a jail outreach strategy, Florida performed 15 177 screening tests on inmates at a much higher cost per case ($5128; range = $2842-$7413).

It is important to note that cost savings to the health department does not necessarily mean lower societal cost; for example, screening costs for both the jail and health department are paid for by public funds. However, since many new cases are found with jail intake screening, its public costs may be offset by reducing the costs that would be incurred in publicly funded treatment of the long-term sequelae of syphilis in these generally impoverished patients if they were identified later.[3–5,12,14] Some such cost analyses do exist: Chesson et al[15] estimate that, for every 100 infectious syphilis cases treated, $575 360 in direct and indirect societal costs are averted; however, averted cost estimates for treatment of latent syphilis are not presented.

Few infectious cases were found in any venue at any site. This is in contrast to reports from the 1990s, where outreach screenings uncovered a high proportion of infectious cases and

were thought to be effective in controlling epidemic transmission. In our study, the Maricopa mobile van seemed best at identifying infectious cases, but none were found in 2006 to 2007 (data not shown). Other sites found very few infectious cases at venues targeted to sexually active MSM. Indeed, most other reports of screenings targeted to MSM have not discovered sufficient infectious cases to slow epidemic transmission.[6–10,12,16–21] Screening may be expected to be more cost-effective when disease prevalence is high, and though syphilis has increased since 2000 (particularly in MSM), rates of P&S syphilis in the 1990s were 4 to 5 times higher than current rates. The low yield of current screening efforts may reflect differences in the population being targeted for screening as well as differences in disease burden.

Though cost data were poor, our calculated costs per case are roughly comparable with a few previous reports. Two cost comparisons of selective syphilis screening versus partner notification have been performed: In the first, screening at public clinics and correctional facilities in Houston during 1994 to 1995 was found to be slightly more cost-effective ($395 per case) than partner notification ($405 per case) for the identification of new cases of early syphilis.[22] A Multnomah County, Oregon, study performed in 1986 to 1991 found that partner notification (average $470 per case) was more cost-effective for finding early syphilis cases than selective screening (average $664 per case).[23] Unlike our analysis, however, neither of these studies calculated cost per case entirely outside of traditional medical settings; and they did not include early latent/high-titer late-latent cases in their cost calculation. Both factors may have altered the cost per case considerably. A more similar analysis was performed in 1989 by Hibbs et al,[16] who reported a cost per case of $402 when screening near crack houses with a mobile van. It is important to note, however, that the total societal benefits from screening probably go beyond just the cases detected. Jail intake and mobile van screening may also serve as a sentinel surveillance system for the spread of syphilis into populations at high risk for incarceration, such as substance abusers and female sex workers. In addition, there may be a benefit to the community education that occurs during outreach.

Limitations

The principal limitation of the study was that available data, particularly cost data, were often poor. This finding emphasizes that local health departments should employ more rigorous operational data collection if they are to evaluate program costs effectively. Cross-jurisdictional and program venue comparisons were difficult given the heterogeneity of data. Case definition data were not standardized across sites, making yield analysis difficult for certain sites and venues, and variations in data coding from site to site may have resulted in inconsistent or lost data. Neither test nor case data were stratified by sex. Costs were not standardized to dollars for one given year, and were only those incurred by health departments, rather than by society in general; there could be substantial and possibly unnecessary costs in other sectors, and these costs could not be taken into account in this analysis. Physical exams in jail may not have been comprehensive and may have resulted in underdiagnosis of infectious syphilis that was classified as early and high-titer late-latent cases, though proportionally few early latent/high-titer late-latent or infectious cases were reported through jail intake screening.[24]

Screening activities may be more cost-effective in times of high morbidity such as the early 1990s, but such strategies need to be rethought as the epidemic changes. Moreover, though resource allocation to outreach screening may be small in some cases, in this era of financial constraints, even small cost savings are important. There are 2 general strategies to limit public health sector syphilis screening costs: shifting costs to other entities, or improving screening efficiency and yield. Efficiency can be increased by routinizing the screening (as is done in jails), or by testing patients for multiple infections at the same time (like HIV, gonorrhea, and chlamydia). As shown in this analysis, screening venues also affect the yield. Managers must weigh the cost and yield of screening in settings with a high prevalence among few people (as was the case with the Maricopa mobile van) or a low prevalence among many people (like the jail). Accurate cost data can help target limited resources to where they will be of highest yield. Health departments should track cost data and monitor all syphilis outreach-screening results, including sex of cases, stage, and whether or not the cases were treated. Fixed programmatic costs can be estimated. However, variable costs, such as staffing time and venue-specific costs, should be tracked. Local programs should consider the prospective collection of these variables followed by the performance of similar analyses to determine a valid cost/yield of syphilis outreach efforts. Once cost and yield are tallied, health departments can effectively compare the yield of outreach sceening efforts to that of other programmatic efforts, and tailor their efforts accordingly.

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TABLE 1

Testing at Outreach Screening Venues, All Sites, 2000–2007[a]

	Philadelphia	Maricopa	NYC	Washington, DC	Florida
Jail intake	**~191 981**	**307 228**	**264 170** [b] *2005–2007*	**~116 000**	
CBOs	**2177**	**1493**	**3746** *2004–2007*	**128** *2007*	**6148** *2000–2001*
Mobile van	**2780**	**6450**		**195** *2004*	
Bars/clubs		**484** *2000, 2003–2007*	**887** *2004–2005*		
Sex venues	**192** *2006–2007*	**309** *2006–2007*		**179** *2004–2005*	
Homeless shelters		**3361**			
Jail outreach		**1498** *2000–2005*			**16 669** *2001–2002, 2005–2007*

Abbreviation: CBOs, community-based organizations.

[a] Total number of syphilis screening tests performed is shown in bold at the top of each cell, and years screening was performed in each venue is shown in italics below (if testing was not done every year).

[b] New York City performed testing every year; however, total numbers of tests performed only available from 2005 to 2007.

TABLE 2

Correctional Facilities Intake Screening—2000–2007[a]

	2000	2001	2002	2003	2004	2005	2006	2007
Tested, n								
DC	[b]15 000	[b]15 000	[b]13 000	[b]15 000	[b]15 000	[b]15 000	[b]13 000	[b]15 000
Maricopa	7353	23 650	55 699	57 628	44 346	59 140	22 416	36 996
NYC	N/A	N/A	N/A	N/A	N/A	86918	88 097	89155
Philadelphia	[b]13 000	[b]25 000	25 926	[b]26 000	[b]26 000	28 931	26 423	30 701
Reactive, n								
DC	1099	1191	961	1149	1168	1070	991	1078
Maricopa	269	950	1789	1754	1196	1458	682	845
NYC	N/A	N/A	N/A	N/A	N/A	3107	3825	3031
Philadelphia	378	1338	1311	1420	1379	1355	1314	1051
New cases, n								
DC	31	34	46	38	15	14	23	32
Maricopa	260	328	293	279	173	131	139	143
NYC	272	329	216	253	240	173	211	162
Philadelphia	133	95	98	97	59	44	70	52
New cases (% of tested)								
DC	[b]0.2	[b]0.2	[b]0.4	[b]0.3	[b]0.1	[b]0.1	[b]0.2	[b]0.2
Maricopa	3.5	1.6	0.5	0.5	0.4	0.2	0.6	0.4
NYC	N/A	N/A	N/A	N/A	N/A	0.2	0.2	0.2
Philadelphia	[b]1.0	[b]0.4	0.4	[b]0.4	[b]0.2	0.15	0.3	0.2
P&S, n								
DC	0	1	0	0	1	4	3	1
Maricopa	35	28	28	28	11	9	4	10
NYC	4	3	4	0	1	7	1	1
Philadelphia	4	3	1	0	1	1	1	2
Early/high titer late latent, n								
DC	17	17	23	21	8	7	8	8

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	2000	2001	2002	2003	2004	2005	2006	2007
Maricopa	225	299	263	205	136	100	95	102
NYC	53	20	26	19	25	67	91	65
Philadelphia	78	56	49	50	28	17	38	25
Cost/new case, $								
DC	213	194	144	174	440	514	313	225
Maricopa	271	217	246	258	413	635	509	497
NYC	N/A	N/A	N/A	N/A	N/A	3454	2874	3280
Philadelphia	658	952	893	903	1484	1990	1251	1684

Abbreviation: N/A, data not available.

[a]Totals include tests from both male and female inmates.

[b]Total of tests estimated from yearly number of jail admissions.

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TABLE 3

CBO Screening Using Funds for STD Education, Screening, and Other Efforts (DC, Florida, NYC, Philadelphia) 2000–2007[a]

	Combined Approach Screening—2000–2007							
	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Tested, n								
DC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	128
Florida	N/A			N/A	N/A	N/A	884	958
NYC					161[b]	726	46[c]	186[d]
Philadelphia	17	181	229	192	223	223	284	294
Reactive, n								
DC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2
Florida	N/A			N/A	N/A	N/A	N/A	N/A
NYC					15[b]	7	2[c]	≥9[d]
Philadelphia	1	6	12	11	7	2	4	4
New cases, n								
DC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
Florida	N/A			N/A	N/A	N/A	N/A	N/A
NYC					6[b]	N/A	N/A[c]	≥1[d]
Philadelphia	0	1	0	0	0	0	0	0
New cases, % of tested								
DC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
Florida	N/A			N/A	N/A	N/A	N/A	N/A
NYC					3.7[b]	N/A	N/A[c]	≥0.5[d]
Philadelphia	0	0.6	0	0	0	0	0	0
P&S, n								
DC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0
Florida	N/A			N/A	N/A	N/A	N/A	N/A
NYC					0[b]	N/A	N/A[c]	≥1[d]
Philadelphia	0	0	0	0	0	0	0	0
Cost/new case, $								

Combined Approach Screening—2000–2007

	2000	2001	2002	2003	2004	2005	2006	2007
DC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5355[e]
Florida	N/A			N/A	N/A	N/A	N/A	N/A
NYC					8067[b]	≥30 000[f]	0[c]	≤2473[d]
Philadelphia	30 312[e]	30 758	30 893[e]	30 798[e]	30 865[e]	30 853[e]	31 010[e]	31 035[e]

Abbreviations: CBO, community-based organizations; N/A, data not available/unknown.

[a] Cell is left blank if screening was not performed.

[b] Healthy Men's Night Out initiative.

[c] Gay Expo/Circle of Sisters.

[d] Gay Pride/Riis Beach/Circle of Sisters—positive results for Riis Beach only.

[e] Cost to find no new cases.

[f] $200 000 to 2 CBOs to conduct 24 events.

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TABLE 4

Health Department-Tracked CBO Screening

Health Department-Tracked CBO Screening—2000–2007[a]								
	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Tested, n								
Florida	N/A	2957	3191	N/A	N/A			
Maricopa	96	61	183	163	232	224	235	299
NYC					624	996	1151	975
Philadelphia			6	248	153	116	5	6
Reactive, n								
Florida	N/A	182	196	N/A	N/A			
Maricopa	5	8	10	17	10	4	7	3
NYC					9	4	46	48
Philadelphia			0	17	14	10	1	0
New cases, n								
Florida	N/A	12	5	N/A	N/A			
Maricopa	0	2	1	0	1	1	1	2
NYC					9	2	3	6
Philadelphia			0	2	1	0	0	0
New cases, % of tested								
Florida	N/A	0.4	0.2	N/A	N/A			
Maricopa	0	3.3	0.6	0	0.4	0.5	0.4	0.7
NYC					1.4	0.2	0.2	0.6
Philadelphia			0	0.8	0.7	0	0	0
P&S, n								
Florida	N/A	3	3	N/A	N/A			
Maricopa	0	1	0	0	0	1	1	0
NYC					0	0	0	4
Philadelphia			0	1	0	0	0	0
Cost/new case, $								
Florida	N/A	3984	8212	N/A	N/A	N/A	N/A	N/A

Health Department-Tracked CBO Screening—2000–2007[a]

	2000	2001	2002	2003	2004	2005	2006	2007
Maricopa	[b]256	212	926	[b]909	985	937	664	626
NYC	…	…	…	…	142	1003	818	351
Philadelphia			[b]14 580	7805	14 983	[b]14 880	[b]14 580	[b]14 580

Abbreviations: CBO, community-based organizations; N/A, data not available/unknown.

[a]Cell is left blank if screening was not performed.

[b]Cost to find no new cases.