

Structural Characteristics of Local Health Departments Providing HIV/AIDS Services

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Abstract

Context: HIV infection causes significant health and economic burdens in communities throughout the United States. Despite the large number of research studies focusing on the effectiveness of HIV screening and treatment, little is known about the role that local health departments (LHDs) play in community-based HIV screening and treatment.

Objective: In order to better understand HIV screening and treatment activities of LHDs in the US, we examined the structural characteristics of LHDs that do and do not provide these services.

Design: This was a cross-sectional study using data from the 2010 National Profile of Local Health Departments. Using regression modeling, we examined the relationship between the provision of HIV screening and/or treatment and various structural characteristics of LHDs.

Results: Over two-thirds of LHDs that responded to the survey reported providing HIV screening, and just under one-third (33%) of LHDs provided HIV treatment. LHDs that provided HIV screening and treatment were more likely to be engaged in other community-based activities and provide a broad range of services. In addition, they were significantly more likely to have public practitioners such as public health managers, physicians, epidemiologists, health educators, behavioral health specialists, and public health nurses. These LHDs were also more likely to employ a full time CEO and have a local board of health. Results also indicate that the provision of HIV screening and treatment is likely a function of funding level and size of the population served.

Conclusions: HIV screening and treatment services can have a significant impact on community health and overall healthcare expenditures by reducing infection rates and linking the infected to care. Many LHDs are well positioned to provide these needed services and thus, play a major role in sustaining community health; however, the organizational capacity of LHDs to provide these services must be improved.

Keywords: HIV/AIDS; Local health department; HIV/AIDS prevention; HIV/AIDS treatment; Lifestyle medicine; Organizational capacity-building

Introduction

By the end of 2010, the Centers for Disease Control and Prevention (CDC) estimated that 872,990 people in the United States were living with a diagnosis of HIV infection, which is an estimated rate of 15.8 per 100,000 people, and more people living with a diagnosis of HIV infection lived in urban areas [1,2]. Although the overall rate of HIV infection has remained fairly stable over the last few years, the rates of infection among specific high-risk groups have changed. From 2008 to 2011, the rates of HIV infection among persons aged 20-24 and 25-29 years old has increased to the point where these age groups now comprise the highest rates of HIV infection [1]. Among all racial and ethnic groups, rates of HIV infection remained stable or decreased, except for Asians whose rates increased over the last three years; especially from 2010 to 2011 when the estimated rate increased by 22.6% [1]. African Americans, however, remain significantly disproportionately affected by HIV infection and represent the racial group with the highest rates of HIV infection (60.4 per 100,000) [1]. By transmission category, the estimated number of HIV infections due to male-to-male sexual contact has increased and remains the predominant means of transmission.

CDC estimates that 18% of individuals living with HIV do not know their status, which poses a significant barrier to reducing transmission to uninfected individuals and reducing comorbidities in infected individuals. Thirty two percent of those diagnosed with HIV in 2009 progressed to AIDS within one year [3,4]. Part of this quick disease progression can be attributed to not receiving effective HIV treatment

due to lack of knowledge about their HIV status. Thus, screening for HIV is important not only to decrease the incidence by reducing transmission, but also to improve the overall health of individuals already infected.

In addition to the health burden of HIV infection, the treatment of HIV is very costly. Lifetime medical costs associated with HIV infection are estimated to be \$379,668 (in 2010 dollars) for an individual living in the US [5]. Numerous economic studies evaluating both screening and treatment have found that, despite the high cost of providing such services, they remain cost-effective [6,7].

It is well established that evidence-based behavioral interventions can reduce the risk for HIV infection among all high-risk populations including adolescents and young adults, Men Who Have Sex with Men (MSM), African Americans, Injection Drug Users (IDUs), and other groups. For example, Clark et al. found that the Adult Identity Mentoring (AIM) project is effective at modifying sexual risk behaviors

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among youth through focusing on positive future selves [8]. Other behavioral programs effective at preventing HIV among youth include SIHLE, Focus on Youth-Impact, and Street Smart. The Safety Counts program for injection drug and crack users is effective at reducing risky behaviors related to HIV transmission such as sexual behaviors, hard drug use, and risky drug injection [9]. Modelo de Intervención Psicomédica (MIP), Holistic Health Recovery and the Shield program are other effective HIV interventions or injection drug users [10]. Kalichman, Cherry & Browne-Sperling found the Nia program to be effective at increasing condom use among African American men through video-based motivational skill-building [11]. Diallo et al. found that African American women participating in the single-session, Healthy Love workshop reported increased condom use and HIV testing compared to those who do not participate in the workshop [12]. Other HIV prevention interventions for African Americans, such as SISTA, Sister to Sister, Focus on the Future (FOF), and Video Opportunities for Innovative Condom Education & Safer Sex (VOICES), are also very effective [10]. Effective interventions have also been developed for the MSM population. These include the Mpowerment project, d-Up, Personalized Cognitive Counseling (PCC) and Many Men, Many Voices (3MV). Kegeles, Hays & Coates found the Mpowerment project to be effective at increasing the proportion of men engaging in protected anal intercourse through peer-led outreach and a publicity campaign. Finally, just knowing one's HIV status has been shown to significantly reduce high-risk sexual activities in infected individuals [13,14]. There are clearly a number of behavioral interventions effective at preventing HIV, even for high-risk populations.

Local health departments (LHDs) are critical to providing primary and secondary prevention to millions of Americans. During 2010, state and local health departments provided HIV screening to approximately 3,220,623 individuals and of those tested, 0.78% were confirmed positive cases. Of those who tested positive, 71% were linked to medical care, 59% were referred to HIV prevention services, and 73% were referred to HIV partner services [15].

Despite the large number of research studies focusing on the effectiveness of HIV screening and treatment, little is known about the activities of LHDs in regards to HIV screening and treatment. Much of the research regarding the intersection of LHDs and HIV has focused on the cost-effectiveness of federally-funded screening programs such as the Expanded Testing Initiative. In order to better understand HIV screening and treatment activities of LHDs in the U.S., we examined the structural characteristics of LHDs that do and do not provide these services.

Materials and Methods

Measures

This was a cross-sectional study using data from the 2010 National Profile of Local Health Departments. The National Profile of Local Health Departments is an online, biannual survey sent to all U.S. public health departments by the National Association of County and City Health Officials (NACCHO) and is co-funded by the CDC and Robert Wood Johnson Foundation. The National Profile asks questions about local health department organization, financial information, and activities. The survey consists of a core questionnaire and two additional modules that were sent to a statistically significant subsample of LHDs. Only data extracted from the core questionnaire were used in this analysis. The public use data was obtained from the Inter-University Consortium for Political and Social Research (ICPSR) in accordance with all relevant policies and procedures.

The survey was sent to all LHDs in the U.S., which was determined to be 2,565 by the NACCHO survey staff. LHDs were defined as "an administrative or service unit of local or state government, concerned with health, and carrying some responsibility for the health of a jurisdiction smaller than the state level". Health departments from Rhode Island and Hawaii were excluded from the survey because state health departments operate on behalf of LHDs; thus, only state-level data were available. A total of 2,107 LHDs responded to the survey, for an overall response rate of 82% [16]. The response rate per state ranged from 41% to 100%.

Outcome variables of interest

Screening for HIV/AIDS was determined from a question asking participating LHDs to "check all that apply" regarding how screening is provided, if at all. The options were: "Performed by LHD directly", "Contracted out by LHD", or "Performed NEITHER by LHD directly, NOR contracted out by LHD." These responses were then recoded into a dichotomous variable as "Yes, performed" for any respondent that checked performed directly or contracted out, and "Did not perform" for respondents checking the neither direct nor contracted answer.

Providing treatment for HIV/AIDS was determined from a question asking participating LHDs to "check all that apply" regarding how treatment is provided, if at all. The options were: "Performed by LHD directly", "Contracted out by LHD", or "Performed NEITHER by LHD directly, NOR contracted out by LHD." As above, these responses were then recoded into a dichotomous variable as "Yes, performed" for respondents that checked performed directly or contracted out, and "Did not perform" for respondents checking the neither direct nor contracted answer.

Descriptive and predictor variables of interest

Other variables included in the analysis included demographic-type variables and structural characteristics that were used as predictors in our regression models. These variables included jurisdiction, service area, population size, type of local health board, staff composition, work status of director, other services provided, and participation in community health assessments and improvement plans. Jurisdiction was defined as the type of area for which the LHD provides services and included the response options of city, city-county, county, multi-county and multi-county. Service area was defined as region, county, and neither region nor county. Population size was defined as the number of individuals served by the LHD and categorized as <25,000, 25,000-49,999, 50,000-99,999, 100,000-249,999, 250,000-499,999, 500,000-999,999 and 1,000,000+ people. Type of local health board and staff composition was dichotomously categorized (yes=1 and no=0) as having one more local boards of health and if they currently employ staff any of the following classifications: public health managers, public health nurses, public health doctors, epidemiologists, health education specialists, and behavioral health specialists. The work status of the director was assessed by the question "What is the work status for the top executive?" and was recoded into full (=1) or part-time (=0) work status.

The survey also asked respondents about the types of services provided by the LHD. The services of interest in this analysis included: family planning, pre-natal care, obstetrical care, primary care, substance abuse prevention, lab services, insurance outreach and advocacy services, substance abuse services, communicable disease epidemiology, chronic disease epidemiology, behavioral risk factor surveillance, syndromic surveillance, unplanned pregnancy prevention, school-based clinical services, and school health programs.

These variables were recoded from categorical to dichotomous variables (does provide and does not provide) using the same procedure for the outcome variables described above.

Lastly, participation in community health assessments and improvement plans was determined by the questions, “Has a community health assessment been completed for your LHD’s jurisdiction?” and “Has your LHD participated in developing a health improvement plan for your community?” to which respondents checked one of the following responses: “yes, within last 3 years”, “yes, more than 3 but less than 5 years”, “yes, more than 5 years”, “no, but plan to within the next year”, “no”.

Analysis

Appropriate survey weights that account for nonresponse were applied in all analyses using SAS 9.2 software [17]. Weighted sample proportions and 95% confidence intervals (CI) reflecting non-response among population categories and missing data were obtained. Bivariate logistic regression models were used to determine odds ratios (ORs) and 95% CIs for each outcome of interest (HIV screening and HIV treatment) with all levels of each characteristic. This project was approved by the Institutional Review Board at Kent State University.

Results

Table 1 presents the weighted sample proportions of LHDs that do and not provide HIV screening by characteristic. Over two-thirds of LHDs that responded to the survey reported providing HIV screening directly, through contracts, or some combination. Of the LHDs that provide HIV screening, 45% also provide HIV treatment. Only 1% of LHDs that provide HIV treatment do not provide HIV screening. The majority of LHDs that provide HIV screening also provide STD screening (95.1%) and STD treatment (89.6%).

The majority (82%) of LHDs providing HIV screening had county-level jurisdiction. There were no LHDs with over a million population served that did not provide HIV screening. Roughly 95% of LHDs providing HIV screening also employed a full-time CEO, compared to 81% of those that do not provide HIV screening. A greater proportion of LHDs providing HIV screening also utilize public health practitioners (nurses, doctors, managers, epidemiologists, health educators, and health behavior specialists) compared to those that do not provide HIV screening. Similarly, a greater proportion of LHDs providing HIV screening also provided a greater proportion of all other related services, with the exception of school-based clinics. Finally, a higher proportion of LHDs providing HIV screening also completed a community health assessment in the last 3 years (46% vs. 35%) and completed a community health plan in the last 3 years (40% vs. 32%).

Table 2 presents the weighted sample proportions of LHDs that do and do not provide HIV treatment by characteristic. Just under one-third (33%) of LHDs provided HIV treatment compared to 67% that did not provide HIV treatment. Ninety nine percent of the LHDs that provide HIV treatment also provide HIV screening, but 54% of the LHDs that provide HIV screening do not provide HIV treatment. Of LHDs providing HIV treatment, 98% also provided STD screening and STD treatment.

Just over 37% of LHDs that provide HIV treatment had a local board of health compared to nearly 18% of LHDs that do not provide HIV treatment. Of LHDs providing HIV treatment, 96% employed a full-time CEO, compared to 88% of LHDs that do not provide HIV treatment. As with HIV screening, LHDs that provide HIV treatment also utilize a greater proportion of public health practitioners than

Characteristic	Does Not Provide HIV Screening n=629	Provides HIV Screening n=1444
HIV Treatment		
Does Not Provide	98.1 (97.0, 99.2)	52.2 (49.7, 54.9)
Does Provide	1.1 (0.3, 1.9)	44.9 (42.3, 47.5)
STD Screening		
Does Not Provide	84.0 (81.2, 86.9)	4.3 (3.2, 5.3)
Does Provide	15.7 (12.8, 18.5)	95.1 (94.0, 96.3)
STD Treatment		
Does Not Provide	86.6 (84.0, 89.3)	9.6 (8.0, 11.1)
Does Provide	12.7 (10.1, 15.3)	89.6 (88.0, 91.2)
HD Type		
City	31.1 (27.5, 34.8)	6.3 (5.0, 7.5)
City & County	0	0.3 (0.0, 0.5)
County	56.3 (52.4, 60.2)	81.7 (79.7, 83.6)
Multi-City	7.1 (5.1, 9.0)	2.2 (1.5, 3.0)
Multi-County	5.5 (3.8, 7.3)	9.6 (8.1, 11.1)
Population Category		
<25,000	56.8 (53.0, 60.7)	34.3 (31.7, 36.8)
25,000-49,999	22.9 (19.7, 26.1)	20.1 (18.0, 22.1)
50,000-99,999	12.5 (9.9, 15.0)	16.1 (14.2, 18.0)
100,000-249,999	5.7 (4.1, 7.4)	15.4 (13.6, 17.2)
250,000-499,999	1.1 (0.3, 1.9)	6.9 (5.7, 8.2)
500,000-999,999	0.9 (0.2, 1.6)	4.8 (3.8, 5.9)
1,000,000+	0	2.4 (1.6, 3.1)
Local Board of Health		
No	84.4 (81.6, 87.3)	71.0 (68.6, 73.3)
Yes	15.6 (12.7, 18.4)	28.4 (26.1, 30.8)
CEO Employment		
Full-time	81.1 (78.0, 84.2)	94.7 (93.5, 95.9)
Part-time	17.4 (14.4, 20.4)	4.7 (3.6, 5.8)
PH Managers		
Not Available	18.6 (15.5, 21.8)	12.5 (10.7, 14.2)
Available	75.3 (71.9, 78.8)	82.7 (80.7, 84.7)
PH Nurses		
Not Available	10.3 (7.9, 12.7)	0.7 (0.3, 1.2)
Available	84.7 (81.9, 87.6)	97.0 (96.1, 97.9)
PH Physicians		
Not Available	66.8 (63.1, 70.5)	46.5 (43.9, 49.0)
Available	15.8 (13.0, 18.7)	44.0 (41.4, 46.6)
Epidemiologists		
Not Available	70.3 (66.7, 73.9)	58.8 (56.3, 61.4)
Available	11.2 (8.8, 13.6)	29.8 (27.4, 32.1)
Health Educators		
Not Available	50.6 (46.6, 54.5)	32.9 (30.4, 35.4)
Available	32.7 (29.0, 36.3)	58.2 (55.7, 60.8)
Health Behavior Specialists		
Not Available	74.4 (71.0, 77.9)	62.0 (59.5, 64.5)
Available	5.1 (3.4, 6.8)	27.3 (25.0, 29.6)
Family Planning Services		
Does Not Provide	80.6 (77.5, 83.7)	21.3 (19.2, 23.4)
Does Provide	18.7 (15.6, 21.7)	77.5 (75.4, 79.7)
Prenatal Services		
Does Not Provide	77.7 (74.4, 80.9)	54.1 (51.5, 56.7)
Does Provide	21.2 (18.0, 24.3)	43.2 (40.6, 45.8)
Obstetrical Services		
Does Not Provide	94.8 (93.0, 96.5)	72.7 (70.4, 75.0)
Does Provide	4.3 (2.7, 5.9)	22.6 (20.4, 24.7)
Primary Care Services		
Does Not Provide	93.7 (91.8, 95.7)	76.7 (74.5, 78.9)
Does Provide	5.0 (3.3, 6.7)	20.2 (18.1, 22.3)

Substance Abuse Services		
Does Not Provide	90.0 (87.6, 92.3)	81.6 (79.6, 83.6)
Does Provide	8.8 (6.6, 11.0)	14.6 (12.8, 16.4)
Laboratory Services		
Does Not Provide	75.4 (72.1, 78.8)	43.2 (40.6, 45.8)
Does Provide	22.5 (19.2, 25.7)	52.8 (50.2, 55.4)
Insurance Outreach/ Enrollment		
Does Not Provide	66.7 (63.0, 70.4)	38.4 (35.9, 40.9)
Does Provide	31.9 (28.2, 35.5)	58.0 (55.4, 60.6)
School-Based Clinics		
Does Not Provide	53.9 (50.0, 57.8)	59.4 (56.8, 61.9)
Does Provide	45.8 (41.9, 49.7)	37.5 (34.9, 40.4)
School Health		
Does Not Provide	63.9 (60.1, 67.7)	55.8 (53.2, 58.4)
Does Provide	35.0 (31.3, 38.8)	40.2 (37.6, 42.7)
Substance Abuse Prevention		
Does Not Provide	77.7 (74.7, 81.1)	61.2 (58.7, 63.8)
Does Provide	21.5 (18.3, 24.7)	33.9 (31.4, 36.3)
Unintended Pregnancy Prevention		
Does Not Provide	73.3 (69.8, 76.8)	32.1 (29.7, 34.5)
Does Provide	25.6 (22.2, 29.1)	64.9 (62.5, 67.4)
Communicable Disease Epidemiology		
Does Not Provide	10.3 (7.9, 12.7)	3.1 (2.2, 4.0)
Does Provide	89.3 (86.8, 91.7)	96.1 (95.0, 97.1)
Chronic Disease Epidemiology		
Does Not Provide	67.4 (63.7, 71.1)	49.3 (46.7, 51.9)
Does Provide	32.0 (28.4, 35.7)	47.5 (44.9, 50.1)
Behavior Risk Factor Surveillance		
Does Not Provide	71.3 (67.8, 74.9)	51.4 (48.8, 54.0)
Does Provide	27.4 (23.9, 30.9)	44.5 (42.0, 47.1)
Syndromic Surveillance		
Does Not Provide	67.7 (64.0, 71.4)	42.7 (40.2, 45.3)
Does Provide	31.0 (27.4, 34.7)	53.3 (50.7, 55.9)
Community Health Assessment		
Yes, within last 3 years	34.8 (31.1, 38.6)	46.3 (43.7, 48.9)
Yes, between 3 and 5 years	19.2 (16.1, 22.2)	15.7 (13.8, 17.6)
Yes, more than 5 years	14.6 (11.8, 17.3)	15.5 (13.6, 17.3)
No, but plan to in next year	7.3 (5.2, 9.4)	10.0 (8.5, 11.6)
No	22.6 (19.3, 26.0)	12.1 (10.4, 13.8)
Community Health Plan		
Yes, within last 3 years	31.9 (28.2, 35.5)	39.8 (37.3, 42.4)
Yes, between 3 and 5 years	14.3 (11.5, 17.0)	11.7 (10.1, 13.4)
Yes, more than 5 years	7.7 (5.6, 9.8)	8.8 (7.3, 10.2)
No, but plan to in next year	13.8 (11.1, 16.5)	17.4 (15.4, 19.3)
No	30.3 (26.7, 33.9)	21.5 (19.4, 23.6)

*Note: Columns may not total to 100% due to rounding and accounting for missing values.

Table 1: Weighted Proportions and 95% Confidence Intervals of Selected Characteristics of LHDs Providing HIV Screening Services.

LHDs not providing HIV treatment. Similarly, LHDs that provide HIV treatment also provide higher proportions of all related services compared to LHDs that do not provide HIV treatment. Finally, a higher proportion of LHDs that provide HIV treatment also completed a community health assessment in the last 3 years (47% vs. 41%) and completed a community health plan in the last 3 years (42% vs. 35%).

Table 3 presents ORs and 95% CIs for LHDs that provide HIV

screening or HIV treatment (ref.=does not provide) by characteristic. LHDs that provided screening were 79 times (95% CI=37.0, 168.4) more likely to provide HIV treatment than those who did not provide HIV

Characteristic	Does Not Provide HIV Treatment n=1367	Provides HIV Treatment n=662
HIV Screening		
Does Not Provide	46.3 (43.6, 49.0)	1.1 (0.3, 1.9)
Does Provide	53.6 (51.0, 56.3)	98.9 (98.1, 99.7)
STD Screening		
Does Not Provide	42.8 (40.2, 45.5)	1.8 (0.8, 2.9)
Does Provide	57.0 (54.3, 59.6)	97.5 (96.3, 98.7)
STD Treatment		
Does Not Provide	50.1 (47.5, 52.8)	1.2 (0.4, 2.1)
Does Provide	49.9 (47.2, 52.5)	98.3 (97.3, 99.3)
HD Type		
City	16.4 (14.4, 18.4)	9.1 (6.9, 11.3)
City & County	0	0.6 (0.0, 1.2)
County	72.5 (70.2, 74.9)	75.4 (72.1, 78.6)
Multi-City	3.8 (2.8, 4.8)	3.7 (2.3, 5.1)
Multi-County	7.2 (5.9, 8.5)	11.3 (8.9, 13.6)
Population Category		
<25,0000	46.1 (43.5, 48.8)	30.4 (26.7, 34.1)
25,000-49,999	22.1 (20.0, 24.3)	18.5 (15.5, 21.4)
50,000-99,999	14.4 (12.6, 16.3)	16.5 (13.7, 19.4)
100,000-249,999	11.1 (9.5, 12.6)	15.3 (12.7, 17.9)
250,000-499,999	3.6 (2.6, 4.5)	8.5 (6.4, 10.6)
500,000-999,999	2.2 (1.5, 2.9)	6.8 (5.0, 8.6)
1,000,000+	0.5 (0.2, 0.8)	4.0 (2.6, 5.4)
Local Board of Health		
No	82.0 (80.0, 84.1)	61.9 (58.2, 65.7)
Yes	17.8 (15.7, 19.8)	37.4 (33.7, 41.1)
CEO Employment		
Full-time	88.0 (86.3, 89.8)	95.6 (93.9, 97.2)
Part-time	10.9 (9.2, 12.6)	3.8 (2.3, 5.4)
PH Managers		
Not Available	15.7 (13.7, 17.6)	10.3 (7.9, 12.7)
Available	78.6 (76.4, 80.9)	85.4 (82.7, 88.2)
PH Nurses		
Not Available	5.2 (3.9, 6.4)	1.0 (0.2, 1.8)
Available	91.4 (89.9, 93.0)	96.4 (95.0, 97.9)
PH Physicians		
Not Available	59.5 (56.9, 62.0)	38.4 (34.6, 42.2)
Available	27.3 (25.0, 29.7)	52.3 (48.5, 56.1)
Epidemiologists		
Not Available	66.5 (64.0, 69.0)	53.4 (49.5, 57.2)
Available	18.8 (16.8, 20.8)	35.8 (32.2, 39.4)
Health Educators		
Not Available	43.1 (40.4, 45.7)	28.4 (24.9, 31.9)
Available	44.8 (42.2, 47.4)	62.2 (58.5, 66.0)
Health Behavior Specialists		
Not Available	69.6 (67.1, 72.0)	58.5 (54.7, 62.3)
Available	15.1 (13.2, 16.9)	31.5 (28.0, 35.0)
Family Planning Services		
Does Not Provide	52.0 (49.4, 54.7)	15.6 (12.8, 18.4)
Does Provide	47.6 (44.9, 50.3)	83.1 (80.2, 85.9)
Prenatal Services		
Does Not Provide	70.5 (68.0, 72.9)	43.9 (40.1, 47.8)
Does Provide	28.8 (26.4, 31.2)	53.1 (49.3, 57.0)
Obstetrical Services		
Does Not Provide	88.9 (87.2, 90.5)	62.2 (58.4, 65.9)

Does Provide	9.8 (8.2, 11.4)	32.6 (29.0, 36.2)
Primary Care Services		
Does Not Provide	91.3 (89.8, 92.8)	64.6 (61.0, 68.3)
Does Provide	7.8 (6.4, 9.2)	32.0 (28.4, 35.6)
Substance Abuse Services		
Does Not Provide	89.7 (88.1, 91.3)	74.5 (71.1, 77.8)
Does Provide	9.3 (7.8, 10.9)	20.9 (17.8, 24.0)
Laboratory Services		
Does Not Provide	62.5 (59.9, 65.0)	34.6 (31.0, 38.3)
Does Provide	35.6 (33.0, 38.1)	60.9 (57.1, 64.6)
Insurance Outreach/ Enrollment		
Does Not Provide	51.8 (49.2, 54.5)	37.7 (34.0, 41.4)
Does Provide	46.7 (44.0, 49.3)	57.4 (53.6, 61.2)
School-Based Clinics		
Does Not Provide	59.4 (56.7, 62.0)	54.7 (50.9, 58.5)
Does Provide	39.7 (37.1, 42.3)	41.3 (37.5, 45.1)
School Health		
Does Not Provide	63.3 (60.7, 65.9)	49.0 (45.1, 52.8)
Does Provide	35.3 (32.8, 37.9)	45.9 (42.1, 49.7)
Substance Abuse Prevention		
Does Not Provide	72.8 (70.4, 75.1)	54.7 (50.9, 58.5)
Does Provide	25.7 (23.4, 28.0)	39.8 (36.1, 43.6)
Unintended Pregnancy Prevention		
Does Not Provide	53.2 (50.6, 55.9)	28.8 (25.3, 32.3)
Does Provide	45.3 (42.7, 48.0)	67.9 (64.3, 71.5)
Communicable Disease Epidemiology		
Does Not Provide	6.6 (5.2, 7.9)	2.8 (1.5, 4.1)
Does Provide	92.9 (91.5, 94.3)	96.5 (95.0, 97.9)
Chronic Disease Epidemiology		
Does Not Provide	61.8 (59.2, 64.3)	42.7 (38.9, 46.5)
Does Provide	37.6 (35.0, 40.2)	53.3 (49.5, 57.2)
Behavior Risk Factor Surveillance		
Does Not Provide	63.4 (60.8, 66.0)	47.1 (43.3, 50.9)
Does Provide	35.2 (32.7, 37.8)	48.2 (44.4, 52.1)
Syndromic Surveillance		
Does Not Provide	59.0 (56.4, 61.6)	34.5 (30.8, 38.2)
Does Provide	39.8 (37.2, 42.4)	61.3 (57.6, 65.1)
Community Health Assessment		
Yes, within last 3 years	41.0 (38.4, 43.6)	46.9 (43.1, 50.7)
Yes, between 3 and 5 years	17.8 (15.8, 19.9)	15.2 (12.4, 17.9)
Yes, more than 5 years	13.7 (11.9, 15.5)	18.2 (15.2, 21.2)
No, but plan to in next year	9.2 (7.7, 10.8)	9.1 (6.9, 11.3)
No	17.4 (15.3, 19.4)	9.9 (7.6, 12.2)
Community Health Plan		
Yes, within last 3 years	35.4 (32.8, 37.9)	41.8 (38.1, 45.6)
Yes, between 3 and 5 years	12.4 (10.7, 14.2)	13.2 (10.6, 15.8)
Yes, more than 5 years	7.8 (6.4, 9.3)	9.2 (6.9, 11.4)
No, but plan to in next year	16.2 (14.3, 18.2)	16.2 (13.4, 19.1)
No	26.9 (24.5, 29.2)	18.5 (15.5, 21.5)

*Note: Columns may not total to 100% due to rounding and accounting for the missing values.

Table 2. Weighted Proportions and 95% Confidence Intervals of Selected Characteristics of LHDs Providing HIV Treatment Services.

screening. LHDs that provided HIV screening were far more likely to also provide STD screening (OR=119.0; 95% CI=85.1, 166.5) and STD treatment (OR=63.8; 95% CI=47.5, 85.6). LHDs that provided HIV treatment were also more likely to provide STD screening (OR=39.8; 95% CI=22.2, 71.4) and STD treatment (OR=81.7; 95% CI=40.1, 166.2).

LHDs with populations greater than 25,000 people were significantly more likely to provide HIV screening and HIV treatment compared to

those under 25,000 people. LHDs that provide HIV screening or HIV treatment were more than twice as likely to have a local board of health. LHDs that provide HIV screening or treatment were significantly more likely to have full-time CEOs (screening; OR=4.3; 95% CI=3.1, 6.0; treatment; OR=3.1; 95% CI=2.0, 4.9). LHDs providing HIV screening or HIV treatment were more likely to employ public health

Characteristic*	Provides HIV Screening n=1444	Provides HIV Treatment n=662
HIV Screening	—	79.0 (37.0, 168.4)
HIV Treatment	79.0 (37.0, 168.4)	—
STD Screening	119.0 (85.1, 166.5)	39.8 (22.2, 71.4)
STD Treatment	63.8 (47.5, 85.6)	81.7 (40.1, 166.2)
Population Category		
<25,000	Ref	Ref
25,000-49,999	1.5 (1.1, 1.9)	1.3 (1.0, 1.7)
50,000-99,999	2.1 (1.6, 2.9)	1.7 (1.3, 2.3)
100,000-249,999	4.5 (3.1, 6.3)	2.1 (1.6, 2.8)
250,000-499,999	10.3 (4.9, 21.5)	3.6 (2.4, 5.4)
500,000-999,999	8.7 (4.0, 19.2)	4.8 (3.0, 7.6)
1,000,000+	---**	12.2 (5.5, 27.2)
Local Board of Health (ref=no)	2.2 (1.7, 2.8)	2.8 (2.3, 3.4)
CEO Employment (ref=part-time)	4.3 (3.1, 6.0)	3.1 (2.0, 4.9)
PH Managers	1.6 (1.3, 2.1)	1.7 (1.2, 2.2)
PH Nurses	15.9 (8.1, 31.4)	5.5 (2.4, 12.9)
PH Physicians	4.0 (3.1, 5.1)	3.0 (2.4, 3.6)
Epidemiologists	3.2 (2.4, 4.2)	2.4 (1.9, 2.9)
Health Educators	2.7 (2.2, 3.4)	2.1 (1.7, 2.6)
Health Behavior Specialists	6.4 (4.4, 9.3)	2.5 (2.0, 3.1)
Family Planning Services	15.7 (12.4, 19.9)	5.8 (4.6, 7.4)
Prenatal Services	2.9 (2.4, 2.6)	3.0 (2.4, 3.6)
Obstetrical Services	6.9 (4.6, 10.4)	4.8 (3.7, 6.1)
Primary Care Services	4.9 (3.3, 7.2)	5.8 (4.5, 7.5)
Substance Abuse Services	1.8 (1.3, 2.5)	2.7 (2.1, 3.5)
Laboratory Services	4.1 (3.3, 5.1)	3.1 (2.5, 3.8)
Insurance Outreach/ Enrollment	3.2 (2.6, 3.9)	1.7 (1.4, 2.1)
School-Based Clinics	0.7 (0.6, 0.9)	1.1 (0.9, 1.4)
School Health	1.3 (1.1, 1.6)	1.7 (1.4, 2.0)
Substance Abuse Prevention	2.0 (1.6, 2.5)	2.1 (1.7, 2.5)
Unintended Pregnancy Prevention	5.8 (4.7, 7.2)	2.8 (2.3, 3.4)
Communicable Disease Epidemiology	3.5 (2.4, 5.3)	2.4 (1.4, 4.0)
Chronic Disease Epidemiology	2.0 (1.7, 2.5)	2.1 (1.7, 2.5)
Behavior Risk Factor Surveillance	2.3 (1.8, 2.8)	1.8 (1.5, 2.2)
Syndromic Surveillance	2.7 (2.2, 3.3)	2.6 (2.2, 3.2)
Community Health Assessment		
Yes, within last 3 years	2.5 (1.9, 3.3)	2.0 (1.5, 2.7)
Yes, between 3 and 5 years	1.5 (1.1, 2.1)	1.5 (1.0, 2.2)
Yes, more than 5 years	2.0 (1.4, 2.8)	2.3 (1.6, 3.4)
No, but plan to in next year	2.6 (1.7, 3.9)	1.7 (1.1, 2.6)
No	Ref	Ref
Community Health Plan		
Yes, within last 3 years	1.8 (1.4, 2.2)	1.7 (1.3, 2.2)
Yes, between 3 and 5 years	1.2 (0.8, 1.6)	1.5 (1.1, 2.2)
Yes, more than 5 years	1.6 (1.1, 2.3)	1.7 (1.2, 2.5)
No, but plan to in next year	1.8 (1.3, 2.4)	1.5 (1.1, 2.0)
No	Ref	Ref

*Note: All logistic models utilize "not providing service" as reference group for outcomes and characteristics, except where specified.

**Note: There were no LHDs with population served greater than 1,000,000 that did not provide HIV screening; therefore, no OR could be calculated for this cell.

Table 3. Odds Ratios and 95% Confidence Intervals of Selected Characteristics of LHDs Providing HIV Screening and Treatment Services.

practitioners than those not providing screening or treatment.

Similarly, LHDs providing HIV screening or HIV treatment were significantly more likely to provide all other services, with the exception of school-based clinics (screening: OR=0.7; 95% CI=0.6, 0.9; treatment: OR=1.1; 95% CI=0.9, 1.4). Finally, LHDs that provide HIV screening and HIV treatment were significantly more likely to have completed a community health assessment and community health plan in the last 5 years or plan to complete one in the next year, compared to those that do not provide either HIV screening or HIV treatment.

Discussion

Screening and treatment

Our analysis shows that over two-thirds of LHDs provide HIV screening and one-third provide HIV treatment, demonstrating that LHDs are significant contributors to community-based HIV screening and also serve an important role in providing HIV treatment access points. Only 1% of LHDs that provide HIV treatment did not provide HIV screening, indicating that HIV screening is embedded in the overwhelming majority of LHD-based HIV treatment programs, which reflects evidence-based practice. In addition, a trend appeared where the likelihood of providing HIV screening and HIV treatment increased with the size of the population served. This finding is particularly important since it demonstrates that LHDs are appropriately responding to the higher proportion of HIV infection found in more urbanized communities in the US.

Management and staff

Another important aspect in the provision of HIV screening and HIV treatment by LHDs is the composition of the management and staff. LHDs that provide HIV screening or HIV treatment are significantly more likely to have a local board of health and have a full-time CEO compared to those that do not provide HIV screening and HIV treatment. In addition, LHDs that provide HIV screening and HIV treatment were significantly more likely to have public practitioners such as public health managers, physicians, epidemiologists, health educators, behavioral health specialists, and most notably, public health nurses. Having greater oversight and a staff trained in public health are positively associated with the provision of HIV screening and HIV treatment services, indicating that LHDs are employing an appropriately trained workforce needed to successfully track, prevent, and treat HIV.

Range of services

This study also found significant associations with HIV screening and HIV treatment and the provision of a broad range of related services. HIV screening and HIV treatment in LHDs was significantly associated with STD screening, STD treatment, and family planning services, indicating that HIV screening is performed in conjunction with these services, which reflects evidence-based practice. In addition, HIV services, particularly HIV screening, is positively associated with prenatal care, obstetrical care, and primary care services—all of which are settings in which HIV screening is strongly recommended.

Finally, LHDs that conducted HIV screening and HIV treatment were significantly more likely to conduct a variety of surveillance activities such as communicable disease epidemiology, behavioral risk factor surveillance, and syndromic surveillance, indicating that LHDs have access to information to help better plan and monitor HIV screening and HIV treatment activities in their communities, which can make them more targeted, efficient, and effective.

Community-based activities

Our analysis also found that LHDs that provide HIV screening and treatment are more likely to be engaged in other community-based activities such as insurance outreach, insurance enrollment, and school health activities. However, there was an insignificant relationship between LHDs providing HIV screening and HIV treatment and providing school-based clinics. This might be explained by the controversies surrounding sexuality-based services in schools, such as HIV screening, regardless of the presence of risk factors associated with transmission.

Lastly, LHDs that provided HIV screening and HIV treatment were significantly more likely to have completed community health assessments and community health plans compared to those that do not provide these services. This speaks to the earlier point those LHDs with more information about the context, risk factors, and epidemiology of disease in their communities; the more likely they may be to better plan and monitor HIV screening and HIV treatment activities.

Organizational capacity

The provision of HIV screening and HIV treatment services is positively associated with a number of factors such as population size; local boards; full-time CEO; a robust workforce; the provision of other services such as family planning, STD screening and treatment, primary and obstetrical services; and participation in community-based programs such as insurance enrollment and community health assessments and improvement plans. All of these characteristics require a sufficient level of organizational capacity, which is enabled in a number of ways, including funding. Due to limitations in the data, amounts and sources of funding were not included in this analysis because they were only collected at the aggregate level. Thus, our analysis related to organizational capacity is limited to the services LHDs actually provide and not the amount of money they receive.

Limitations

This study relies on data that were self-reported and collected at one point in time using a self-administered survey. While the analyses corrected for non-response using sample weighting, there were still missing data. In addition, selection bias was likely present, as larger LHDs were more likely to respond to the survey than their smaller counterparts [16]. The analysis was also necessarily limited to questions posed on the survey, some of which we found to be ambiguous (e.g. a lack of explanation as to what qualifies as a service). Because the analysis was limited to survey questions, other factors (e.g., level and sources of funding) could potentially account for some of the findings. Lastly, because these data were collected at one point in time, the analysis only examined correlations between the provision of services and characteristics of LHDs, so no temporal or causal relationship can be established. In spite of these limitations, however, the statistical associations found in our analysis do reveal important structural characteristics of LHDs that provide HIV screening and HIV treatment services.

Conclusion

LHDs provide HIV screening and HIV treatment services to millions of Americans each year. These screening and treatment services lower HIV infection rates and link more people to care. LHDs that provide HIV screening and HIV treatment services tend to have greater organizational capacity including more management and staff, offer a wider range of services, and participate in more community-based activities. LHDs without this level of organizational capacity

are less likely to provide HIV screening and HIV treatment services, which can impact the spread of HIV in those communities. Thus, the organizational capacity of LHDs is an essential factor in the provision of community-based HIV screening and HIV treatment services in communities throughout the US.

References

- Centers for Disease Control and Prevention (CDC) (2011) HIV Surveillance Report, Washington, DC.
- Centers for Disease Control and Prevention CDC (2012) HIV Surveillance Supplemental Report: Diagnosed HIV Infection among Adults and Adolescents in Metropolitan Statistical Areas-United States and Puerto Rico. Volume 18, Number 8, Washington DC.
- Center for Disease Control and Prevention CDC (2012) HIV Surveillance Supplemental Report . Volume 17, No. 3.Center for Disease Control and Prevention, Washington DC.
- Centers for Disease Control and Prevention (CDC) (2010a) HIV Surveillance Report: Center for Disease Control and Prevention, Washington DC.
- Schackman BR, Gebo KA, Walensky RP, Losina E, Muccio T, et al. (2006) The lifetime cost of current human immunodeficiency virus care in the United States. *Med Care* 44: 990-997.
- Centers for Disease Control and Prevention (CDC) (2012) HIV Cost-Effectiveness. Retrieved from HIV/ AIDS.
- Farnham PG, Holtgrave DR, Sansom SL, Hall HI (2010) Medical costs averted by HIV prevention efforts in the United States, 1991-2006. *J Acquir Immune Defic Syndr* 54: 565-567.
- Clark LF, Miller KS, Nagy SS, Avery J, Roth DL, et al. (2005) Adult identity mentoring: Reducing sexual risk for African-American seventh grade students. *J Adolesc Health* 37: 337.
- Rotheram-Borus MJ, Rhodes F, Desmond K, Weiss RE (2010) Reducing HIV risks among active injection drug and crack users: the safety counts program. *AIDS Behav* 14: 658-668.
- Behavioral Interventions (2012) High Impact HIV/AIDS Prevention Project (HIP) is CDC's approach to reducing HIV infections in the United States. Danya International.
- Kalichman SC, Cherry C, Browne-Sperling F (1999) Effectiveness of a video-based motivational skills-building HIV risk-reduction intervention for inner-city African American men. *J Consult Clin Psychol* 67: 959-966.
- Diallo DD, Moore TW, Ngalame PM, White LD, Herbst JH, et al. (2010) Efficacy of a single-session HIV prevention intervention for black women: a group randomized controlled trial. *AIDS Behav* 14: 518-529.
- Kegeles SM, Hays RB, Coates TJ (1996) The Mpowerment Project: a community-level HIV prevention intervention for young gay men. *Am J Public Health* 86: 1129-1136.
- Marks G, Crepaz N, Senterfitt JW, Janssen RS (2005) Meta-analysis of high-risk sexual behavior in persons aware and unaware they are infected with HIV in the United States: implications for HIV prevention programs. *J Acquir Immune Defic Syndr* 39: 446-453.
- Centers for Disease Control and Prevention CDC (2010b) HIV Prevention Funding Allocations at CDC-Funded State and Local Health Departments, Atlanta.
- National Association of County & City Health Officials (NACCHO) (2011) 2010 National Profile of Local Health Departments. Washington DC.
- Gruber HE, Rhyne AL 3rd, Hansen KJ, Phillips RC, Hoelscher GL, et al. (2012) Deleterious effects of discography radiocontrast solution on human annulus cell in vitro: changes in cell viability, proliferation, and apoptosis in exposed cells. *Spine J* 12: 329-335.

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