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HIV Community-Based Organizations' Readiness and Self-Perceptions Regarding Their Role in PrEP Implementation

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Abstract

HIV Community-Based Organizations' Readiness and Self-Perceptions
Regarding Their Role in PrEP Implementation
By Emily B. Maier

Introduction: Community-based organizations (CBOs) are essential in the prevention of HIV. As pre-exposure prophylaxis (PrEP) becomes increasingly accepted and advocated for by international agencies, the role of implementation will fall largely to local organizations. It is necessary to understand the current state of CBOs' readiness to utilize and advocate PrEP, and assess knowledge, attitudes, and practices regarding such. The purpose of this study was to gauge contemporary PrEP implementation as well as measure CBOs' self-perceptions regarding their role for PrEP scale-up. A secondary goal of the study was to determine important factors associated with CBOs' awareness and intentions regarding PrEP.

Methods: In February and March 2015, an online national survey was conducted by the Division of HIV/AIDS Prevention of the Centers for Disease Control and Prevention. Managers and direct-service providers from each CBO were surveyed regarding organizational characteristics, PrEP awareness, resource needs, and challenges regarding implementation of biomedical interventions. A PrEP Readiness Score (PRS) was assigned to each CBO based on the services provided, as reported by the first manager. Organizational characteristics were compared across PRS levels. Bivariate associations between organizational variables and PrEP-associated outcomes were assessed, and those that were significant were eligible to compete in the final multivariate logistic model.

Results: 232 of the 424 CBOs responded. Organizations differed by PRS on percentage of clienteles that were men who have sex with men and heterosexual females, as well as the percentage of the annual budget that was from private sources. Organizations greatly differed by PRS with respect to services provided. Higher PRS CBOs were more aware and currently provided PrEP; although the majority of organizations reported an interest in provided PrEP, given more resources. PRS was found to be a significant predictor of PrEP awareness (OR=5.683 per index increase, 95% CI = 1.412, 22.875), clients requesting information about PrEP [OR=2.160 per index increase, CI = 1.061, 4.397], and CBOs prescribing PrEP [OR=4.722 per index increase, CI = 2.267, 9.837].

Conclusion: Our findings indicate a need to increase information, training and resources of CBOs in order to scale-up implementation of PrEP to reduce HIV transmission.

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Introduction

Since the start of the HIV/AIDS pandemic, the combination of increased political will, research funding, and social activism have resulted in a scale-up of treatment, care, and support for people living with HIV/AIDS. Such change has helped shift the dialogue and attitude towards HIV/AIDs and affected patients, creating a more tolerant and supportive environment, as well as an overall decline in prevalence worldwide [1]. In the United States, HIV incidence has remained stable [2], with certain subpopulations (injection drug users (IDU), heterosexual males, and black females) decreasing [3]. However, the epidemic continues to disproportionately affect men who have sex with men (MSM), with young African-American MSM accounting for more new infections than any other racial or age group [4, 5].

Community-based organizations (CBOs) have been a key component in contributing to HIV treatment and prevention efforts, both on a domestic and global scale [6]. Locally, CBOs focus on providing services and linkages to affected individuals; globally, they can work with government agencies to develop and become implementation partners for national responses.

According to the National Community-Based Organization Network, a CBO can be defined as an organization "driven by community residents in all aspects of its existence" [7]. For a CBO, the majority of its staff consist of local individuals, and its main foci and programs are defined by residents [7]. In reality, CBOs exist in a wide range of forms besides those delineated by academic classifications; however, they are generally created to address specific community needs. In the study, CBO referred to assorted local non-profit organizations operated by persons familiar with the needs of specific sub-populations. Primary health care institutions, community centers, and HIV-

specific prevention or treatment organizations were all included. This gap between the study and academic definitions highlights the variety of forms a CBO may have.

Previous literature has proposed that CBOs are well positioned to reach marginalized populations [8]. Due to their integration within a community, CBOs are distinctively situated to comprehend the circumstances of the clientele they serve [9]. These organizations often act as the front-line resource for high-risk populations who cannot afford or access alternative resources. CBOs often perform multiple roles: service provision, advocacy, educator, policy developer, and researcher [10, 11]. Such organizations can influence public opinion, improve understanding regarding barriers and challenges, and increase the attention given and training time spent on various issues [12].

These organizations can subsequently capitalize on their knowledge, credibility, and competence in order to generate effective HIV prevention and treatment initiatives to address the disparities of incidence in their populations [6, 13, 14]. In the case of HIV/AIDs, CBOs conduct work regarding intervention and prevention [9], with different foci on specific at-risk populations (e.g., IDU, the LGBTQ community, and commercial sex workers) [15-17]. The adaptive nature of CBOs has led to an evolution in function: originally devoted to providing support to HIV patients and advocating for research, they have now transitioned into multi-faceted institutions working on education, prevention, and testing [18]. CBOs play an important role in the implementation of new interventions through education and awareness, thereby reducing the possibility of poor adherence and misuse of new technology. Additionally, they can manage efforts regarding community

mobilization and participation to increase access, delivery, and linkage to various services, especially to high-risk populations [19].

Antiretroviral therapy (ART) can be used to reduce the incidence of HIV [20-22]. In persons without HIV infection, ARVs can be given either: 1) for 28 days following a potential sexual or injection-related HIV exposure as non-occupational post-exposure prophylaxis (nPEP) or 2) begun before potential sexual HIV exposures and taken daily for months to years as pre-exposure prophylaxis (PrEP) [23-28]. In the Partners PrEP study among 4,747 heterosexual serodiscordant couples, there was an observed 75% reduction in HIV incidence [27]. In 2015, the World Health Organization determined PrEP to be efficacious among women based on a meta-analysis of six studies [4, 29].

Recent studies have examined PrEP awareness and desire among various sub-populations, including providers and affected populations. Currently, PrEP awareness is low among women, MSM, and other at-risk groups [30-33]. In a national survey less than 40% of family planning practitioners, including nurses, midwives, and physicians, could correctly define PrEP [34]. Even providers that are aware of CDC guidelines often lack experience in prescribing PrEP or are reluctant to do so [35, 36].

A recent study of Canadian AIDS CBOs evaluated knowledge, attitudes, and needs regarding PrEP. The study found that 26% of front-line service providers had been asked about PrEP in the past year, and approximately 60% of the respondents believed that they or their organization did not have enough current knowledge about PrEP [37]. A second survey of STD and family planning clinics reported that the majority of healthcare providers were concerned about the safety, efficacy, and cost of PrEP [38], reconfirming the need to increase education of the front-line health-care workers who can educate and

advertise the use of PrEP. A third survey of physicians reported numerous barriers, ranging from cost-effectiveness to concern about the difficulty of implementation with respect to scarce guidelines [39].

Unlike other HIV prevention strategies focused on risk behaviors, PrEP involves prescribing ARVs and monitoring for side effects and safety. Thus, to utilize this biomedical intervention, CBOs would need to collaborate with clinicians licensed to prescribe medication. This doesn't mean that non-clinical CBOs are inadequate with respect to PrEP implementation: such organizations are necessary to work on education and eligibility regarding such preventions, as well as linking clients to clinical care sites, supporting medication adherence and behavioral risk reduction activities. With the rise of biomedical preventions, it is feasible that some non-clinical CBOs may want to add clinical staff or formally collaborate with clinical providers.

Interestingly, there is a dearth of literature regarding the role of CBOs in PrEP implementation, or more generally, HIV prevention. This may be due to the shift of responsibility and effort in reducing HIV transmission from physicians to community organizations, whose different capabilities and goals allow them to tackle the issue of HIV transmission from different angles.

Additionally, patients may be less willing to disclose risk or request PrEP from their primary doctors, as compared to specialized community providers [40-42]. Sexual health clinics and other CBOs will play a key role in the implementation of PrEP and the expansion of access to vulnerable individuals. While physicians would need to monitor side effects or drug resistance, a comprehensive package of preventive services and

behavioral counseling would be necessary in order to ensure adherence – a package CBOs are significantly more equipped to provide on a regular basis. Research has shown that sexual risk reduction counseling – a staple of the services offered at CBOs – is not regularly performed by physicians, for a variety of reasons (time constraints, insufficient training, etc.) [43, 44].

The Division of HIV/AIDS Prevention (DHAP) of the Centers for Disease Control and Prevention (CDC) provides direct funding to community-based organizations (CBO) to deliver non-clinical prevention services (e.g., counseling, HIV testing, HIV education), with some CBOs also funded to improve outcomes in the HIV care continuum.

With the expansion of effective clinically-delivered HIV prevention methods such as PrEP, it is necessary to conduct formative research to assess the interest, current capacity, and anticipated needs of CBOs to engage with these interventions as part of their HIV prevention services. Moreover, to improve the acceptance of PrEP and readiness to begin prescribing, it is integral to understand potential barriers and obstacles CBOs may face. To assess organizational factors that are potentially related to the adoption of these biomedical interventions, we surveyed a national sample of HIV-focused CBOs about their awareness of, interest in, current capacity, anticipated needs, and organizational characteristics required to deliver or support clients using PrEP.

Methods

Survey Design

A survey was developed, reviewed, and then pilot tested for a web-based delivery. The survey was divided in two parts. Part A, which was answered only by self-identified managers, focused on characteristics of the organizations and the population served. One domain, using open-ended and multiple-choice responses, gauged organizational traits, such as total operating budget, size, and location of organization. A question assessing the source of HIV prevention funding, required respondents to estimate the percentage of total funding coming from each source (e.g., CDC, federal agencies, state, etc.). A second domain assessed services provided (e.g., testing, behavioral interviews, and linkages to other services) using dichotomous or multiple-response types. Finally, clientele demographics (e.g., race, age, sex, and sexual orientation) were collected using open-ended questions requiring respondents to estimate the percentage of each subgroup (i.e., for race, the percentage of clientele that were Asian, white, black, etc.).

The second section, completed by both managers and direct-service providers, assessed CBO awareness, intentions, and resource needs for engagement with biomedical prevention services. The section began with a short description of biomedical interventions, including PrEP as well as nPEP and TasP (treatment as prevention). Questions assessed if the respondent had heard of PrEP, if clients had requested information about PrEP, and if any clients had been prescribed PrEP, using multiple-response questions. Conditional upon the prescribed-PrEP question, additional multiple-response questions followed to determine the type of clientele that had been prescribed PrEP.

A second domain gauged CBO future plans regarding PrEP, asking about usage plans (and reasons for), by means of a modified Likert scale[1]. A third domain, also using a Likert scale, asked what additional resources were necessary in order to support the use of PrEP, with rankings on priority level[2]. A fourth domain assessed where the respondent would like to get different types of resources about HIV prevention methods via multiple-choice: from local health departments, providers, CDC-funded sources, or national sources. The final domain included open-response questions regarding the organization's primary strengths and challenges regarding the support of biomedical prevention methods, as well as additional information needed to make a decision regarding the use of PrEP. The survey took approximately 45 minutes to complete.

Analysis

Descriptive quantitative analyses were conducted on the closed-ended questions of the surveys, such as calculating frequencies of responses. All statistical analyses were done using SAS version 9.4 (SAS Institute; Cary, NC), and logistic models were done in SAS using PROC LOGISTIC. Tables were generated using Microsoft Excel 2013.

[1] There were five potential answers, in the following order: Unlikely to support the use of PrEP, because it is unsafe, ineffective, or unethical; Unlikely to support the use of PrEP, because clinical services are not in our mission; Unsure about supporting the use of PrEP; we need to know more; Currently providing PrEP at a level that meets our clients' needs; Likely to support the use of PrEP for some clients, but need more resources.

[2] There were four potential answers regarding the priority level for addressing service needs, in the following order: High; Moderate; Low; Not a Priority

CBOs had a range of respondents, both in number and role. The earliest manager response that was not missing Part A answers from each unique CBO was used to analyze Part A of the survey. An organization's primary city location was determined from the relevant question or the organization's name if possible (e.g., AIDS Project of Los Angeles). Resident population estimates from the 2014 census reports were used to assign a city population to each organization based on its reported location. Populations were subsequently classified into four sizes: nonmetropolitan (50,000 or less); small metropolis (50,001 – 250,000); medium metropolis (250,001 – 1,000,000); large metropolis (greater than 1 million).

CBOs were divided into different levels of PrEP readiness, based on the services provided as reported by the first manager. The PrEP Readiness Score (PRS) was a count of the number of services provided at each respective CBO required for PrEP delivery (phlebotomy, prescribed medications, dispensed medications, sexually transmitted infections testing and treatment, and HIV testing). A CBO was defined as having a high PRS if it provided five or more of the services. A medium PRS CBO provided two to four services. A low-level PRS CBO provided one or none of the services.

These classifications were then used to assign PrEP Readiness status for any additional manager or direct-service provider respondents from the same organization. A PRS could not be determined for organizations with only direct-service provider respondents, as the relevant questions were available only to managers. An organization's resident population and location was also assigned in a similar manner. In order to avoid the problems associated with repeated measures, only the first manager from each organization was included in the analysis.

Respondents were asked to estimate the percentage of their CBO's clients who belong to each group within a category. Persons could only be counted once (i.e., a client could not be in both heterosexual and bisexual groups of the sexuality category), and percentages could total up to 100%. These questions included demographics of clientele (e.g., race, ethnicity, age group, sex, gender and sexuality, intravenous drug use, HIV status), and percentage of the CBO's budget by source. For measures of association, the PRS averages within the same group were compared using ANOVA. Part A also assessed additional clinical (e.g., blood collection by venipuncture, genital examination, and treatment for STDs) and nonclinical services (e.g., HIV testing, behavioral interventions, and linkage to treatment and care) offered. Clinical service responses were only in the affirmative; missing responses were categorized as "no" and included in the denominator. Nonclinical service questions had both affirmative and negative answer choices, so missing responses were excluded from calculations.

In Part B of the survey, organizations were asked their awareness of PrEP and their intention to provide it. Variables assessing awareness or clientele requesting interventions were analyzed in the same way as clinical services variables collected in Part A of the survey. The intention variable was tested for significant differences across PRS two ways: both across all responses, and again with the variable dichotomized into increasing PrEP and not. There was no difference in results based on this variable definition. CBOs were also asked to rate a variety of PrEP resource needs as either high, medium, low, or no priority for their organization.

Modeling

A secondary objective was to identify respondent characteristics associated with awareness and current actions regarding PrEP. Four different logistic regression models were fitted to assess the association between organizational characteristics and each of the PrEP variables: awareness, clients' requesting of PrEP information in the past year, prescription of PrEP in the past year, and dichotomized intention regarding PrEP.

Bivariate associations between the PrEP indices and each individual covariate (number of full time employees, annual budget, primary funding source, percentage of HIV-positive clientele, percentage of IDU clientele, PRS level, primary sex of clientele, primary race of clientele, primary age group of clientele, and city population type) were assessed by calculating crude odds ratios and 95% confidence intervals (CIs) versus the respective reference groups. Variables that were bivariately associated with the outcome at $\alpha < 0.10$ were included in the initial multivariate logistic regression model.

All variables were then assessed for collinearity and separation; variables that led to quasi-separation were removed from the model. Stepwise elimination was used to arrive at the final model, with variables retained at $\alpha = 0.05$. Model fit was assessed using the Hosmer-Lemeshow test.

Eligibility Criteria

Eligible CBOs held a 501c3 nonprofit status, had been in operation for at least three years, and provided HIV education or prevention services directly to community clients. Commonly excluded under these criteria were CBOs that only worked in advocacy, policy, or mass media.

Two lists of CBOs were prepared, totaling 559. The first consisted of community health centers funded by DHAP as CBOs; the second contained all other CBOs that had

applied for CDC funding (direct or indirect). The latter strata was further divided into CDC directly-funded organizations, CDC indirectly-funded organizations, and applicants that did not receive funding. Invitation phone calls were made to each selected organization. For each CBO agreeing to complete the survey, one manager-level staff member and one direct-service providers were nominated by the CBO, and their names and e-mail addresses were collected.

Pilot Test

Prior to the survey administration, phone interviews were conducted with respondents recruited from 8 organizations randomly selected from each of the lists. Respondents were asked to enter test data on the web survey while "talking through" the question wording, survey content, and format with study investigators on the phone. After analysis of this pretesting, final revisions to the survey were made.

Data Collection

The final survey sample of active and reachable CBOs included 133 DHAP-funded and 291 CBOs not funded by DHAP, resulting in 424 CBOs contacted. In February and March 2015, e-mail invitations with a link to the survey were sent to an administrator and direct-service provider at each interested CBO. Reminder e-mails were sent if the survey was not completed, at 2 weeks and 4 weeks after the initial invitation. Upon completion of the survey, all names and addresses were destroyed. The survey was offered on the Survey Monkey platform.

Results

PrEP Readiness Score

321 informative observations were received (210 manager, 111 direct-service provider), resulting in 232 of the 424 CBOs responding (response rate 55%). When

analyzed by respondents, 197 managers from 175 CBOs answered questions from Part A; 145 of those respondents from 136 CBOs also replied to Part B of the survey. 106 direct-service providers from 97 CBOs answered Part B of the survey.

Part A of the survey was answered by managers only. Of the 197 managers that responded to Part A, 42 were from a high PRS CBO, 41 from a medium PRS CBO, and 92 from a low PRS CBO.

Characteristics

When analyzed by non-duplicative CBOs, the average clientele composition of CBO clients were 34% HIV positive, 62% male, 28% white, 47% black, 19% Hispanic and 6% other race/ethnicities. There was a significant difference between CBOs of varying PrEP Readiness Scores regarding the percentages of clientele that were MSM ($p = 0.0353$), with high PRS CBOs having more of their clientele being MSM (50.16%, $n = 35$) compared to low PRS CBOs (34.36%, $n = 17$).

The average reported proportion of clients served for all CBOs by transmission risk group was 41% MSM, 4% WSW, 26% heterosexual females, 23% heterosexual males, 5% transgender persons and 14% persons who inject drugs. There was a significant difference between CBOs of varying PrEP Readiness Scores regarding the percentages of clientele that were heterosexual females ($p = 0.0429$), with high PRS CBOs having less of their clientele being heterosexual females (20.26%, $n = 35$) compared to medium and low PRS CBOs (23.94%, 34.36%, respectively). The average of the reported proportion of clients for all CBOs by age group was 8% adolescents, 29% young adult, 42% mid-adult, and 20% older age.

CBOs on average, served clientele that were approximately 28% white, 47% black or African American, and 19% Hispanic or Latino. Low PRS CBOs had the highest percentage of African-American clientele reported (49%) as compared to medium and high PRS CBOs, which reported between 42 and 48 percent of their clientele being African-American.

CBOs, on average, reported annual budgets in the $1 – 5 million range (33%), followed by budgets over $10 million (26%), with funding coming from a variety of sources. There were no significant differences found across PRS. CBOs were predominantly funded through state funding (25%), followed by city/county and other federal funding (16% and 25%). There were significant differences in the percentage of budgets funded by private sources ($p = 0.0345$), with high PRS CBOs reporting lower percentage of private funding compared to medium or low PRS CBOs. Both medium PRS and low PRS CBOs reported a range between 11 and 16 percent of their budget financed by private sources, as compared to high PRS CBOs, which reported that less than 6 percent of their budget was due to private contributions.

A wide range of services were provided by the CBOs: generally, most organizations reported offering HIV testing (92%), and linkages to various services. There were significant differences found across PRS for diagnosis of mental health conditions, clinical care, and providing opiate addiction treatment ($p < 0.0001$). In all three cases, as PRS increased, the percentage of CBOs that offered these services also increased. This trend was also seen for individual behavioral interventions ($p = 0.0285$) and linkage to HIV treatment ($p = 0.0211$); for both services, a higher proportion of CBOs from high PRS offered these as compared to medium or low PRS CBOs.

CBOs were evenly geographically distributed between the Midwest, West, and Northeast regions of the country, with 40% of all surveyed CBOs being from the South. Few CBOs were from non-metropolitan regions, and 44% were from cities classified as medium metropolises.

Awareness, Attitudes, Intentions

Over half of CBO managers had heard of PrEP and were aware of clients requesting information about PrEP (68% vs 52%) at their CBO, as seen in Table 2. There was a significance difference across PRS in CBOs' awareness, with 95% of respondents from medium and high PRS CBOs reporting having heard of PrEP as compared to only 43% of low PRS CBOs ($p < 0.0001$). Approximately half of all CBOs reported having at least one client request information. While few CBOs reported prescribing PrEP (26%), a minority overall said they were providing it at the level needed by their clients (23%), and more than half (61%) said increasing its provision was likely but required additional resources.

CBOs were significantly different based on PRS with respect to having had clients requesting information about PrEP in the last year ($p < 0.0001$). As PRS increased, the percentage of CBOs reporting having at least one client request information also increased. 70% and 88% of medium and high PRS CBOs reported having at least one client request information, as compared to only 27% of low PRS CBOs.

CBOs were also significantly different based on PRS with respect to having prescribed PrEP in the last year ($p < 0.0001$). Of the three PRS levels, more of the high

PRS CBOs reported having a client prescribed PrEP at their CBOs (60%), as compared to medium (8%) and low (9%) PRS CBOs.

Similarly, CBOs were significantly different based on PRS with respect to the intentions regarding PrEP usage ($p = 0.009$), regardless of if the variable was dichotomized. High PRS CBOs were more likely to be currently providing and meeting the needs of their clientele (40%) as compared to medium PRS (5%) and low PRS CBOS (11%). Interestingly, more medium PRS CBOs reported that PrEP usage was likely (82%), compared to high or low PRS CBOs (52%, for both).

Modeled Correlation between PrEP Readiness and CBO Characteristics

Respondent characteristics associated with PrEP awareness, client requests of PrEP information, PrEP prescription, and dichotomized intention regarding PrEP are summarized in Tables 3, 4, 5, and 6, respectively. Number of full time employees, annual budget, primary funding source, percentage of HIV-positive clientele, percentage of IDU clientele, PRS level, primary sex of clientele, primary race of clientele, primary age group of clientele, and city population type were all considered for inclusion.

With respect to PrEP awareness (Table 3), higher percentage of clientele that are HIV-positive ($p < 0.10$) and PRS ($p < 0.05$) were associated with higher odds of the respondent having heard of PrEP. Higher percentage of clientele that are IDU ($p < 0.10$), having primarily female clientele ($p < 0.05$), and having primarily black or non-white clientele ($p < 0.10$) were associated with lower odds of the respondent having heard of PrEP. Adjusted odds ratios were calculated for significant terms after removing percentage of clientele that are HIV-positive due to quasi-separation. The final model after stepwise selection only contained PRS [odds ratio, OR=5.683 per index increase,

95% confidence interval (CI) = 1.412, 22.875]. There was no evidence of a lack of fit in the final model via the Hosmer-Lemeshow test ($p = 0.0503$).

With respect to clients requesting information about PrEP in the last year (Table 4), higher percentage of clientele that are HIV-positive and PRS were associated with higher odds of the CBO having a client request information ($p < 0.05$). Having primarily female clientele, and having primarily black or non-white clientele were associated with lower odds of the CBO having a client request information ($p < 0.05$). Adjusted odds ratios were calculated for significant terms, after removing total budget and primary age group of clientele due to quasi-separation. The final model after stepwise selection contained percentage of HIV-positive clientele [OR=1.019 per percentage increase, CI = 1.001, 1.038], PRS [OR=2.160 per index increase, CI = 1.061, 4.397], and having primarily female clientele [OR=0.205 compared to men, CI = 0.069, 0.606]. There was no evidence of a lack of fit in the final model via the Hosmer-Lemeshow test ($p = 0.9591$).

Regarding CBOs prescribing PrEP in the last year (Table 5), a higher number of full time employees, PRS, and having primarily black or non-white clientele were associated with higher odds of the CBO having a prescribed PrEP ($p < 0.05$). Having an annual budget less than $100,000 was associated with lower odds of the CBO having a client request information ($p < 0.05$). Additionally, having primarily female clientele was associated with lower odds of the CBO having a client request information ($p < 0.10$). Adjusted odds ratios were calculated for significant terms, after removing total budget due to quasi-separation. The final model after stepwise selection contained only PRS [OR=4.722 per index increase, CI = 2.267, 9.837]. It should be noted that there was

evidence of a lack of fit in the selected model via the Hosmer-Lemeshow test ($p = 0.0130$).

With respect to PrEP intention (Table 6), number of full time employees and having a budget less than $100,000 were associated with lower odds of the respondent reporting that increasing PrEP usage was likely ($p < 0.10$). Adjusted odds ratios were calculated for significant terms, after removing total budget due to quasi-separation. The final model after stepwise selection only contained number of full time employees [OR=0.997 per index increase, CI = 0.994, 1.000]. There was no evidence of a lack of fit in the final model via the Hosmer-Lemeshow test ($p = 0.5445$).

Resource Priorities

CBO managers were asked to rank how important particular resources were to them for implementation of PrEP at their CBO. For analysis of these 'needs' variables, the categories of low and no priority were combined, and the Fisher method was used to assess differences. Across various PRS level, the resources with over 70% of respondents ranking at high priority dealt with client information materials and financial resource guides (Table 7). Other common high priority resources named were training in reimbursement and billing, program manuals, and eligibility protocols.

Discussion

Given the changing landscape of HIV prevention, with biomedical strategies taking a more predominant role based on their high effectiveness, many CBOs will need additional support to be able to appropriately provide prevention services to their target audiences. Many respondents reported they had heard of PrEP prior to the survey, but less than half indicated that their CBO had prescribed PrEP. Similarly, less than a quarter

reported that they were currently prescribing PrEP at a level that met their clients' needs. Conversely, almost two-thirds of respondents reported that implementation was likely, if more resources were available. There was a strong correlation between PRS and information CBOs had regarding PrEP.

The PrEP Readiness Score was a useful predictor of awareness and clients' requesting of information, and also highlighted differences between CBOs that were very equipped to handle the implementation of PrEP compared to those that were not. PRS was predictive of all PrEP-associated measures except for the intention regarding usage variable, which may be the fault of the question rather than the concept. This predictive power suggests there is likely high interest in PrEP prescription and usage, and providing sufficient resources may be the key to getting to CBOs to scale up in PrEP implementation. Thus, the PRS can be used for policy decisions or to assess likely needs of CBOs planning to implement PrEP in the future.

PrEP has the potential to be a zeitgeist in the history of HIV prevention. The likelihood of that is dependent on implementation and scale-up, a process that is heavily dependent on the stakeholders. Study findings demonstrated that there is a perceived deficit of resources and training regarding PrEP among the majority of CBOs, especially regarding finances, eligibility and program materials specific to PrEP. This suggests an increased need for staff training regarding PrEP knowledge, as it is likely that PrEP would not be implemented widely if staff were not confident about their ability to discuss it alongside other prophylactic methods. Similarly, more resources regarding space and staff should be attended to, as a CBO would likely need devoted staff and space to increase PrEP usage.

The perceived barriers analyzed are similar to those described by providers previously. Primarily, lack of awareness and education among both clientele and potential prescribers have been reported [34], however our study had a significantly higher proportion of participants being aware of PrEP than a similar Canadian study (94% vs. 26%) [37]. A different study reported most providers intended to provide PrEP in the future, but had concerns about toxicity, resistance, adherence, and payment, whereas our study did not specify what the reservations [45]. Other quantitative and qualitative studies have demonstrated concerns about side effects, diversion of limited funds, and the potential for increased practice of higher-risk behaviors [38, 46]. Of particular parallel was a 2012 study that found that providers' willingness to prescribe PrEP was more likely with higher PrEP knowledge scores [38]. It is likely that high PRS would be correlated with higher PrEP knowledge scores, as it was associated with awareness of PrEP. Several studies have proposed the addition of PrEP community education to overall HIV prevention techniques [47, 48], an idea supported by providers in our study and others [46].

These results should be interpreted in the context of a cross-sectional study design. Study participants represent a subset of CBOs, so findings may not be generalizable to all organizations in the country. There were numerous limitations to this study, primarily regarding the sample size and distribution of CBOs across PRS and other variables. Although CBOs were included from all parts of the region, the survey recruited CBOs based on funding application; thus, there is the possibility of CBOs existing that would be significantly different than those on the CDC-garnered list. Moreover, as PRS could only be measured from managers' responses, direct-service responses were not

analyzed. Additionally, most questions were not required, leading to frequently missing data.

Future studies should continue to explore the applicability and usefulness of the PRS, both as a predictor of CBO characteristics as well as a tool for policymakers or funding agencies. Supplementary research should be performed to examine the agreeability between managers and direct-service providers, and better understand the differences in needs between the two populations. Finally, the survey contained rich data regarding where CBOs seek additional information and resources – in order to improve communication and training between funding or federal agencies and local efforts, it would be greatly beneficial to understand and subsequently optimize communication channels.

Conclusion

There is a need to increase capacity for PrEP, although it is not entirely dependent on CBOs. Low PRS CBOs can still contribute to the implementation of PrEP by providing other resources, such as linkages and behavioral counseling. Moreover, there is a high need for collaboration between CBOs and health departments, federal government, and academia to increase implementation capabilities. While interest in PrEP has been noted, most local CBOs in the United States lack numerous resources to successfully implement it. The findings of this study highlight the wide range of PrEP readiness and knowledge among CBOs and the need to equip CBOs with up-to-date information and resources.

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Tables

Table 1. Organizational Characteristics of Respondent Community Based HIV Prevention Organizations as Reported by Program Managers (n=175 CBOs), 2015

Characteristic	All	High PrEP Readiness Index	Medium PrEP Readiness Index	Low PrEP Readiness Index	p-value[3]
	N = 175[4]	N = 42	N = 41	N = 92	
Percentage of Clients Served					
mean (st. dev)					
HIV positive	34.87 (34.04)	37.97 (34.07)	34.16 (29.70)	32.91 (37.99)	ns[5]
Male	62.14 (19.30)	64.05 (16.93)	63.29 (21.04)	60.11 (19.71)	ns
Injection drug user	13.55 (16.72)	9.14 (9.93)	15.73 (17.04)	15.27 (19.72)	ns
MSM	40.94 (27.78)	50.16 (23.78)	40.93 (28.75)	34.36 (28.28)	0.0353
WSW	4.36 (5.53)	3.89 (4.58)	3.80 (4.77)	5.15 (6.61)	ns
Heterosexual males	23.32 (17.65)	19.05 (15.11)	23.94 (20.00)	25.89 (17.11)	ns
Heterosexual females	26.15 (19.10)	20.26 (14.52)	25.62 (18.30)	30.77 (21.57)	0.0429
Transgender (male to female)	4.16 (6.78)	5.10 (7.60)	4.89 (7.97)	2.89 (4.76)	ns
Transgender (female to male)	1.08 (2.20)	1.54 (2.76)	0.82 (1.80)	0.94 (2.04)	ns
White	28.3 (23.92)	31.93 (23.64)	30.05 (26.76)	24.51 (21.75)	ns
Black or African American	46.91 (29.11)	42.00 (25.26)	47.51 (30.20)	49.91 (30.82)	ns
Hispanic or Latino	19.30 (21.46)	20.00 (18.76)	19.46 (21.55)	18.70 (23.43)	ns
Asian	2.93 (8.73)	3.28 (7.43)	1.44 (3.36)	3.75 (11.74)	ns
American Indian or Alaskan Native	1.62 (7.89)	1.08 (1.77)	0.61 (1.22)	2.74 (12.12)	ns
Native Hawaiian or Pacific Islander	0.93 (3.66)	1.73 (5.37)	0.93 (3.96)	0.39 (0.80)	ns
Adolescents (ages 13-17 years)	8.17 (13.21)	7.18 (11.24)	7.26 (11.46)	9.66 (15.78)	ns
Young Adult (ages 18-29 years)	29.02 (16.34)	28.26 (12.96)	32.13 (18.09)	27.18 (17.21)	ns
Mid-Adult (ages 30-49 years)	42.45 (17.74)	41.03 (12.45)	42.15 (19.39)	43.80 (20.01)	ns
Older adult (ages ≥50 years)	20.36 (14.28)	23.54 (12.80)	18.46 (13.64)	19.36 (15.66)	ns
Annual Budget					
n (%)					
≥ $10,000,000	41 (25.95)	20 (47.62)	6 (14.63)	15 (20.00)	ns
$5,000,000 - $9,999,999	26 (16.46)	5 (11.90)	7 (17.07)	14 (18.67)	
$1,000,000 - $4,999,999	52 (32.91)	9 (21.43)	19 (46.34)	24 (32.00)	
$500,000 - $999,999	17 (10.76)	2 (4.76)	3 (7.32)	12 (16.00)	
$100,000 - $499,999	12 (7.59)	2 (4.76)	4 (9.76)	6 (8.00)	
< $100,000	2 (1.27)	0 (0.00)	0 (0.00)	2 (2.67)	

[3] p-values obtained using † Fisher's Exact Test or ‡ Chi-Square (ANOVA if not specified)
[4] Of the 232 CBOs that responded, only 175 had managers that responded.
[5] ns = p value >0.05

Don't know or refuse	8 (5.06)	4 (9.52)	2 (4.88)	2 (2.67)	
Percentage of Budget by Source					
mean (st. dev)					
CDC	14.67 (23.29)	13.42 (23.03)	11.61 (14.28)	17.38 (27.70)	ns
Other federal agencies	24.57 (28.55)	25.68 (29.84)	26.88 (27.29)	22.44 (28.85)	ns
City or County	15.68 (23.00)	15.26 (20.48)	15.78 (21.31)	15.86 (25.65)	ns
State	25.12 (31.56)	26.32 (31.05)	32.05 (33.21)	19.97 (30.31)	ns
Private	11.57 (19.02)	5.76 (10.18)	10.51 (15.09)	15.69 (23.91)	0.0345
Other	8.39 (21.21)	13.55 (25.11)	3.17 (11.77)	8.67 (22.85)	ns
Services Offered					
n (%)					
HIV Testing	147 (92.45)	42 (100.00)	40 (97.56)	65 (85.33)	0.0047†
Blood collection by venipuncture	77 (44.00)	42 (100.00)	35 (85.37)	0 (0.00)	< 0.0001†
Genital STD exams and treatment	44 (25.14)	41 (97.62)	3 (7.32)	0 (0.00)	< 0.0001†
Diagnosis/treatment of mental health conditions	49 (28.00)	28 (66.67)	13 (31.71)	8 (8.70)	< 0.0001†
Clinical care based on labs/exams	56 (32.00)	40 (95.24)	13 (31.71)	3 (3.26)	< 0.0001†
Prescribing medication	50 (28.57)	41 (97.62)	8 (19.51)	1 (1.09)	< 0.0001†
Dispensing medication	30 (17.14)	25 (59.52)	5 (12.20)	0 (0.00)	< 0.0001†
Providing/monitoring HIV treatment	44 (25.14)	35 (83.33)	9 (21.95)	0 (0.00)	< 0.0001†
Providing/monitoring opiate addiction treatment	29 (16.57)	18 (42.86)	9 (21.95)	2 (2.17)	< 0.0001†
Behavioral Interventions					
Individual	131 (86.18)	41 (97.62)	36 (87.80)	54 (78.26)	0.0285†
Group	125 (80.13)	33 (78.57)	38 (92.68)	54 (73.97)	ns†
Linkages					
Social Services	143 (95.97)	42 (100.00)	41 (100.00)	60 (90.91)	ns†
HIV Treatment	140 (94.59)	42 (100.00)	41 (100.00)	57 (87.69)	0.0211†
Partner Services	125 (84.46)	38 (90.48)	35 (85.37)	52 (80.00)	ns†
Substance Abuse/Harm Reduction	139 (93.92)	42 (100.00)	38 (92.68)	59 (90.77)	ns†
HIV Education and Outreach	140 (94.59)	40 (95.24)	40 (97.56)	60 (92.31)	ns†
Geography					
n (%)					
Midwest	29 (16.57)	5 (11.90)	7 (17.07)	17 (18.48)	
Northeast	42 (24.00)	10 (23.81)	9 (21.95)	23 (25.00)	ns‡
South	70 (40.00)	17 (40.48)	18 (43.90)	35 (38.04)	
West	34 (19.43)	10 (23.81)	7 (17.07)	17 (18.48)	

City Size					
n (%)					
Nonmetropolitan	11 (6.29)	3 (7.14)	5 (12.20)	3 (3.26)	
Small metropolis	39 (22.29)	8 (19.05)	7 (17.07)	24 (26.09)	ns‡
Medium metropolis	77 (44.00)	20 (47.62)	18 (43.90)	39 (42.39)	
Large metropolis	48 (27.43)	11 (26.19)	11 (26.83)	26 (28.26)	

Table 2. Awareness, Attitude, Intentions as Reported by Program Managers (n=175 CBOs)

Characteristic	All	High PrEP Readiness Index	Medium PrEP Readiness Index	Low PrEP Readiness Index	p-value[6]
	N = 175[7] n (%)	N = 42 n (%)	N = 41 n (%)	N = 92 n (%)	
Before today, heard of PrEP	119 (68.00)	40 (95.24)	39 (95.12)	40 (43.48)	< 0.0001
Client(s) requested PrEP information	91 (52.00)	37 (88.10)	29 (70.73)	25 (27.17)	< 0.0001
Client(s) were prescribed PrEP	32 (25.60)	25 (59.52)	3 (7.89)	4 (8.89)	< 0.0001
Intentions regarding PrEP					
Unlikely; unsafe, ineffective, or unethical	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0.009[8]
Clinical services not in mission	16 (13.11)	0 (0.00)	4 (10.53)	12 (27.27)	
Unsure; Need more information	8 (6.56)	3 (7.50)	1 (2.63)	4 (.09)	
Currently providing & meeting needs	23 (18.85)	16 (40.00)	2 (5.26)	5 (11.36)	
Likely; need more resources	75 (61.48)	21 (52.50)	31 (81.58)	23 (52.27)	

[6] p-values obtained using Fisher's Exact Test
[7] Of the 232 CBOs that responded, only 175 had managers that responded.
[8] Significance tested a dichotomized form of the variable (Likely; need more resources v. other)

Table 3. Regression Analysis of CBO patient demographics with PrEP Awareness: bivariate associations, multivariate associations, and stepwise regression

Characteristic	Crude OR (95% CI)[9]	Adjusted OR (95% CI)	Stepwise OR, α = 0.05 (95% CI)
Number of Full Time Employees	0.999 (0.997, 1.001)	--	--
Annual Budget			
≥ $10,000,000	ref		
< $100,000	0.323 (0.018, 5.644)	--	--
$100,000 - $499,999	0.645 (0.160, 2.606)	--	--
$500,000 - $999,999	1.048 (0.278, 3.957)	--	--
$1,000,000 - $4,999,999	1.075 (0.411, 2.812)	--	--
$5,000,000 - $9,999,999	0.726 (0.243, 2.172)	--	--
Primary Funding Source			
CDC	ref		
Other Fed	1.500 (0.357, 6.308)	--	--
State	1.333 (0.328, 5.419)	--	--
City or County	1.333 (0.276, 6.442)	--	--
Private	0.583 (0.110, 3.099)	--	--
Other	0.778 (0.133, 4.536)	--	--
Percent HIV Positive	1.271 (0.969, 1.668)*	--	--
Percent IDU	0.979 (0.956, 1.003)*	1.009 (0.957, 1.063)	--
PRS	9.204 (4.001, 21.177)**	5.127 (1.286, 20.442)	5.683 (1.412, 22.875)
Primary Sex of Clientele			
Men	ref	ref	
Women	0.278 (0.084, 0.917)**	0.255 (0.050, 1.312)	--
Primary Race of Clientele			
White	ref	ref	
Black	0.528 (0.158, 1.763)	2.628 (0.401, 17.244)	--
Other	0.072 (0.023, 0.227)*	1.961 (0.245, 15.718)	--
Primary Age Group of Clientele			
Middle Age	ref		
Young Age	0.353 (0.034, 3.682)	--	--
Adolescent	1.147 (0.127, 10.337)	--	--
Old Age	0.309 (0.077, 1.239)	--	--
Population Type			
Large metropolis	ref		
Nonmetropolitan	2.045 (0.393, 10.643)	--	--
Small metropolis	0.812 (0.332, 1.986)	--	--
Medium metropolis	0.945 (0.436, 2.051)	--	--

[9] * = p < 0.10; ** = p < 0.05

Table 4. Regression Analysis of CBO demographics with Clients Requesting Information about PrEP in the last year: bivariate associations, multivariate associations, and stepwise regression

Characteristic	Crude OR (95% CI)[10]	Adjusted OR (95% CI)	Stepwise OR, $\alpha = 0.05$ (95% CI)
Number of Full Time Employees	0.999 (0.998, 1.001)	--	--
Annual Budget			
≥ $10,000,000	ref		
< $100,000	0.640 (0.037, 10.975)	--	--
$100,000 - $499,999	0.213 (0.050, 0.909)	--	--
$500,000 - $999,999	0.914 (0.289, 2.893)	--	--
$1,000,000 - $4,999,999	1.024 (0.442, 2.372)	--	--
$5,000,000 - $9,999,999	0.873 (0.321, 2.371)	--	--
Primary Funding Source			
CDC	ref		
Other Fed	1.197 (0.357, 4.011)	--	--
State	1.491 (0.445, 4.996)	--	--
City or County	1.444 (0.375, 5.566)	--	--
Private	1.361 (0.281, 6.584)	--	--
Other	0.778 (0.159, 3.795)	--	--
Percent HIV Positive	1.020 (1.004, 1.036)**	1.020 (1.001, 1.039)	1.019 (1.001, 1.038)
Percent IDU	0.990 (0.968, 1.012)	--	--
PRS	4.906 (2.963, 8.124)**	2.231 (1.076, 4.626)	2.160 (1.061, 4.397)
Primary Sex of Clientele			
Men	ref	ref	ref
Women	0.241 (0.097, 0.604)**	0.225 (0.071, 0.716)	0.205 (0.069, 0.606)
Primary Race of Clientele			
White	ref	ref	ref
Black	0.433 (0.183, 1.024)	0.867 (0.233, 3.229)	--
Other	0.167 (0.069, 0.402)**	1.454 (0.275, 7.676)	--
Primary Age Group of Clientele			
Middle Age	ref		
Young Age	0.099 (0.010, 0.939)	--	--
Adolescent	0.991 (0.280, 3.509)	--	--
Old Age	0.623 (0.2123, 1.822)	--	--
Population Type			
Large metropolis	ref		
Nonmetropolitan	1.905 (0.449, 8.085)	--	--
Small metropolis	0.552 (0.235, 1.297)	--	--
Medium metropolis	0.693 (0.336, 1.440)	--	--

[10] * = $p < 0.10$; ** = $p < 0.05$

Table 5. Regression Analysis of CBO demographics with Prescription of PrEP in the last year: bivariate associations, multivariate associations, and stepwise regression

Characteristic	Crude OR (95% CI)[11]	Adjusted OR (95% CI)	Stepwise OR, α = 0.05 (95% CI)
Number of Full Time Employees	1.004 (1.001, 1.007)**	1.003 (0.998, 1.008)	--
Annual Budget			
≥ $10,000,000	ref		
< $100,000	0.001 (0.001, 999.99)**	--	--
$100,000 - $499,999	0.120 (0.014, 1.048)	--	--
$500,000 - $999,999	0.533 (0.137, 2.083)	--	--
$1,000,000 - $4,999,999	0.255 (0.088, 0.739)	--	--
$5,000,000 - $9,999,999	0.141 (0.028, 0.712)	--	--
Primary Funding Source			
CDC	ref		
Other Fed	0.231 (0.043, 1.251)	--	--
State	1.000 (0.167, 5.985)	--	--
City or County	0.167 (0.035, 0.785)	--	--
Private	0.125 (0.012, 1.333)	--	--
Other	0.450 (0.113, 1.785)	--	--
Percent HIV Positive	1.004 (0.992, 1.017)	--	--
Percent IDU	0.974 (0.936, 1.014)	--	--
PRS	5.186 (2.614, 10.286)**	4.654 (2.086, 10.384)	4.722 (2.267, 9.837)
Primary Sex of Clientele			
Men	ref	ref	
Women	0.331 (0.091, 1.213)*	0.598 (0.130, 2.758)	--
Primary Race of Clientele			
White	ref	ref	
Black	0.451 (0.172, 1.185)	0.902 (0.268, 3.034)	--
Other	1.140 (0.408, 3.184)**	2.284 (0.523, 9.968)	--
Primary Age Group of Clientele			
Middle Age	ref		
Young Age	0.001 (0.001, 999.99)	--	--
Adolescent	0.805 (0.200, 3.245)	--	--
Old Age	0.383 (0.080, 1.848)	--	--
Population Type			
Large metropolis	ref	--	--
Nonmetropolitan	1.238 (0.263, 5.836)	--	--
Small metropolis	0.688 (0.200, 2.366)	--	--
Medium metropolis	1.111 (0.424, 2.913)	--	--

[11] * = p < 0.10; ** = p < 0.05

Table 6. Regression Analysis of CBO demographics with Intention regarding PrEP (dichotomized): bivariate associations, multivariate associations, and stepwise regression

Characteristic	Crude OR (95% CI)[12]	Adjusted OR (95% CI)	Stepwise OR, α = 0.05 (95% CI)
Number of Full Time Employees	0.997 (0.994, 1.000)**	0.997 (0.994, 1.000)	0.997 (0.994, 1.000)
Annual Budget			
≥ $10,000,000	ref		
< $100,000	0.001 (0.001, 999.99)**	--	--
$100,000 - $499,999	2.222 (0.499, 9.894)	--	--
$500,000 - $999,999	0.714 (0.197, 2.589)	--	--
$1,000,000 - $4,999,999	1.333 (0.520, 3.417)	--	--
$5,000,000 - $9,999,999	3.889 (0.937, 16.134)	--	--
Primary Funding Source			
CDC	ref		
Other Fed	1.874 (0.459, 7.656)	--	--
State	1.104 (0.279, 4.369)	--	--
City or County	1.429 (0.297, 6.877)	--	--
Private	0.893 (0.156, 5.113)	--	--
Other	0.238 (0.033, 1.706)	--	--
Percent HIV Positive	1.008 (0.996, 1.020)	--	--
Percent IDU	1.028 (0.990, 1.068)	--	--
PRS	1.023 (0.659, 1.589)	--	--
Primary Sex of Clientele			
Men	ref	ref	
Women	0.583 (0.235, 1.448)	--	--
Primary Race of Clientele			
White	ref	ref	
Black	1.524 (0.650, 3.573)	--	--
Other	1.016 (0.377, 2.738)	--	--
Primary Age Group of Clientele			
Middle Age	ref		
Young Age	0.670 (0.104, 4.313)	--	--
Adolescent	0.521 (0.156, 1.741)	--	--
Old Age	0.397 (0.135, 1.172)	--	--
Population Type			
Large metropolis	ref		
Nonmetropolitan	1.273 (0.277, 5.845)	--	--
Small metropolis	0.327 (0.111, 0.969)	--	--
Medium metropolis	1.187 (0.479, 2.943)	--	--

[12] * = p < 0.10; ** = p < 0.05

Table 7. Resource Priorities of CBOs as Reported by Program Managers (n=175 CBOs)

Characteristic	All	High PrEP Readiness Index	Medium PrEP Readiness Index	Low PrEP Readiness Index	p-value[13]
	N = 175 n (%)	N = 42 n (%)	N = 41 n (%)	N = 92 n (%)	
Clinical Space					
High priority	39 (36.11)	15 (40.54)	11 (29.73)	13 (38.24)	
Medium priority	21 (19.44)	9 (24.32)	8 (21.62)	4 (11.76)	ns
Low/No Priority	48 (44.44)	13 (35.14)	18 (48.65)	17 (50.00)	
Counseling Space					
High priority	33 (30.00)	15 (39.47)	8 (21.62)	10 (28.57)	
Medium priority	26 (23.64)	8 (21.05)	12 (32.43)	6 (17.14)	ns
Low/No Priority	51 (46.36)	15 (39.47)	17 (45.95)	19 (54.29)	
Clerical Space					
High priority	24 (22.43)	13 (35.14)	6 (16.67)	5 (14.71)	
Medium priority	29 (27.10)	5 (13.51)	14 (38.89)	10 (29.41)	ns
Low/No Priority	54 (50.47)	19 (51.35)	16 (44.44)	19 (55.88)	
Counseling Staff					
High priority	46 (41.44)	18 (47.37)	18 (48.65)	10 (27.78)	
Medium priority	30 (27.03)	10 (26.32)	10 (27.03)	10 (27.78)	ns
Low/No Priority	35 (31.53)	10 (26.32)	9 (24.32)	16 (44.44)	
Clinical Staff					
High priority	56 (50.91)	20 (52.63)	21 (56.76)	15 (42.86)	
Medium priority	21 (19.09)	12 (31.58)	5 (13.51)	4 (11.43)	0.0328
Low/No Priority	33 (30.00)	6 (15.79)	11 (29.73)	16 (45.71)	
Clinical Equipment					
High priority	43 (39.45)	11 (29.73)	17 (45.95)	15 (42.86)	
Medium priority	25 (22.94)	9 (24.32)	12 (32.43)	4 (11.43)	ns
Low/No Priority	41 (37.61)	17 (45.95)	8 (21.62)	16 (45.71)	
Computer Equipment					
High priority	36 (33.03)	10 (26.32)	12 (32.43)	14 (41.18)	
Medium priority	32 (29.36)	14 (36.84)	11 (29.73)	7 (20.59)	ns
Low/No Priority	41 (37.61)	14 (36.84)	14 (37.84)	13 (38.24)	
Care Coordinators Staff					
High priority	48 (43.64)	19 (50.00)	20 (55.56)	9 (25.00)	
Medium priority	36 (32.73)	8 (21.05)	12 (33.33)	16 (44.44)	0.0194
Low/No Priority	26 (23.64)	11 (28.95)	4 (11.11)	11 (30.56)	

[13] All p-values obtained using Fisher's Exact

Client Info Materials					
High priority	83 (72.17)	29 (78.38)	30 (76.92)	24 (61.54)	
Medium priority	23 (20.00)	6 (16.22)	8 (20.51)	9 (23.08)	ns
Low/No Priority	9 (7.83)	2 (5.41)	1 (2.56)	6 (15.38)	
Eligibility Protocols					
High priority	68 (60.18)	19 (51.35)	30 (78.95)	19 (50.00)	
Medium priority	25 (22.12)	12 (32.43)	5 (13.16)	8 (21.05)	0.0267
Low/No Priority	20 (17.70)	6 (16.22)	3 (7.89)	11 (28.95)	
Financial Resource Guide					
High priority	85 (74.56)	31 (83.78)	31 (81.58)	23 (58.97)	
Medium priority	20 (17.54)	5 (13.51)	7 (18.42)	8 (20.51)	0.0077
Low/No Priority	9 (7.89)	1 (2.70)	0 (0.00)	8 (20.51)	
Outreach/Education Staff					
High priority	39 (36.11)	12 (31.58)	12 (33.33)	15 (44.12)	
Medium priority	37 (34.26)	16 (42.11)	14 (38.89)	7 (20.59)	ns
Low/No Priority	32 (29.63)	10 (26.32)	10 (27.78)	12 (35.29)	
Training: Program Manual/Guideline					
High priority	63 (56.25)	16 (44.44)	27 (69.23)	20 (54.05)	
Medium priority	27 (24.11)	13 (36.11)	9 (23.08)	5 (13.51)	0.0182
Low/No Priority	22 (19.64)	7 (19.44)	3 (7.69)	12 (32.43)	
Training: Community Education					
High priority	53 (46.49)	16 (44.44)	22 (56.41)	15 (38.46)	
Medium priority	38 (33.33)	13 (36.11)	13 (33.33)	12 (30.77)	ns
Low/No Priority	23 (20.18)	7 (19.44)	4 (10.26)	12 (30.77)	
Training: Medication Adherence					
High priority	46 (41.44)	17 (47.22)	16 (41.03)	13 (36.11)	
Medium priority	46 (41.44)	13 (36.11)	22 (56.41)	11 (30.56)	0.0051
Low/No Priority	19 (17.12)	6 (16.67)	1 (2.56)	12 (33.33)	
Training: Adapt Risk Reduction EBIs					
High priority	41 (36.61)	11 (30.56)	17 (43.59)	13 (35.14)	
Medium priority	43 (38.39)	15 (41.67)	17 (43.59)	11 (29.73)	ns
Low/No Priority	28 (25.00)	10 (27.78)	5 (12.82)	13 (35.14)	
Training: Linkage/Clinical Coordination					
High priority	45 (40.18)	12 (33.33)	21 (53.85)	12 (32.43)	
Medium priority	44 (39.29)	18 (50.00)	11 (28.21)	15 (40.54)	ns
Low/No Priority	23 (20.54)	6 (16.67)	7 (17.95)	10 (27.03)	
Training: Reimbursement/Billing					
High priority	69 (61.06)	23 (62.16)	29 (74.36)	17 (45.95)	
Medium priority	12 (10.62)	5 (13.51)	3 (7.69)	4 (10.81)	ns
Low/No Priority	32 (28.32)	9 (24.32)	7 (17.95)	16 (43.24)	

Appendix

Biomedical HIV Prevention Organizational Assessment Survey

RESPONDENT INFORMATION

1. What is your first name?

2. What is your last name?

3. What is the name of your CBO?

4. What is your main role in the organization? *(check one)*

   ☐ Management (Go to Section A)

   ☐ Direct client service provider (Go to Section B)

SECTION A: TO BE COMPLETED BY MANAGEMENT RESPONDENTS ONLY

Organization Characteristics

The purpose of this section is to learn about your organization, its clients, and its current HIV-related services.

5. What year did your organization begin?

6. How many full-time salaried staff are employed by your organization?

7. What city if your organization located in? *(If more than one site, please provide location for the site that provides services to the largest number of clients)*

8. What state is your organization located in? *(If more than one site, please provide location for the site that provides services to the largest number of clients)*

9. What is your organization's zip code? *(Enter 5 digit ZIP code. If more than one site, please provide the ZIP code for the site that provides services to the largest number of clients)*

10. What is your organization's total operating budget for the most recent full year? *(check one)*

    ☐ More than $10,000,000

    ☐ $5,000,000 – 9,999,999

    ☐ $1,000,000 - 4,999,999

    ☐ $500,000 – $999,999

    ☐ $100,000 -$499,999

    ☐ Less than $100,000

    ☐ Don't know or refuse

11. What percentage of your funding for HIV prevention activities comes from each of these sources? (Estimate the percentage of the total funding for each source- estimates should not total more than 100%)

    11a. CDC

    11b. Other federal agencies (e.g., HRSA, SAMHSA)

    11c. City or county health department

    11d. State health department

    11e. Private funders or donations

    11f. Other

12. Does your organization provide HIV testing?

- ☐ Yes
- ☐ No [skip to Q14]
- ☐ Don't Know [skip to Q14]

13. Approximately how many clients per month receive an HIV test? _____

14. Does your organization provide small group behavioral HIV prevention interventions?

- ☐ Yes
- ☐ No [skip to Q16]
- ☐ Don't Know [skip to Q16]

15. Approximately how many clients per month receive small group behavioral HIV prevention interventions? _____

16. Does your organization provide individual behavioral HIV prevention interventions?

- ☐ Yes
- ☐ No [skip to Q18]
- ☐ Don't Know [skip to Q18]

17. Approximately how many clients per month receive individual behavioral HIV prevention interventions? _____

18. Does your organization provide linkages to social services or financial benefits?

    ☐ Yes

    ☐ No [skip to Q20]

    ☐ Don't Know [skip to Q20]

19. Approximately how many clients per month receive linkages to social services or financial benefits? _____

20. Does your organization provide linkages to treatment and care for persons living with HIV?

    ☐ Yes

    ☐ No [skip to Q22]

    ☐ Don't Know [skip to Q22]

21. Approximately how many clients per month receive linkages to treatment and care for persons living with HIV? _____

22. Does your organization provide linkages to partner services for persons living with HIV?

    ☐ Yes

    ☐ No [skip to Q24]

    ☐ Don't Know [skip to Q24]

23. Approximately how many clients per month receive linkages to partner services for persons living with HIV? _____

24. Does your organization provide linkages to substance abuse treatment or harm reduction services?

    ☐ Yes

    ☐ No [skip to Q26]

    ☐ Don't Know [skip to Q26]

25. Approximately how many clients per month receive linkages to substance abuse treatment or harm reduction services?

26. Does your organization provide HIV education and community outreach?

    ☐ Yes

    ☐ No [skip to Q28]

    ☐ Don't Know [skip to Q28]

27. Approximately how many clients per month receive HIV education and community outreach?

28. By sex, what percentage of your organization's clients are:

    28a. Male

    28b. Female

29. What percentage of your organization's clients are current IDU (using non-prescription drugs by injection)?

30. What percentage of your organization's clients are Hispanic or Latino (of any race)?

31. By race/ethnicity, what percentage of your organization's clients would you say are (estimates in all categories should not total more than 100%):

    31a. White (and not Hispanic/Latino)

    31b. Black or African American (and not Hispanic/Latino)

    31c. Asian

    31d. American Indian or Alaska Native

    31e. Native Hawaiian or other Pacific Islander

32. By sexual orientation or gender identity, what percentage of your clients are:

(do not count persons in more than one category, estimates in all categories should not total more than 100%)

    32a. MSM (gay, bisexual, and other men who have sex with men)

    32b. WSW (lesbian, bisexual, and other women who have sex with women)

    32c. Heterosexual male

    32d. Heterosexual female

    32e. Transgender (male to female)

    32f. Transgender (female to male)

33. By age, what percentage of your organization's clients are:

    33a. Adolescent (ages 13-17 years)

    33b. Young adult (ages 18-29 years)

    33c. Mid-adult (ages 30-49)

    33d. Older adult (ages 50+)

34. By HIV status, what percentage of your organization's clients:

    34a. Report having HIV infection or who have tested positive for HIV at your organization (HIV-positive)

    34b. Report being without HIV infection or who have tested negative for HIV at your organization (HIV-negative)

    34c. Have an HIV status that is unknown to the staff

The purpose of this section is to learn about your organization, its interests in, and resources needed to provide clinical HIV treatment and prevention services. By clinical services we mean services that must be provided by licensed healthcare professionals such as doctors, nurse practitioners, clinical psychologists, or pharmacists.

35. Does your organization have a medical or clinical advisory board/committee?

    ☐ Yes

    ☐ No

    ☐ Don't know or refuse

36. Does your organization currently provide any of the following clinical services on-site? *(check all that apply)*

    ☐ 36a. Blood collection by venipuncture (phlebotomy) for laboratory tests

    ☐ 36b. Genital examination and treatment for sexually transmitted disease

    ☐ 36c. Diagnosis and treatment for serious mental health conditions

    ☐ 36d. Providing or recommending clinical care based on lab and exam results

    ☐ 36e. Writing prescriptions for treatment medications

    ☐ 36f. Dispensing of treatment medications (e.g., on-site pharmacy)

    ☐ 36g. Providing and monitoring clinical treatment for HIV infection

☐ 36 h. Providing and monitoring clinical treatment for opiate/narcotic addiction

☐ 36 i. None of the above [skip to Section B]

☐ 36 f. Don't know [skip to Section B]

37. Are these clinical services provided by: *(check all that apply)*

☐ 37a. Clinicians employed by your organization

☐ 37b. Clinicians employed by another organization but who provide services in your facilities (i.e., co-located services)

☐ 37c. Don't know

38. Are clinical patient records kept on-site?

☐ Yes

☐ No [skip to Section B]

☐ Don't know [skip to Section B]

39. Where are clinical history, examination, and laboratory results kept *(check all that apply)*

☐ 39a. In an electronic medical records database

☐ 39b. Filed in paper medical records

☐ 39c. In a web-based electronic medical records database

☐ 39d. Other

☐ 39e. Don't know

SECTION B: TO BE COMPLETED BY ALL RESPONDENTS

Recent research has shown that providing antiretroviral (ARV) medications can be effectively used to reduce the number of new HIV infections. There are three uses of ARVs that work well if patients take the medication as prescribed.

- Nonoccupational postexposure prophylaxis (nPEP)
    - If persons without HIV infection know that they are likely to have been exposed to HIV sexually or by contact with infected blood, the risk of HIV infection can be decreased by 80% if they begin taking 2-3 ARVs as early as possible (within 3 days of the exposure) and if they take them every day for 4 weeks. Because this involves starting ARV use just after a possible exposure to HIV (and continuing it for 28 days), this is called "postexposure prophyaxis", in other words, prevention after exposure. This was first developed for people who were exposed to the virus through their jobs, e.g., nurses who were accidently stuck by a needle after drawing blood from a person with HIV infection, or occupational exposure. Since sexual and IDU exposures are not work-related, this use of PEP is called "nonoccupational".
- Preexposure prophylaxis (PrEP)
    - If persons without HIV infection do not use condoms regularly during vaginal or anal sex and one of more of their sexual partners may have HIV infection, studies have shown that taking a single pill every day that contains 2 ARVs can reduce the risk of HIV infection by 75% or more. If the pill is not taken consistently, the protection is much reduced (0-40%). We do not know yet if this approach reduced the risk of HIV infection through injection drug use. Because this involves starting ARV use before a possible exposure to HIV (and continuing it daily), this is called "preexposure prophylaxis", in other words, prevention before exposure.
- Treatment as prevention (TasP)
    - The risk of getting HIV infection is very high for persons without HIV infection who do not use condoms regularly during sex with a regular partner or spouse who has HIV infection and is not taking antiretroviral medications for their own treatment. In a recent study, when the partner with HIV infection was put on effective ARV treatment, the risk that their uninfected partner would get HIV infection was reduced by 96%. Because

it involved treating people with HIV infection much earlier in their disease (e.g., with high CD4 cell counts) and it also prevents giving HIV to their partner, it is called “treatment as prevention”.

Because these prevention methods all involve prescribing ARVs to people and monitoring for side effects and safety, they can only be done by physicians and nurse practitioners licensed to prescribe medication. However, CBOs are critical to educating communities about these biomedical prevention methods and working with clinical providers as well as men and women who use ARVs for prevention.

The next set of questions is to help us assess how CBOs would like to be involved in biomedical prevention and what their training and resource needs are to take on new roles in the area of ARV-based HIV prevention with uninfected men and women at very high risk of getting infected.

40. Before today, had you heard of *(check all that apply):*

- ☐ 40a. nPEP
- ☐ 40b. PrEP
- ☐ 40c. TasP

41. In the last year, have any clients since requested information about any of the following? *(check all that apply)*

- ☐ 41a. nPEP
- ☐ 41b. PrEP
- ☐ 41c. TasP

42. In the last year, have any clients been prescribed nPEP (taking ARVs daily for 4 weeks after a possible HIV exposure) by staff at your organization

- ☐ Yes
- ☐ No [skip to Q45]

☐ Don't know [skip to Q45]

43. Was nPEP given to client(s) following: (check all that apply)

☐ 43a. A man who had consensual sex with a man

☐ 43b. A man who was raped by a man

☐ 43c. A woman who had consensual sex with a man

☐ 43d. A man who had consensual sex with a women

☐ 43e. A woman who was raped by a man

☐ 43f. IDU exposure

☐ 43g. Other exposure

☐ 43h. Don't know exposure

44. For a future survey, would you be willing to be recontacted and asked about your nPEP services?

☐ Yes

☐ No

45. In the past year, have any clients been prescribed PrEP (taking ARVs daily for more than one month to protect themselves against HIV infection) by staff at your organization?

☐ Yes

☐ No [skip to Q48]

☐ Don't know [skip to Q48]

46. Were the client(s) who received PrEP: *(check all that apply)*

- ☐ 46a. MSM (gay, bisexual, and other men who have sex with men)
- ☐ 46b. Heterosexual women
- ☐ 46c. Heterosexual men
- ☐ 46d. IDU
- ☐ 46e. Other
- ☐ 46f. Don't know

47. For a future survey, would you be willing to be recontacted and asked about your PrEP services?

- ☐ Yes
- ☐ No

48. In the past year, have any clients been prescribed (started ARV treatment early to protect their HIV-negative partner - not primarily for the benefit of their own health) by staff at your organization?

- ☐ Yes
- ☐ No [Skip to Q50]
- ☐ Don't know [Skip to Q50]

49. Were the client(s) who received TasP: *(check all that apply)*

- ☐ 49a. MSM (gay, bisexual, and other men who have sex with men)
- ☐ 49b. Heterosexual women
- ☐ 49c. Heterosexual men
- ☐ 49d. IDU
- ☐ 49e. Don't know

50. For nPEP, this organization is…

☐ 50a. Unlikely to support the use of nPEP, because it is unsafe, ineffective, or unethical

☐ 50b. Unlikely to support the use of nPEP, because clinical services are not in our mission

☐ 50c. Unsure about supporting the use of nPEP; we need to know more

☐ 50d. Currently providing nPEP at a level that meets our clients' needs

☐ 50e. Likely to support the use of nPEP for some clients, but need more resources

51. For PrEP, this organization is…

☐ 51a. Unlikely to support the use of PrEP, because it is unsafe, ineffective, or unethical

☐ 51b. Unlikely to support the use of PrEP, because clinical services are not in our mission

☐ 51c. Unsure about supporting the use of PrEP; we need to know more

☐ 51d. Currently providing PrEP at a level that meets our clients' needs

☐ 51e. Likely to support the use of PrEP for some clients, but need more resources

52. For TasP, this organization is...

☐ 52a. Unlikely to support the use of TasP, because it is unsafe, ineffective, or unethical

☐ 52b. Unlikely to support the use of TasP, because clinical services are not in our mission

☐ 52c. Unsure about supporting the use of TasP; we need to know more

☐ 52d. Currently providing TasP at a level that meets our clients' needs

☐ 52e. Likely to support the use of TasP for some clients, but need more resources

53. What additional INFORMATION do you need to make a decision about supporting use of nPEP? (enter text as needed)

54. What additional INFORMATION do you need to make a decision about supporting use of PrEP? (enter text as needed)

55. What additional INFORMATION do you need to make a decision about supporting use of TasP? (enter text as needed)

56. What additional RESOURCES would you need to support use of nPEP, PrEP and TasP? (Please indicate whether each one is a high, medium, low or not a priority for your organization)

		Resource	Priority Level for Addressing Service Needs (High, Moderate, Low, or Not a Priority)		
			nPEP	PrEP	TasP
Staff training and tools	56a.	☐ Guidelines or Program Manual			
	56b.	☐ for community outreach and education staff			
	56c.	☐ on medication adherence support			
	56d.	☐ for adaptation of EBI risk reduction counseling protocols			
	56e.	☐ on client linkage, support for retention in biomedical care, and coordination with clinical care sites			
	56f.	☐ on reimbursement/billing for clinical services			

57. What additional types of INFORMATION AND TOOLS FOR CLIENTS do you need to support the use of nPEP, PrEP and TasP? (Please indicate whether each one is a high, medium, low or not a priority for your organization)

		Resource	Priority Level for Addressing Service Needs (High, Moderate, Low, or Not a Priority)		
			nPEP	PrEP	TasP
Client information and tools	57a.	☐ Client information materials (handouts, videos, etc)			
	57b.	☐ Financial resource guide to assist clients			
	57c.	☐ Protocols and tools for screening clients for eligibility for biomedical intervention			

58. What additional types of STAFF do you need to support the use of nPEP, PrEP and TasP? (Please indicate whether each one is a high, medium, low or not a priority for your organization)

		Resource	Priority Level for Addressing Service Needs (High, Moderate, or Low, or Not a priorty)		
			nPEP	PrEP	TasP
Staff Needed	58a.	☐ Counseling staff			
	58b.	☐ Clinical staff (nurses, doctors, pharmacists)			
	58c.	☐ Outreach/education staff			
	58d.	☐ Care coordinators, peer navigators			
	58e.	☐ Clerical staff (e.g., records management, billing)			

59. What additional types of SPACE do you need to support the use of nPEP, PrEP and TasP? (Please indicate whether each one is a high, medium, low or not a priority for your organization)

		Resource	Priority Level for Addressing Service Needs (High, Moderate, or Low, or Not a priorty)		
			nPEP	PrEP	TasP
Space Needed	59a.	☐ for counseling and education			
	59b.	☐ for clinical procedures and visits			
	59c.	☐ More space, files and clerical			
Equipment Needed	59d.	☐ computers and software			
	59e.	☐ clinical care equipment and supplies			

60. What additional types of EQUIPMENT do you need to support the use of nPEP, PrEP and TasP? (Please indicate whether each one is a high, medium, low or not a priority for your organization)

		Resource	Priority Level for Addressing Service Needs (High, Moderate, or Low, or Not a priorty)		
			nPEP	PrEP	TasP
Equipment Needed	60a.	☐ computers and software			
	60b.	☐ clinical care equipment and supplies			

61. Where would you **prefer** to get resources about biomedical HIV prevention methods? *(check one box per row)*

Resource		Potential Sources				
		Local Health Department	Local Clinical Provider	CDC or CDC-funded Source	National or Regional Training Center	Other National or Regional Source
61a.	Clinical information for nonclinical staff (e.g, about medications, labs)	☐	☐	☐	☐	☐
61b.	Training for clinical staff in providing biomedical prevention and monitoring health effects	☐	☐	☐	☐	☐
61c.	Training for nonclinical staff to support client use (e.g., adherence)	☐\	☐	☐	☐	☐

61d.	Training for nonclinical staff in collaborating with clinical providers (e.g., linkage to care)	☐	☐	☐	☐	☐
61e.	Materials for community outreach and education	☐	☐	☐\	☐	☐
61f.	Materials for identifying clients who might be candidates for biomedical prevention	☐	☐	☐	☐	☐
61g.	Materials for clients using biomedical prevention	☐	☐	☐	☐	☐

62. What are your organization's primary strengths related to the support of biomedical HIV prevention methods?

63. What are your organization's primary challenges related to the support of biomedical HIV prevention methods?

Thank you.