




Community engagement and linkage to care efforts by peer community-health workers to increase PrEP uptake among sexual minority men

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Abstract

Purpose: Pre-exposure prophylaxis (PrEP) prevents HIV yet uptake remains suboptimal across the United States. This paper evaluates the impact of outreach activities led by nurse supervised community healthcare workers (CHWs) on the PrEP care cascade.

Methods: This is an observational programmatic evaluation of LGBTQ + community outreach between March 1, 2016, to March 31, 2020, as part of a public health initiative. Descriptive statistics are used to characterize the data by outreach type.

Results: 2,465 participants were reached. Overall, a PrEP appointment was scheduled for 94 (3.8%) with 70 (2.8%) confirmed to have completed a PrEP visit. Success for each type of community outreach activity was evaluated with virtual models outperforming face-to-face. Face-to-face outreach identified nine persons among 2,188 contacts (0.41%) completing an initial PrEP visit. The website prepmaryland.org identified 4 among 24 contacts (16.7%) and the PrEP telephone/text warm-line identified 18 among 60 contacts (30%). The PrEPme smartphone application identified 39 among 168 contacts (23.2%).

Conclusions: Face-to-face community outreach efforts reached a large number of participants, yet had a lower yield in follow-up and confirmed PrEP visits. All virtual platforms reached lower total numbers, but had greater success in attendance at PrEP visits, suggesting enhanced linkage to care.

KEYWORDS

Baltimore, HIV prevention, men who have sex with men, PrEP, sexual minority men

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1 | INTRODUCTION

In the United States (US), sexual minority men (SMM), including men who have sex with men (MSM), are at substantial risk for HIV infection (Centers for Disease Control & Prevention, 2017; Hess et al., 2017). Despite clear evidence that pre-exposure prophylaxis (PrEP) prevents HIV, PrEP uptake remains suboptimal across the United States, particularly in priority populations at greatest risk of HIV infection, such as MSM in Baltimore (Daughtridge et al., 2015; Fallon et al., 2017; Mitchell et al., 2019; Silhol et al., 2020). In Baltimore, Maryland, most new HIV infections occur among African American and Latino MSM less than 35 years of age (HIV in Maryland, 2017, 2018). Although PrEP awareness has increased among SMM overall, awareness is associated with higher levels of education, older age, Caucasian race, and social network connections and norms (Eaton et al., 2014; Hoots et al., 2016; Hosek et al., 2015). However, many SMM who are at-risk in Baltimore are younger, Black/African American, and from socio-economically disadvantaged communities. Data from the landmark HIV Prevention Trials Network 073 study demonstrated that peer-led interventions can improve the PrEP care cascade (i.e., PrEP awareness, PrEP initiation, PrEP adherence, and PrEP retention) for SMM, yet limited data exists on real-world effectiveness as a public health measure (Hucks-Ortiz et al., 2016; Wheeler et al., 2019).

Facilitators of PrEP initiation among SMM include access to sexual health services, sex-positive counseling, peer networks, the ability to obtain PrEP outside of a primary care provider's office, and higher perceptions of personal HIV risk (Underhill et al., 2014; Wade Taylor et al., 2014). Barriers include the underestimation of personal HIV risk, PrEP stigma, concerns of potential side effects, and costs (Bauermeister et al., 2013; Hannaford et al., 2018; Mayer et al., 2014; Petroll et al., 2017). These barriers are prevalent for Black and Latino SMM who experience higher levels of racism and discrimination in healthcare settings (Fallon et al., 2017; Quinn et al., 2018), have increased medical mistrust (Cahill et al., 2017; Eaton et al., 2014), and whose personal perception of their own HIV risk is discongruent with their acute HIV risk (Blumenthal et al., 2019). Peer-based interventions in which a self-identified SMM facilitates awareness, patient navigation, care coordination, and culturally congruent support are increasing in the U.S. Peer navigation by community-health workers (CHW) helps overcome medical mistrust, improves PrEP initiation and adherence, and reduces cost in research settings (Wheeler et al., 2019). However, optimal community-based approaches, including the setting and type of peer-based activities that translate into effective engagement and linkage for SMM remain limited.

While some have described that community-health activities are helpful to engage SMM (Young et al., 2018), few have quantified peer-based community outreach efforts and assessed the relative yield of participation and impact on PrEP initiation in real-world settings. Since 2016, our peer-led, nurse supervised, community-health worker team has participated in awareness, engagement, and linkage to care activities to encourage PrEP initiation among SMM in Baltimore, Maryland to improve the PrEP care cascade. The

objective of this paper is to evaluate the relative impact of multiple outreach activities on the PrEP care cascade including awareness, engagement, and linkage to care among SMM. This work occurred alongside a citywide campaign (The IMPACT Collaborative), the focus of which was to participate in events and activities to increase awareness and willingness to engage in PrEP services.

2 | METHODS

This observational programmatic evaluation explores the impact of outreach activities on the PrEP care cascade between March 1, 2016, to March 31, 2020, in Baltimore, Maryland as part of a public health practice initiative. Outreach was conducted by trained peer CHWs within The REACH Initiative, a center within The Johns Hopkins University School of Nursing. Activities involved educational outreach and HIV testing. Linkage to PrEP and/or HIV care services were offered based on interest and/or need. Our team of CHWs sought to perform outreach at community-based events focused on the sexual minority community, namely the lesbian, gay, bisexual, transgender, and queer (LGBTQ+) community, to increase PrEP awareness and HIV prevention messaging. Outreach events occurred during Pride, Black Pride and Maryland Leather events as well as during health fairs, street fairs, and at bars/clubs across Baltimore City. We also engaged in three forms of virtual, participant-initiated activities (i.e., a web-based contact via preprimaryland.org, a PrEP text-capable, telephone warm-line, and the PrEPme smartphone application), which were advertised on social media platforms and during community-based events. Peer CHWs tracked their outreach efforts using an HIV prevention cascade to document patient movement toward PrEP initial visit. All CHW activities were supervised by nurses certified in HIV treatment and prevention.

2.1 | Ethical approval

Although this work involved public health practice designed to increase PrEP linkage to care in collaboration with the Baltimore City Health Department, an Institutional Review Board reviewed and approved the protocol (IRB# 00212680).

2.2 | Preparation for peer navigation by community-health workers (peer CHW)

Peer CHWs were less than 25 years old and belonged to the Black/African American LGBTQ + community in Baltimore City. Educational backgrounds ranged from high school to bachelor preparation. The team consisted of two full-time peers, neither of which had formal health training nor a degree in a health-related field. Peer CHWs engaged in an initial 3-day intensive training to immediately prepare them for outreach and PrEP navigation activities followed by a 12-month, 4-session, competency-based

PrEP CHW curriculum that integrated adult learning principles and case-based presentations during their first year of employment. Each training session was offered by members of the IMPACT collaborative group with expertise on the respective PrEP topic. Standardized handouts were used to guide peer CHW educational sessions with nurses available to troubleshoot any issues that arose for linkage to care. Our referral network of PrEP providers included locations diverse in geographic settings, income requirements, which included free service provision at some sites, age-appropriate care for young adults, and LGBTQ + service providers. Transportation assistance to PrEP visits was offered as needed. Peer CHWs were also trained to assist with co-pay assistance programs to further reduce any associated costs.

2.3 | Measures and evaluation methods

Descriptive statistics including counts, frequencies, and proportions are used to describe the PrEP linkage to care cascade by outreach activity type. In order to accomplish linkage at community and venue-based activities, peer CHWs sought voluntary sign-up either through a paper-based sign-in sheet or a tablet-based enrollment feature of the smartphone application, PrEPme®. This process was designed to facilitate further peer CHW contact for the purposes of discussing PrEP and/or HIV in a one-on-one, private session. The sign-up sheet may or may not have included a real name, did not identify HIV status, and only required a primary form of contact (i.e., phone or email address). Individuals wanting follow-up contact voluntarily provided this information. Within 48 hr a peer CHW would contact the individual based upon their preferred contact method. Individuals who contacted the team through the website, warm-line or PrEPme app would provide the same contact details and receive a one-on-one follow-up with the peer CHW when contact was successful.

2.4 | Measures of the PrEP Care Cascade

There were five steps to the peer CHW outreach process for tracking PrEP care cascade outcomes. Retention in a PrEP program and adherence to PrEP was not tracked in this program. The five steps included:

1. **Approached.** Approached refers to participants having a brief (1–3 min) conversation with an outreach team member, either initiated by the team member or the participant. As this level of discussion did not require any personal information or health history, all individuals who had this brief-awareness conversation were counted including individuals who knew they were living with HIV and openly shared this information.
2. **Interested in follow-up contact.** Individuals were given an opportunity to speak privately with a peer CHW about PrEP and HIV prevention during or after all awareness activities. Options for follow-up contact included the following: phone call, face-to-face

meeting, text, email, or app-based chat feature within PrEPme. After an outreach event, a peer CHW would attempt contact via an individual's chosen approach. If a peer CHW communicated with the person in a private session, the linkage step was changed to "contacted." Three attempts were made to reach participants before the individual was deemed "not contacted." To avoid breaches of confidentiality, peer CHWs left generic, scripted voice mail messages for individuals who preferred to be contacted by phone, text, or email. Contact through the PrEPme chat is protected and encrypted using standards set forth in the Health Insurance Portability and Accountability Act (HIPAA).

3. **Interested in linkage.** After the private session, which included education, counseling, risk assessment, and a time for questions and answers, individuals were asked if they would like a PrEP referral. If they were interested in being linked directly by the peer CHW, the individual's cascade status was changed to "interested in linkage." Individuals not interested in referral or those interested in self-navigation would be identified as "not interested in linkage."
4. **Appointment scheduled.** Individuals were asked to work with the peer CHW to provide details about their insurance status and clinic preferences for appointment scheduling. Information was collected through telephone discussions or uploaded images of insurance cards using PrEPme. Persons without insurance were also provided linkage to PrEP care and/or research studies offering free clinical services, as well as, referrals to clinic-based health insurance navigators. Once a PrEP intake appointment was scheduled, the individual's linkage status was changed to "appointment scheduled."
5. **Completed intake.** To meet this step in the cascade, peer CHWs had to verify attendance at the scheduled initial PrEP appointment through follow-up with the individual. If follow-up contact was successful and the patient self-reported or the clinic confirmed completing the PrEP intake, this met the definition of "completed intake."

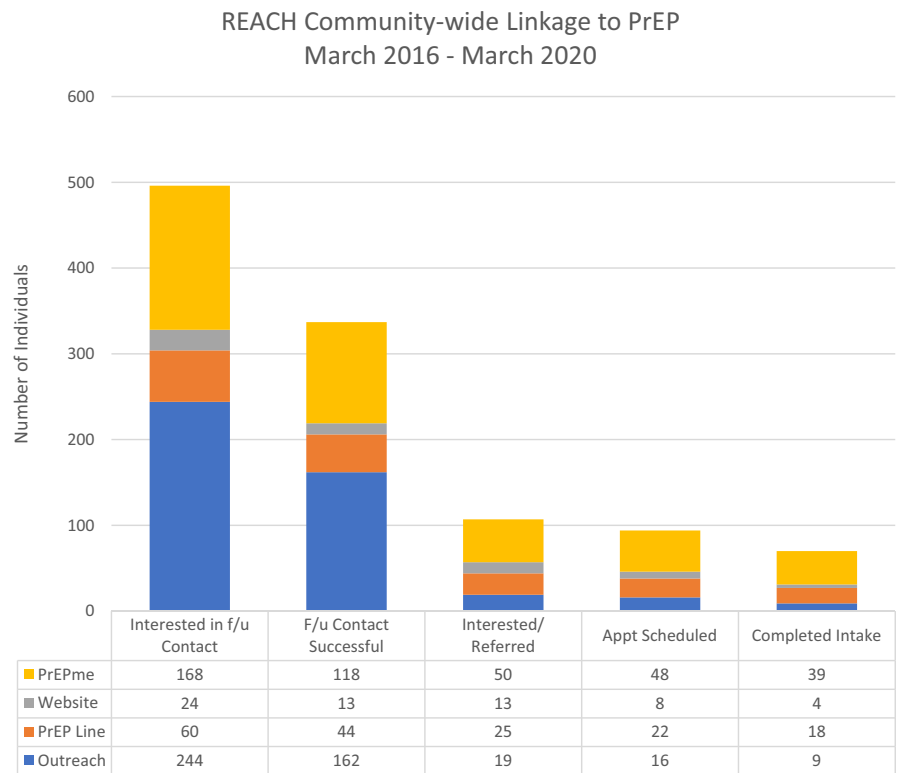
3 | RESULTS

Across all forms of outreach (i.e., community-based and virtual), our team had contact with 2,465 participants in Baltimore with PrEP appointments scheduled for 94 (3.8%) with 70 (2.8%) who completed the PrEP intake visit (Figure 1).

3.1 | Community-based outreach activities

The team participated in 54 community-based outreach activities, which reached 2,188 participants resulting in 11.2% (244/2,188) with reported interest in further discussion with a peer CHW. After three separate attempts to contact the individual, peer contact was successful in 66.4% (162/244); 11.7% (19/162) were interested in linkage to PrEP; 84.2% (16/19) had an initial PrEP appointment successfully scheduled; and 56.3% (9/16) completed the intake visit for

FIGURE 1 PrEP Linkage Cascade by Outreach Activity, Baltimore, Maryland, March 2016–March 2020 [Color figure can be viewed at wileyonlinelibrary.com]



PrEP. The overall success for community-based face-to-face outreach activities was 9/2,188 (0.41%).

2/26 (7.7%) Hispanic; and 1/26 (3.8%) Asian. The majority, 22/26 (84.6%) were cis-gender male and reported sex with other men 19/22 (86.4%).

3.2 | Virtual outreach activities

Virtual models were more successful. Online and telephone-based outreach resulted in 24 contacts through preprimaryland.org and 60 telephone contacts on the PrEP warm-line. All contacts in both groups (24/24 and 60/60) reported interest in being contacted by the peer CHW. Among preprimaryland.org users and warm line calls 54.2% (13/24) and 73.3% (44/60) were successfully contacted after three attempts, while 100% (13/13) and 56.8% (25/44) of those reported interest in a PrEP referral. Among those referred, 61.5% (8/13) and 88% (22/25) had a PrEP appointment successfully scheduled; and 50% (4/8) and 81.8% (18/22) completed the initial appointment for PrEP. The overall success for preprimaryland.org was 16.7% (4/24) and the PrEP warm-line was 30% (18/60).

The smartphone application, PrEPme, yielded 168 unique downloads; 100% (168/168) identified interest in further discussion with a peer CHW; follow-up contact was successful 70.2% (118/168); 42.4% (50/118) were interested in PrEP referral; 96% (48/50) had a PrEP appointment successfully scheduled; and 81.3% (39/48) completed the initial appointment for PrEP. The overall success for PrEPme was 23.2% (39/168).

Voluntary collection of demographic data was requested for individuals who attended the initial PrEP appointment with 26/60 providing their demographic details. Race/ethnicity was reported as: 15/26 (57.7%) Black/African American; 10/26 (38.5%) Caucasian;

4 | DISCUSSION

This paper details four years of community outreach activities to increase PrEP awareness, engagement, linkage to care with PrEP initiations in Baltimore City by a Johns Hopkins University Nursing Center. Overall, outreach efforts reached a large number of participants attending LGBTQ+-centric and health-based entertainment events, yet resulted in a relatively low yield of interest in one-on-one engagement with peer CHWs and even lower documented PrEP initiations. While community-based outreach activities had the lowest yield in an initial PrEP appointment (<1%), those activities also resulted in the largest community reach. Online and telephone-based outreach methods produced higher interest in one-on-one discussions with a peer CHW, but substantially fewer total follow-up contacts were successful compared to other methods. Peer CHWs were successful at making contact with more than 50% who expressed interest after three attempts, ranging from 54.2% from online to 73.3% with the warm-line. This suggests that encouraging multiple contact attempts is important for engagement for SMM. Having a warm line conversation yielded the greatest overall success with 30% of individuals completing their initial PrEP appointment. The PrEPme application and preprimaryland.org instant messaging features both resulted in fewer overall completed initial PrEP appointments compared to one-on-one warm-line conversations with 16.7%

and 23.2% noted, respectively, but were greater than the traditional venue-based outreach approaches we offered.

Engaging SMM and any sexual minority population in public health outreach and research are essential (Mayer et al., 2012) yet engagement in research has challenges that require additional efforts to ensure adequate participation, particularly among priority populations (Wheeler et al., 2018; White et al., 2019). To overcome these challenges, our approach, guided by recommendations from the literature (Wheeler et al., 2018), included: staffing with peer CHWs of color; full representation of the community in outreach materials; status neutral approach at venue-based outreach (i.e., offering options for individuals with and without HIV to avoid added stigma); multiple opportunities to engage with CHWs during and after traditional work hours; and allowing participants to engage with the CHW without sharing any specific identifying details. As such, we employed a well-trained, peer CHW team, which was predominantly represented by self-identified Black/African American LGBTQ + community members. The peer CHW team was supported by both nurses and nurse practitioners with years of experience in linkage to care and care navigation in this community. The team designed and initiated culturally tailored events in collaboration with the Black/African American MSM community along with other LGBTQ + community-based organizations. All online resources were designed to engage individuals who might be part of the same gender loving community, yet who do not consider themselves as gay or MSM and vetted with community stakeholders prior to launch. All outreach activities included details about PrEP for sexual and gender minority communities and the cis-gender, heterosexual community.

Communities of color were represented across all forms of outreach material and across all forms of sexual expression and gender representations. We believe this inclusive approach contributed to our success in conducting a high number of community-based events in Baltimore. Further, as part of the comprehensive 12-month training program, all peer CHWs were trained in the fundamental tenets of intersectionality (Bowleg, 2013) as well as trauma-informed care (Eaton et al., 2015; Fields et al., 2013). This training may have contributed to a relatively robust number of people who were willing to have follow-up one-on-one sessions with the peer CHWs. Unfortunately, once this conversation had completed, the immediate offer of PrEP linkage to care was not as successful. This rests in the need for continued engagement, follow-up, and ongoing communication with this community to move the individual's readiness for change from contemplation to preparation and action (Parsons et al., 2017).

There are several limitations of this evaluation of a public health outreach program. While most community outreach events focused on SMM of color, larger LGBTQ + events were open to all members of the Baltimore community. This form of outreach is limited to persons who identify or feel comfortable being seen in such spaces. Participants at community outreach events received information about virtual opportunities to interact with peer CHWs, which may have channeled some individuals into virtual outreach. We did not inquire about prior contact with a peer CHW at a community

outreach event. Similarly, all forms of our virtual outreach (website address, warm-line, and smartphone application) identify the word PrEP in the title, which may limit their use by certain community members. These issues may limit the generalizability of these data for populations who may have HIV risk through the same sex attraction, but who do not identify with the LGBTQ + community. We did not collect any demographic data at any outreach event and therefore cannot make assertions about our reach into any specific community, nor the duplication of individuals who had contact with our team at multiple events. However, this approach facilitated opportunities to engage and educate all participants at an event. It was not possible to determine the proportion of participants who could have self-navigated to PrEP services after outreach without peer CHW assistance. Further, preprimaryland.org and the PrEPme application offer details on how to self-navigate to the nearest PrEP provider by zipcode and we do anticipate that self-directed navigation did occur after peer CHW interactions. We did not monitor how many of the individuals who completed a peer CHW session chose to self-link and not utilize the CHW referral for supported linkage, therefore our PrEP appointment completion may be an underestimate. Also, the program did not ask for nor receive feedback on any messaging about PrEP or the CHW sessions. Differences in awareness about PrEP and levels of readiness to make an initial PrEP appointment may also explain the results. Individuals reached through a community event may have lower PrEP awareness compared to individuals who sought out contact and may be more likely to be contemplating initiation. Individuals contemplating PrEP may use the CHW session as a method for gathering more information about the process and not be ready to commit to direct linkage. Future programs may consider identifying individual readiness for each step of the PrEP cascade and tailor activities accordingly.

5 | CONCLUSIONS

Community-outreach must be nimble and consistently evolve. Future studies should continue to explore preferences for outreach and community engagement among sexual minority communities. Outreach efforts should include sufficient time to build trust, engage individuals over multiple encounters, and recognize individual-level readiness for activities at each step of the PrEP cascade. Competing priorities and intersecting social determinants of health must be explored from the perspective of the community as well as the peer CHW to determine ways to prioritize service delivery and needs. Alternative strategies to recruiting and engaging priority communities should be considered and further research is clearly needed to understand how to improve PrEP engagement.

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DATA AVAILABILITY STATEMENT

The data are based on a public health practice model and are not available for use.

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