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Research article

Keywords: PrEP, HIV prevention, Baltimore, men who have sex with men

Posted Date: March 2nd, 2020

DOI: https://doi.org/10.21203/rs.3.rs-15665/v1

Community awareness, engagement and linkage to care efforts by peer community-health workers to increase PrEP uptake among men who have sex with men in Baltimore, Maryland

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Abstract

Background: Despite clear evidence that pre-exposure prophylaxis (PrEP) prevents HIV, uptake remains suboptimal across the United States, particularly in populations at greatest risk of HIV infection, such as men who have sex with men (MSM) in Baltimore. This paper will evaluate awareness, engagement and linkage to care for PrEP activities through multiple outreach strategies.

Methods: This is an observational evaluation of the impact of LGBTQ+ outreach on the PrEP cascade between March 1, 2016 to March 31, 2019. Descriptive statistics are used to characterize the data and the linkage cascade by outreach type.

Results: Across all activities, our team had contact with 2,370 participants and scheduled a PrEP appointment for 84 (3.5%) with 58 (2.4%) who completed the intake visits. Among 54 venue-based activities, which focused on PrEP awareness messaging, 2,125 participants were reached with 11.4% (243/2125) interested in further discussion with a peer community-health worker (CHW). After 3 separate attempts to contact the individual, peer contact was successful in 66.2% (161/243); 11.2% (18/161) of those were interested in linkage to PrEP; 83.3% (15/18) had a PrEP appointment scheduled; and 53.3% (8/15) completed the PrEP visit. Online and telephone-based outreach resulted in 24 contacts through prepmaryland.org and 43 calls on the PrEP warm line, all of these indivduals reporting interest in further discussion with the peer CHW. Among prepmaryland.org users and warm line calls 54.2% (13/24) and 67.4% (29/43), respectively, were successfully contacted, while 100% (13/13) and 75.9% (22/29) of those reported interest in a PrEP referral. Among the referred, 61.5% (8/13) and 86.4% (19/22) had a PrEP appointment scheduled; and 50% (4/8) and 78.9% (15/19) completed the visit. The mobile app, PrEPme, yielded 178 unique downloads; 94.4% (168/178) had interest in further discussion with a peer

CHW; follow-up contact was successful 64.3% (108/168); 41.6% (45/108) were interested in PrEP referral; 95.5% (43/45) had a PrEP appointment successfully scheduled; and 72.1% (31/43) completed the intake visit.

Conclusions: Outreach efforts reached a large number of participants attending LGBTQ+ centric and health-based events, yet resulted in a relatively low total yield of engagement with peer CHWs and even lower documented PrEP initiations.

Introduction

In the United States, men who have sex with men (MSM) are at substantial risk for HIV infection (1,2). In Baltimore, Maryland, most new HIV infections occur among African American and Latino MSM less than 35 years of age (3). Despite clear evidence that pre-exposure prophylaxis (PrEP) prevents HIV, PrEP uptake remains suboptimal across the U.S., particularly in priority populations at greatest risk of HIV infection, such as MSM in Baltimore (4,5). Although PrEP awareness has increased among MSM generally, awareness is associated with higher levels of education, older age, Caucasian race, and social network connections and norms (6–8), while many at-risk MSM in Baltimore are younger and from socio-economically disadvantaged communities.

Facilitators of PrEP initiation among MSM 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 perceptions of higher personal HIV risk (9,10). Barriers include misinformation about HIV risk, PrEP stigma, concerns of potential side effects, and costs (11–14). These barriers intersect for MSM of color who have heightened medical mistrust (6,15), greater internalized homonegativity (13,16), greater experiences of racism in healthcare settings (4,16) and within the gay community (17), as well as lower social-network engagement in PrEP (18–21). Peer-based interventions in which a self-identified gay or bisexual male 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 some of the barriers identified above, improves PrEP initiation and adherence, and reduces cost in research settings (22,23). However, the optimal community-based approaches, including the setting and type of peer-based activities that translate into effective linkage and engagement remains limited.

While some have described that community health activities are helpful to engage MSM (24), 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, community-health worker team has participated in awareness, engagement, and linkage to care activities to encourage PrEP initiation among MSM in Baltimore, Maryland. The objective of this paper is to evaluate the impact of multiple outreach activities on the PrEP care cascade including awareness, engagement and linkage to care among MSM. 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.

Methods

This observational evaluation explores the impact of outreach activities on the PrEP care cascade between March 1, 2016 to March 31, 2019 in Baltimore, Maryland as part of a public health practice initiative. Outreach was conducted by trained peer CHWs by The REACH Initiative, a center within The Johns Hopkins University School of Nursing. Activities involved educational outreach, HIV testing, and a status neutral approach. Linkage to PrEP and/or HIV care services were offered based on interest and/or need. Our team sought to perform outreach at community-based events focused on the lesbian, gay, bisexual, transgder and queer (LGBTQ+) community to increase PrEP awareness and HIV prevention messaging. We also engaged in three forms of virtual, participant-initiated activities (i.e., a web-based contact portal on prepmaryland.org, a PrEP telephone warm line and the PrEPme smartphone application). Throughout the process, peer CHWs tracked their outreach efforts using a HIV prevention cascade.

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

Peer CHWs were less than 25 years old, and belonged to the African American LGBTQ+ community in Baltimore City. Educational backgrounds ranged from high school diplomas to bachelor preparation. Peers had no formal health training, but participated in 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 with coordinationi by The REACH Initiative of The Johns Hopkins University School of Nursing. Peer CHWs engaged in an initial 3-day intensive training to immediately prepare them for outreach and PrEP navigation activities followed by quarterly booster training sessions. Our referral network of PrEP providers included locations diverse in geographic setting, income requirements, which included free service provision in some sites, age appropriate care for young adults, and LGBTQ service providers. Transportant 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.

Evaluation methods and definitions:

Descriptive statistics including counts, frequencies and proportions are used to describe the PrEP linkage to care cascade by outreach activity type. To accomplish linkage at 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 mobile 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 hours a peer CHW would contact the individual based upon their preferred contact method. Individuals who contacted the team through the website, warmline 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.

Definitions for the PrEP Care Cascade:

There were five steps to the Peer CHW outreach process for tracking PrEP Care Cascade outcomes. These steps included:

1. Approached. Approached refers to participants having a brief (1-3 minute) 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, email, text, or app-based chat feature within PrEPme. After an outreach event, a peer navigator 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 HIPPA.

3. Interested in Linkage. After the private session, which included education, counseling, risk assessment, and a question/answer session, 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 continuum 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 referral."
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 continuum, peers had to verify attendance at a scheduled PrEP intake 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."

Results

Across all forms of outreach activities, our team had contact with 2,370 participants in Baltimore with PrEP appointments scheduled for 84 (3.5%) and 58 (2.4%) who completed the PrEP intake visit.

The team participated in 54 community-based outreach activities, which reached 2,125 participants resulting in 11.4% (243/2,125) with reported interest in further discussion with a peer CHW. After three separate attempts to contact the individual through their preferred method, peer contact was successful in 66.2% (161/243); 11.2% (18/161) were interested in peer CHW assistance with linkage to PrEP; 83.3% (15/18) actively worked with the peer CHW and had a PrEP appointment successfully scheduled; and 53.3% (8/15) completed the intake visit for PrEP. The overall success for community-based outreach activities was 8/2,125 (0.38%).

Online and telephone-based outreach resulted in 24 contacts through prepmaryland.org and 43 telephone contacts on the PrEP warm line. All contacts in both groups (24/24 and 43/43) reported interest in being contacted by the peer CHW. Among prepmaryland.org users and warm line calls 54.2% (13/24) and 67.4% (29/43) were successfully contacted after three attempts, while 100% (13/13) and 75.9% (22/29) of those reported interest in a PrEP referral. Among those referred, 61.5% (8/13) and 86.4% (19/22) actively worked with the peer CHW and had a PrEP appointment successfully scheduled; and 50% (4/8) and 78.9% (15/19) completed the intake visit for PrEP. The overall success for prepmaryland.org was 4/24 (16.7%) and the PrEP warmline was 15/43 (34.9%). The mobile app, PrEPme, yielded 178 unique downloads; 94.4% (168/178) identified interest in further discussion with a peer CHW; follow-up contact was successful 64.3% (108/168); 41.7%

(45/108) were interested in PrEP referral; 95.5% (43/45) actively worked with the peer CHW and had a PrEP appointment successfully scheduled; and 72.1% (31/43) completed the intake visit for PrEP. The overall success for PrEPme was 31/178 (17.4%).

Figure 1. Is the peer community health worker (CHW) PrEP Care Cascade, Baltimore, MD between March 2016 and March 2019.

Voluntary collection of demographic data was requested for individuals who attended the PrEP intake visit with 26/58 providing their demographic details. Race/ethnicity was reported as: 15/26 (57.7%) African American/Black; 10/26 (38.5%) Caucasian; 2/26 (7.7%) Hispanic; and 1/26 (3.8%) Asian. The majority, 22/26 (84.6%) were male and reported sex with other men 19/22 (86.4%).

Discussion

This paper details three years of community outreach activities to increase PrEP awareness, engagement, linkage to care and PrEP initiation among MSM in Baltimore City. 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 PrEP intake visits within this evaluation (<1%), those activities also resulted in the largest community reach. Online and telephone-based outreach methods produced higher yields 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% of the individuals who expressed interest, ranging from 54% from online to 67% warm line. This suggests that having protocols to encourage

multiple contact attempts is important for engagement and movement towards PrEP initiation. When a peer CHW was able to have a warm line conversation, this method had the greatest overall success with 34% of individuals completing their PrEP intake visit. The PrEPme app chat and prepmaryland.org instant messaging features both resulted in fewer completed PrEP intake visits compared to one-on-one warm line conversations with 16.4% and 17.4% noted respectively, but were greater than the traditional venue-based outreach approaches we offered.

We did not monitor how many of the individuals who completed a peer CHW session chose to not use the CHW for direct linkage. Differences in awareness about PrEP and levels of readiness to make a PrEP intake appointment may explain the results. Individuals reached through a community event may have lower awareness about PrEP compared to individuals who sought out contact and who may be more likely to be comtemplating initation. 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. The proportion scheduling a PrEP intake was fairly high across methods among those who expressed a desire for the Peer CHW to link. Future programs may consider identifying individual readiness for each step of the PrEP cascade and tailor activities accordingly.

Engaging MSM in preventative healthcare measures and research is essential (25) yet engagement in research has challenges that require additional efforts to ensure adequate participation, particularly among priority populations (26–28). To overcome these challenges, our approach was guided by recommendations from the literature. As such, we employeed a well-trained, peer CHW team, which was predemoniately represented by self-identifed 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 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 tennats of intersectionality (29) as well as trauma-informed care (30,31). 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. We believe this rests in the need for continued engagement, follow-up and ongoing communication with this community to move the individual readiness for change from contemplation to preparation and action (32).

Limitations of this evaluation of a public health practice program include the following. While most community outreach events focused on MSM 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. Similarly, all forms of our virtual outreach identify

the word PrEP in the web address, phone number and smartphone application, 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 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. 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, prepmaryland.org and the PrEPme app 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.

Conclusions

Future efforts should explore preferences for outreach and community engagement among MSM. Efforts should include sufficient time to attempt to engage individuals at multiple encounters and recognize individual-level readiness for activities at each step of the PrEP cascade. Competing priorities and intersecting social determinants of health should 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.

List of abbreviations

MSM. Men who have sex with men

PrEP. pre-exposure prophylaxis

CHW. community-health workers

LGTBQ+. Lesbian, gay, trangender, bisexual, queer +

Declarations

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

Consent for publication. Not applicable.

Availability of data and materials. Not applicable.

Competing interests. JEF has received an independent investigator award and an unrestricted educational grant from Gilead Science, Inc. Further, JEF, JL, KL have received Gilead support for a study entitled, "A Comparative Effectiveness Demonstration Project for Linkage and Retention in PrEP Care for Men who have Sex with Men" grant # IN-US-276-4422. These funds were not used as part of this work.

Funding. The authors would like to acknowledge the following funding sources: Gilead, Inc; Baltimore City Health Department Early Intervention Services (EIS) Grant Supported by the Ryan White Program; Health Department Demonstration Projects to Reduce HIV Infections and

Improve Health Outcomes for Men Who Have Sex with Men of Color at Risk for and Living with HIV Infection (Baltimore City Health Department Grant #PS15-1506); and ViiV Healthcare.

Authors' contributions. JEF, KL – developed the grants supporting this work; JEF, KL, JL, PS – developed the training and outreach materials as well as trained all peer CHWs; JEF, DTD, OH, JJ, KT – provided expertise in MSM outreach; all authors reviewed and contributed to the development of this manuscript.

Acknowledgements. We would also like to thank the peer navigators who offered time and energy on this project along with the people of Baltimore and The State of Maryland who engaged with our team throughout this process.

Authors' information. JF is a Professor, Nurse Practitioner providing HIV care and PrEP services and the Director of the REACH Initiative, a Johns Hopkins University School of Nursing Center with a focus on multiple infectious diseases, including the HIV care and prevention cascades.

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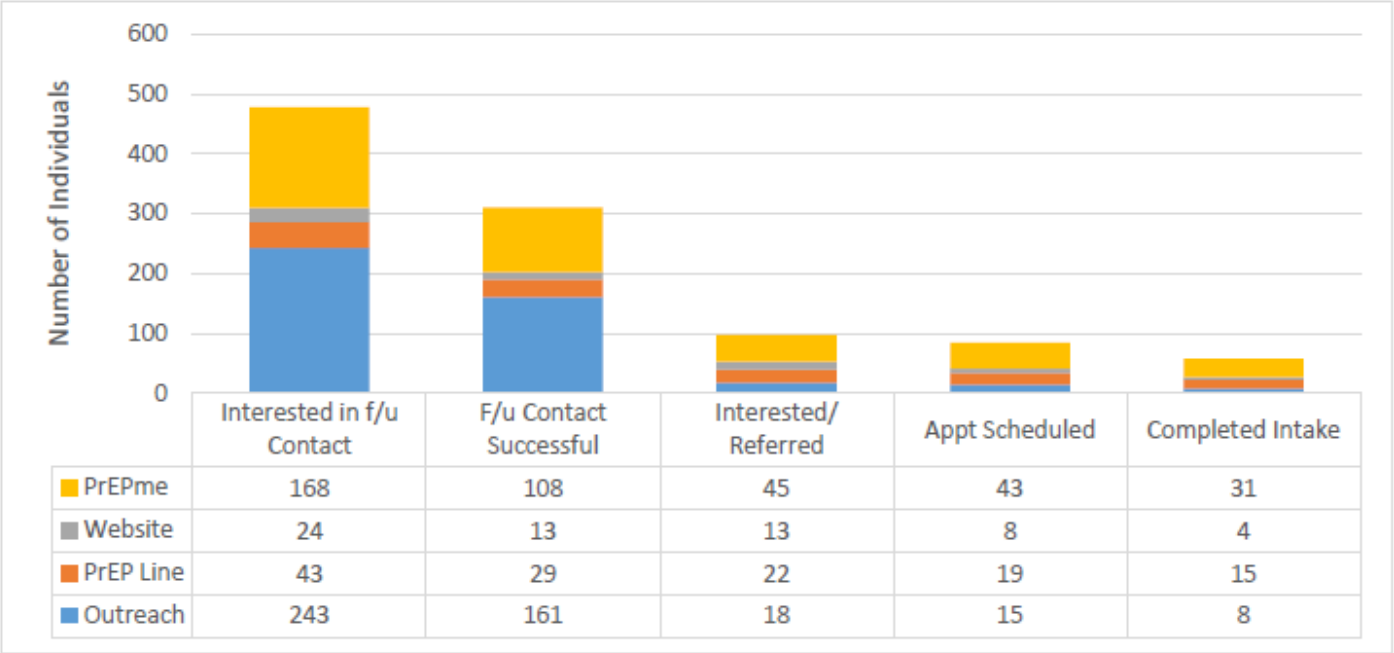
Figures

Figure 1. Legend of table: Excludes total outreach of 2,370.

Figures



	Interested in f/u Contact	F/u Contact Successful	Interested/ Referred	Appt Scheduled	Completed Intake
PrEPme	168	108	45	43	31
Website	24	13	13	8	4
PrEP Line	43	29	22	19	15
Outreach	243	161	18	15	8

Legend of table: Excludes total outreach of 2,370.

Figure 1

Peer Community Health Worker (CHW) PrEP Care Cascade, Baltimore, MD between March 2016 and March 2019