

HIV Preexposure Prophylaxis Service Delivery Models for Emergency Departments: A Qualitative Study

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Abstract

Background: Oral preexposure prophylaxis (PrEP) effectively prevents HIV but is underutilized in the United States, particularly among populations with higher incidence of HIV. Emergency departments (EDs), which often care for medically underserved individuals, could play a key role in expanding PrEP access. However, integrating PrEP into ED workflows presents challenges.

Methods: This qualitative study involved interviews with 22 stakeholders from 15 EDs and 4 sexual health clinics across the United States. Participants included ED leaders, providers, and navigators. The data were analyzed using a PrEP care cascade model, focusing on provider buy-in, patient identification, education, PrEP initiation, and linkage to care.

Results: Key barriers included limited provider knowledge, ED priorities focused on acute care, and the reliance on grant funding without long-term plans for sustainability. Successful programs relied on ED champions to advocate for PrEP and improve staff engagement. Some EDs offered same-day PrEP prescriptions or starter packs, which improved uptake, but most relied on referrals and had low follow-up rates. Patient identification strategies, such as using navigators or risk scores, varied across sites. Education was often led by ancillary staff, as ED providers had limited time and training. Sustainability remained a major challenge, as most programs were dependent on short-term funding.

Conclusions: To expand PrEP access in EDs, it is essential to address systemic barriers, improve provider training and establish sustainable funding models. Streamlined workflows, dedicated staff, and targeted interventions can help EDs play a more active role in HIV prevention.

Plain Language Summary

HIV Pre-Exposure Prophylaxis in the Emergency Department: A Qualitative Study

Why was the study done? Preexposure prophylaxis (PrEP) is a medication that can prevent HIV, but many people in the United States who could benefit from it do not use it. High-risk groups, such as people without regular healthcare or those facing stigma, often cannot access PrEP. Emergency departments (EDs) treat many of these individuals, so they could be good places to provide PrEP. However, offering PrEP in EDs is not common, and little is known about what helps or hinders these efforts. This study looked at the challenges and successes of starting PrEP programs in EDs. What did the researchers do? The researchers interviewed 22 people involved in PrEP programs at 15 EDs and 4

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sexual health clinics. These people included ED doctors, nurses, program coordinators, and researchers. They talked about their experiences with PrEP programs, including how patients were identified, how PrEP was offered, and what worked well or caused problems. The researchers analyzed this information to understand the steps involved in making PrEP available in EDs and to identify common barriers and solutions. What did the researchers find? The researchers found that starting PrEP programs in EDs is difficult. Many ED staff do not know enough about PrEP, and EDs are often focused on treating immediate health problems rather than providing preventive care. Some EDs had “champions” who promoted PrEP and helped make it a priority, which was key to success. While a few EDs gave patients same-day PrEP prescriptions, many relied on referring patients to clinics, which often led to poor follow-up. Most programs depended on temporary funding and did not have long-term plans to keep the services running. What do the findings mean? EDs could play a role in preventing HIV by offering PrEP, but challenges need to be addressed. Training ED staff about PrEP, finding ways to integrate it into busy ED workflows, and securing ongoing funding are critical steps. With these changes, more people could access PrEP.

Keywords

prevention programs, healthcare access and disparities, access barriers, prEP (preexposure prophylaxis), implementation science

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Introduction

Oral preexposure prophylaxis (PrEP) is a highly effective method for reducing HIV transmission.¹⁻³ Despite efforts to bring PrEP to scale in the United States, it remains underutilized due to an array of structural, provider, and individual-level barriers. Moreover, significant health disparities persist in access to PrEP.⁴⁻⁶ Groups with high HIV incidence are often marginalized, economically and socially vulnerable, and lack access to primary healthcare.⁷⁻¹⁰ These groups face intersecting structural and social inequalities, including racism, homophobia, transphobia, housing instability, food insecurity, lack of insurance, undocumented status, substance misuse, and other mental health challenges.¹¹⁻¹⁶

Emergency departments (EDs) offer a strategic opportunity to reach individuals and communities disproportionately affected by HIV, as they serve large numbers of individuals who are not engaged in primary care, are medically underserved, and often unsure or underinsured. Many users of the ED also belong to racial, ethnic, and sexual or gender minority groups—populations with high HIV incidence.¹⁷⁻²⁰ Further, EDs increasingly treat people with non-HIV sexually transmitted infections (STIs), which can also indicate a need for PrEP. Between 2008 and 2013, there was a 39% increase in ED visits involving STI diagnoses, with these patients typically being younger, predominantly nonwhite, and covered by public insurance.²¹ This trend highlights the potential for EDs to offer PrEP services to individuals facing multiple vulnerabilities related to populations with greater likelihood of HIV infection. Furthermore, EDs have demonstrated success in implementing other public health interventions, such as treatment for substance use, hepatitis C (HCV), and HIV testing.^{22,23} They have also been leaders in offering both occupational and nonoccupational postexposure HIV prophylaxis.^{24,25}

Despite these successes, the readiness and capacity of EDs to integrate PrEP remains unclear. Previous demonstration projects introducing PrEP in EDs have been limited and achieved modest success in initiating patients on PrEP during or after their visit.²⁶⁻²⁸ Several institutional, provider, and patient-level challenges may hinder broader implementation of PrEP programs in EDs. These challenges include an ED culture that prioritizes urgent and emergent care over preventive services, workflow disruptions, limited provider knowledge and training on PrEP, financial sustainability, the need for successful linkage of patients for ongoing follow-up, and patient reluctance to engage in screenings unrelated to their primary complaint.^{29,30}

In this qualitative study, we explored the anticipated and actual challenges and successes of implementing PrEP programs in EDs by conducting interviews with stakeholders involved in these initiatives in the United States.

Methods

The study adhered to the Consolidated Criteria for Reporting Qualitative Research 32-item checklist to ensure transparency in reporting and methodological rigor.³¹

Study Design and Population

We conducted a qualitative study to identify strategies and challenges to implementing PrEP in urban EDs located in high HIV prevalence settings. Between February and November 2022, we conducted semistructured, in-depth interviews with stakeholders, defined as individuals who held ED leadership roles or worked in EDs and who were involved in planning, implementing or participating in ED-based PrEP programs in the United States. The stakeholders included ED physician leaders and administrators, nurse managers, front-line physicians, nursing staff,

researchers based in the ED, support staff, and PrEP navigators as well as clinic providers receiving ED referrals for PrEP. Non-ED staff were recruited for interviews because they received referrals from the ED or played a role in navigating patients into follow-up care, providing valuable insight into the full scope of the PrEP care cascade. Furthermore, at certain sites, non-ED staff (eg, researchers, infectious disease physicians) were responsible for developing and implementing PrEP programs within the ED, making their perspectives essential. Participants were recruited through the study team's collegial networks, snowball referrals, and research contacts identified in research reports and publications. Recruitment aimed to enroll a diverse representation of staff types (MD, RN, support), ED settings (academic vs nonacademic), patient populations (adult vs pediatric), and geographic regions.

Potential participants were invited via a first email, with a follow-up email sent 1 week after the initial invitation to those who did not respond. Those who did not reply after the second email were considered nonresponders. Individuals who responded and agreed to participate were scheduled for a semistructured interview. We anticipated that 25 interviews would be necessary to reach thematic saturation—the point at which no new information emerges.

Interview Guide Development and Measures Domains

The interview guide was designed to explore 3 broad topic areas: (1) *Work and setting characteristics* (eg, role in the ED, training, years in service, work position, gender identification, average daily and annual ED patient census, characteristics of patient population); (2) *HIV/STI prevention services in the ED* (eg, routine HIV testing offer, other HIV/STI prevention services routinely provided in ED) and (3) *PrEP experience* (eg, how ED came to offer PrEP, workflow, follow-up clinical management, strengths and weaknesses of current PrEP program, potential strategies to address barriers to offering PrEP, dedicated PrEP staff). These 3 areas were informed by a combination of factors, including existing literature, our direct experience working in a New York City ED, and findings from a prior study conducted by our team on PrEP in diverse healthcare settings, which included several EDs in the sample.³²

The initial draft of the interview guide was reviewed by the investigators and subsequently revised. During the interview phase, interviewers met weekly with the entire study team to refine the guide based on the interviewers' feedback. This iterative feedback ensured consistency while addressing nuances specific to different stakeholder groups. The topic guide is included as Supplemental Material.

Study Procedures

Five trained qualitative interviewers (SH, TGA, CR, EC, and JP) conducted interviews using the Zoom™ video

communication platform (San Jose, CA). Interviewers had no prior relationship with participants they interviewed, nor did participants know anything about the interviewer prior to their interview. No attempts were made to match interviewer/interviewee genders or other characteristics. All interviewers were members of a study team exploring ED delivered PrEP and thus had working knowledge of PrEP delivery in this setting.

After each interview, the interviewer briefly summarized key facilitators and barriers to PrEP implementation, as well as organizational culture, provider and patient characteristics. Each interview lasted approximately 45 min and was audio-recorded and transcribed verbatim. Transcripts were not returned to study participants prior to coding for comments or corrections. Participants received a \$50 gift card for participation.

Data Analysis

Interview transcripts were analyzed using template analysis methods, a rapid data analysis technique that uses a flexible form of thematic analysis.³³ A coding framework was developed to summarize the data and allowed for comparing perspectives and patterns related to PrEP implementation among stakeholders from diverse EDs.

Themes were identified and categorized according to an ED PrEP care cascade model (Figure 1). This model was developed by the investigators with input from a community collaborative comprised of ED leadership, ED researchers, front-line ED physicians, community health leadership, LGBTQ health experts, and New York State and New York City Department of Health employees. The ED PrEP care cascade starts with buy-in and then progresses to patient identification, PrEP education and counseling, motivation to begin PrEP, PrEP initiation, PrEP referral, and linkage to care. The ED PrEP cascade differs from other published PrEP care cascades in that it focuses on the steps of PrEP initiation most relevant to ED patient flow and most likely to be accomplished during a single ED visit.^{34,35} The initial coding template, based on the ED PrEP cascade, was piloted and revised by 6 coders (SH, TGA, JEM, LJB, EC, and CR). After revisions, it was applied to all interview transcripts, with analysis performed by 3 coders (EC, SH, and TGA). All coders had a collective understanding of the state of PrEP implementation in U.S. EDs. Study participants did not provide feedback on the coders' analysis.

The ED PrEP cascade was used as the basis for the coding structure because it serves as a model for intervention development and future implementation efforts. By mapping the PrEP implementation trajectory, the cascade helps pinpoint gaps and strengths along different stages in the process, guiding the design and pilot testing of a multi-component PrEP ED intervention focused on implementation strategies, implementation outcomes, and intervention effectiveness.

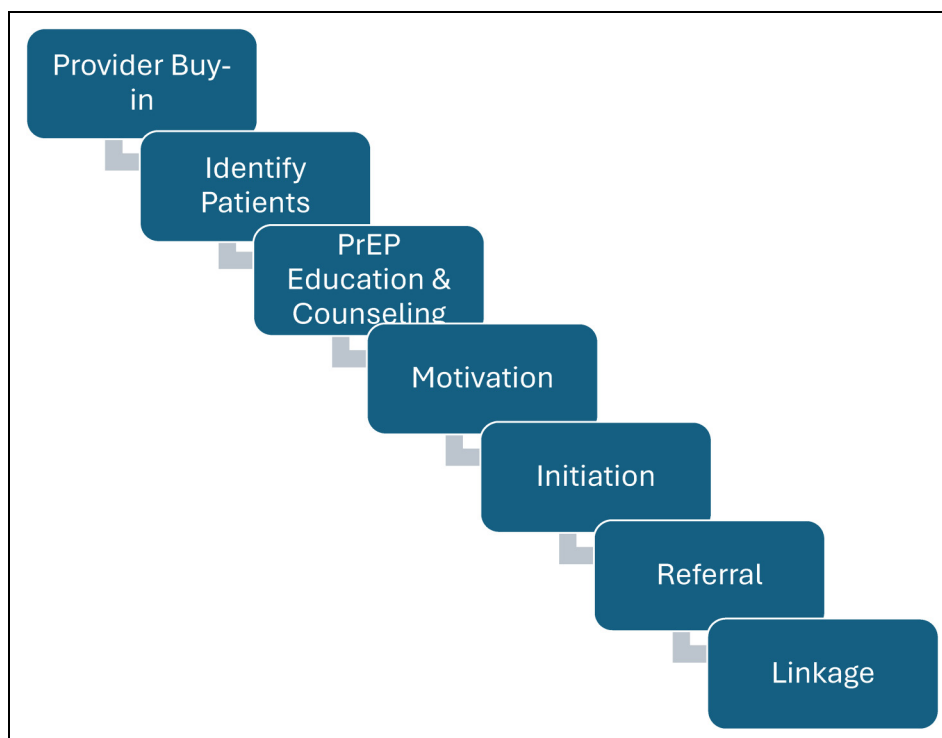


Figure 1. PrEP Care Cascade Model.
PrEP, Preexposure Prophylaxis.

Ethics Approval

The study protocol was approved by the New York Psychiatric Institute (NYSPI) Institutional Review Board (Protocol No. 8239), which determined that it was not human subjects research.

Results

Characteristics of Participants and Practice Settings

Of the 33 individuals contacted, 23 responded to either the first or second invitation, of whom 22 from 15 different practice settings agreed to participate and completed the interview. Among those interviewed, 15 were ED staff members (6 adult physicians, 2 pediatric physicians, 1 Chief of Service, 1 advanced practice nurse, 1 investigator, 3 navigators/health educators, 1 program manager) and 5 were non-ED staff (1 advanced practice nurse, 2 infectious disease physicians, 1 doctoral student, 1 health educator) (Table 1). Eleven participants were female, 10 male, and 1 identified as transgender. Fourteen had been in their role for over 5 years. Geographically, participants practiced in New York, Washington DC, Texas, California, Ohio, Illinois, and Colorado.

Among the ED staff, 5 worked in urban academic public hospitals, 4 in urban academic private hospitals, 2 in urban nonacademic public hospitals, 2 in urban

nonacademic private hospitals, and 2 in other settings. Non-ED staff worked in 4 comprehensive sexual health clinics. Most (13) of the EDs had estimated annual patient volumes between 60,000 and 80,000, while 1 had fewer than 20,000 visits, and 5 had more than 80,000 visits per year.

Eight of the 15 EDs did not provide any PrEP services at the time of the interviews, although 3 were in the planning stages. Seven EDs offered some PrEP services, either partially (2) or fully (5) implemented. The characteristics of the ED-PrEP programs that were implemented and those that planned to implement are detailed in Table 2. Most programs were grant-funded and lacked sustainability plans once the funding ended.

ED PrEP Care Cascade Themes

Provider Buy-in. The buy-in phase of the PrEP care cascade includes provider education, PrEP guidelines or protocols, the presence and effect of an ED champion, and engagement with hospital opinion leaders and ED staff. The interview questions also addressed how PrEP programs aligned with ED goals and culture and how ED PrEP could meet patient and community needs.

Participants Reported That Education to Build Provider Knowledge on PrEP is Suboptimal. Participants noted that

Table 1. Characteristics of Participants and Settings.

	N
Primary profession	
ED staff (N = 15)	
ED attending physician	8
Attending only	3
Attending + other role (investigator, administrative/ leadership)	5
ED chief	1
ED advanced practice nurse	1
ED investigator	1
ED navigator	3
ED program manager	1
Non-ED staff (N = 5)	
Investigator	4
Advanced practice nurse	1
ID physician	2
Doctoral student	1
Health educator/program manager	1
Both (N = 2)	
Health educator in ED/health educator, program manager in sexual health clinic	2
Gender	
Female	11
Male	10
Gender nonconforming	1
No. of years in role	
<1 year	3
1-4 years	5
5+ years	14
Setting	
ED staff (N = 15)	
Adult ED in urban academic hospital (public)	5
Adult ED in urban academic hospital (private)	4
Adult ED in urban nonacademic hospital (public)	2
Pediatric ED in urban academic hospital (private)	2
Other (eg, in multiple types of EDs)	2
Non-ED staff (N = 5)	
Comprehensive sexual health center in urban academic hospital (private)	4
Research university in urban setting (private)	
Both (N = 2)	
Adult ED in urban academic hospital (private)/ comprehensive sexual health center in urban academic hospital (private)	2
State	
New York	16
Colorado	1
California	1
Illinois	1
Ohio	1
Texas	1
Washington	1

ED, emergency department.

while materials to educate providers on PrEP were available in the ED, they were often underutilized. “There’s definitely been education available to our team through the DOH. I’m not sure if there’s really any for doctors,

PAs, and nurses, though. I mean, I’m sure there’s available but we don’t advertise it to them, and I know they’re so busy. Probably isn’t utilized” (9001—ED Program Manager). Another participant explained that while didactic materials on HIV testing were provided to resident physicians and staff, “PrEP still wasn’t on the radar that much; it was more about the offer of the [HIV] test and acceptance” (9003—Non-ED Health Educator). Similarly, an infectious disease physician remarked, “there haven’t been a lot of formal interventions” (9017—ID Physician).

PrEP guidelines and protocols were generally available only in the context of research in the ED rather than in clinical practice. One ED researcher explained, “we use ... PrEP prescribing guidelines essentially ... but that’s just through research” (9004—ED Investigator). A physician at another site noted, “It’s the provider at their own discretion and training, you know, talks to the patient and decides what’s appropriate ... But there’s no specific algorithm” (9009—Internal Medicine physician).

Discussions around buy-in frequently focused on the role of an ED champion, typically a person who supports the implementation of the program, is respected by their colleagues and provides direct education, support, case follow-up and program publicity.³⁶ In the context of ED PrEP, this person was seen as having multiple roles, “She’s an emergency medicine physician, and she’s the PI for this grant, so she does a lot of pushing the other attendings, reminding them to ask about this, having conversations about it” (9001—ED Program Manager). The champion was also the one who tended to work closely with other departments to figure out the referral pathways. At one site, the champion, “*works closely with our primary care clinic that they’d [the patients] be linked to*” (9001—ED Program Manager). As one participant noted, “Having a site champion for that is extremely important. You have to have somebody who’s a cheerleader on a constant basis. Nursing staff, especially these days, tends to be in and out, residents are in and out, you know, so it’s an ongoing process” (9003—Non-ED Health Educator). Another participant noted, “But without like a champion or whatever in the department, it’s not gonna go anywhere” (9004—ED Investigator).

Sites that had attempted to engage with hospital opinion leaders and ED staff had mixed experiences. One individual noted that after engaging ED leaders and staff it was “pretty clear that the ED faculty are not really going to want to have anything to do with this” (9004—ED Investigator). However, at a different site, this engagement was more positive because “the ED really wanted it to happen. So I think that helps, you know, if you have leadership on both sides saying like, this will be really good for both of our programs” (9009—Internal Medicine physician).

Table 2. Implementation Stage of ED-PrEP Programs.

PrEP Implementation Stage	Program Description	Location
ED offers PrEP-fully executed as planned (<i>N</i> = 5)	PrEP screening, navigation, and linkage program in the ED. Patients are identified for PrEP by navigators based on indications for HIV risk in the electronic medical record and presenting chief complaints. Eligible and interested patients are referred to the hospital's ID clinic for PrEP initiation.	New York
	PrEP screening program with immediate PrEP initiation in the ED using a PrEP "starter pack." Dedicated health educators can provide HIV and HCV testing and can offer PrEP education, screening, and referral to out-patient care. The health educators also follow-up with patients, facilitating linkage.	New York
	PrEP was offered as a research study that identified PrEP eligible cis-gender women, offered them computer-based motivation intervention to raise awareness of risk, and then referred them to another agency for PrEP follow-up.	Texas
	Sexual wellness clinic assesses need for PrEP, does labs, gives a starter pack, and arranges follow-up at a community-based clinic.	Illinois
	Dedicated health educators provide HIV and HCV testing and can offer PrEP education, screening and referral.	New York
ED offers PrEP partially executed as planned (<i>N</i> = 2)	Grant-funded program building on their linkage model for HIV positive patients. The program uses ED embedded patient navigators to screen patients for HIV risk using an extensive questionnaire. If they are at-risk and HIV-negative, they are referred to a PrEP navigator for follow up.	Ohio
	Grant-funded program to offer PrEP to people presenting in the ED. Targeted offer based on patient risk factors. Navigators make the offer and work 9 a.m.-10 p.m. each day. Enrollees are given a 10-day PrEP starter pack and linked to care.	Washington D.C.
ED does not offer PrEP—plans to offer PrEP services (<i>N</i> = 3)	In the process of building a prevention arm into an existing HIV screening program, with the support of industry funding.	California
	Plans to design R01 study for integrating PrEP into the ED. The participant currently refers patients whom he believes are PrEP-eligible to ID clinic for PrEP counseling and initiation.	Colorado
	Developing program that will test 2 strategies for PrEP service delivery in EDs. Patients who present with sexual health concerns and other risk-factors identified via a chart review will be approached by a navigator who can educate them about PrEP. One group of patients will be offered the opportunity to speak to a specialist via a telehealth consultation who can prescribe them PrEP in the ED. The other group of patients will receive a referral to a prescribing provider. The navigator will provide support to facilitate linkage.	New York

PrEP, preexposure prophylaxis; ED, emergency department.

Some viewed offering PrEP in the ED as being inconsistent with ED culture, that it conflicted with the ED's acute care focus, thus making PrEP a low priority:

And I think that that's just a matter of training. Having them—having the physician know that this is a prevention tool that it's a way to prevent somebody from having a problem later on, you know, ED doctors are not good at that. That's not kind of their gig. That's what they don't do primary care. (9003—Non-ED Health Educator)

Another stakeholder at a site that was using social workers and navigators to offer PrEP also said:

An emergency physician just doesn't have the time to do that. You know, there's some people who would take the time, but when you have a department that blowing up and, you know, ambulances rolling in and you have a waiting room full of patients and you have high acuity there and patients out of control there and all the things. It's really—that's a really, we have a hard time even getting to laceration repairs, let alone sitting down and having a deep conversation about PrEP. And so, I don't push on our physicians to do much. I involve them where I think it's needed. But beyond that I try to take it out of their hands. (9008—ED Investigator)

Despite this, there was recognition that offering PrEP in the ED could benefit marginalized populations with

limited access to care: “we have a patient population that could benefit from it, we have a fair amount of younger individuals engaging in risky sexual behavior” (9001—ED Program Manager).

Patient Identification

We explored stakeholders’ opinions on ways to identify patients eligible for PrEP in the ED, including screening methods and strategies for offering PrEP. We asked about anticipated or actual facilitators and challenges in identifying eligible patients.

At sites that had implemented PrEP into the ED, the patients targeted varied by site. Some sites used an age-based approach, while others relied on risk scores integrated into the electronic medical record (EMR) and manual review of the history and chief complaint. At one site that used a risk score integrated into the EMR, the participant stated:

We did have a process where we had like an EMR alert to identify patients who may benefit from PrEP. And it sent a page to one of our social workers who would go meet with folks in the ED and tell them about PrEP and link them to PrEP care if they were interested. But it was all out of the hands of the ER providers, because like talking to them, you know, when we told them we were doing this, but they were like, we don’t want to prescribe PrEP. We don’t want to follow up on test. Or, you know, like if you guys—you guys are welcome to do it, you know, but that just seemed to be the best system for our ED. (9009, Internal Medicine Physician)

Another site had a navigator who reviewed records for patients with a history of STIs or those presenting for an STI evaluation and approached them about PrEP. ED providers could also refer patients to a navigator. This model focused on patients at higher HIV risk based on their history or chief complaint. Only one site used a universal offer of PrEP without proactive patient identification.

Stakeholders identified several challenges to screening patients for PrEP, including its low priority for ED providers and a lack of knowledge about PrEP. One stakeholder noted that “...most emergency physicians think this is like a good thing, but would have no idea where to start. They wouldn’t know what you have to check.” Another challenge was the stigma surrounding HIV. For example, some patients would request STI testing but refuse HIV testing due to the perception that HIV is for gay people. Additionally, some stakeholders were concerned that screening could disrupt ED workflow: “I think it’s just hard to implement something that does not directly impact acute care in the busy emergency department” (9006—Pediatric Emergency Medicine Physician).

PrEP offer strategies that were predominantly limited to navigators providing referrals for out-patient PrEP

initiation or distributing educational pamphlets with contact information for follow-up. While some stakeholders indicated that providers would offer PrEP in the absence of navigators, this strategy was constrained by issues related to provider burden and inadequate education, as previously noted. A significant limitation of the targeted screening strategy was its highly selective nature, which resulted in limited reach. One stakeholder explained, “These are already self-selected patients ... when they tried to do this before with ‘undifferentiated’ patients it was not as successful” (9010—ED Navigator).

PrEP Education and Counseling

Various mechanisms were used to educate patients about PrEP, with mixed results. One stakeholder reported, “We were trying to go around the ED with an iPad on wheels that has CDC videos playing just very basic, easy-to-understand videos describing PrEP. That didn’t work out well. They didn’t want to watch it” (9001—ED Project Manager). It was also noted that “the MSM community has heard of PrEP, but a lot of our high-risk heterosexual patients have not” (9001—ED Project Manager). Another site used posters, with a participant stating, “posters definitely work. People are so bored and if a person thinks that they may be risk, like maybe it’s something they would bring up” (9004—ED Investigator). A variety of personnel were involved in patient education about PrEP, including trained health educators, social workers, and navigators. Typically, clinical providers did not deliver this education. No site had clinical consultation services, such as in-person or telemedicine education by a clinical PrEP expert. One site attempted to implement a postdischarge education pathway where they would “automatically send people who have a negative HIV test information about where they can access HIV preventive care” (9011—Nurse Practitioner). A major barrier to education was the lack of time. As one stakeholder said:

I think one of the barriers may be time in that encounter. The one of the issues we struggle with is 30 min of counseling, even 15 min of counseling is not always something that we’re capable of doing. Especially when there are things that bleed stronger in the emergency department, we’re gonna struggle to pay the correct attention. (9019—Emergency Medicine Physician)

Motivation

Motivating patients to accept PrEP education, PrEP initiation and referrals was minimally discussed. Participants noted a lack of patient motivation to discuss PrEP or pursue follow-up after ED discharge, with no proposed solutions for improvement. One stakeholder observed, “we seem more concerned about STIs than the patients do,

which is such a systematic hard thing to tackle.” Regarding PrEP, this stakeholder added, “patients declined to be linked. They just weren’t interested. They didn’t see it as a priority” (9001—ED Project Manager).

PrEP Initiation

In the 5 EDs with active PrEP programs, several strategies for PrEP initiation were described. One strategy involved referring patients to a PrEP specialist for follow-up after ED discharge, though this could be problematic if patients were unmotivated to attend appointments. A few sites provided same-day PrEP with or without “starter packs.” For example, one participant stated, “we’re getting starter packs from Gilead and so people will have the opportunity to get a 10-day starter pack and be connected with a PrEP provider in the community” (9004—ED Investigator). At other sites, patients left the ED with a prescription, which was viewed as a real success:

One of our main successes here is the ability to send somebody out the door same day having seen a doctor and prescription in hand and follow-up scheduled. We’re good—we’re good at that as a team. I think that as closely as we work with the emergency department, I think that that’s going to be key as well is kind of the same day agility. (9003—Non-ED Health Educator)

Referral and Linkage to Care

Referral and linkage to care mirrored the various approaches used for PrEP initiation. The traditional method of scheduling a follow-up appointment after ED discharge was common, but the specifics of how this was operationalized differed. One approach involved a navigator providing a warm handoff by contacting the clinic before the patient’s discharge, ensuring the patient left with a confirmed appointment. Same-day appointments were advantageous because many patients lacked reliable phone access or had out-of-service numbers, making follow-up difficult. As one stakeholder noted, “...we really try to get them in the same day, because if they leave the hospital, a lot of them don’t have phones or if their numbers [are] out of service, so it can get really hard to get them back in. I’d say we lose 50% to follow-up” (9001—ED Project Manager). At another site where same-day appointments were not used, patients left the ED with scheduled appointments but only about 20% attended: “... So, I mean, it’s not perfect, but it’s some people” (9009—Internal Medicine Physician).

Patients were referred to various follow-up sites, including infectious disease or HIV specialty clinics, their own primary care providers, community primary care providers who prescribed PrEP, and hospital clinics. Having

prior arrangements with these clinics was deemed important. One participant mentioned that:

what we would do at the time was, basically connect them here to this particular clinic because this clinic where I work now is really seen as the kind of prevention specialty. We have access and with the knowledge of the—all the different programs that are able to provide PrEP, and it was nice for me at the time to be able to make one phone call and say, Hey, I have somebody who’s negative, but is at risk. (9003—Non-ED-Health Educator)

Discussion

ED-based HIV PrEP has been called the “next wave of ED-based HIV Prevention.”³⁷ Integrating HIV prevention into ED care could capitalize on the large patient volume, many of whom belong to groups at higher risk for HIV but lack access to primary care or PrEP services.^{38,39} These characteristics suggest that EDs could be ideal settings for impactful PrEP programs. However, despite the promise of ED-delivered PrEP, knowledge on how to best implement these programs remains limited. In this qualitative study we explored the actual challenges and successes of ED-based PrEP programs through interviews with stakeholders who have planned or implemented such programs.

Many challenges identified by stakeholders in this study echo those seen in non-ED settings. A recent narrative review by Mayer et al highlighted a “complex array of structural, social, clinical and behavioral barriers” hindering more widespread PrEP adoption in the United States.⁴ Barriers such as lack of PrEP knowledge among patients and providers, low perception of HIV risk, and concerns about stigma were identified in both the narrative review and by stakeholders in this study. Provider knowledge gaps were cited as a major barrier to PrEP screening and prescribing by emergency physicians. If ED providers are to play a larger role in PrEP promotion, further education work will be needed. In the primary care setting, PrEP prescribing has been shown to increase after targeted training but the same cannot be said of EDs.⁴⁰ Our participants also recognized the tension between targeted screening, which may be stigmatizing, and nontargeted screening, which can be inefficient and potentially offensive. We are currently exploring patient perspectives on screening strategies to identify the most acceptable approach.

Poor linkage to PrEP care after ED discharge was noted as another significant barrier. Post-ED follow-up has long been problematic.³⁷ One study in a public hospital reported a follow-up rate of only 26% in primary care for urban ED patients.⁴¹ One challenge for ED follow-up generally and for groups at higher risk of HIV are the number of patients with limited or lack of insurance. This is especially true in states that have chosen not to expand Medicaid.⁴² Financial concerns, not just lack of insurance,

have also been cited as significant barriers to PrEP initiation, even for insured patients navigating programs designed to provide financial support for PrEP can be formidable.^{43,44} Intensive protocols for people newly diagnosed with HIV can achieve over 85% follow-up but are labor- and time-intensive, demonstrating that high follow-up rates are possible.⁴⁵ Similar follow-up success for PrEP initiation after ED discharge has not been demonstrated. For ED PrEP to succeed in expanding access, efficient follow-up protocols will need to be developed, tested, and implemented. For patients with significant financial barriers to follow-up, partnerships with federally qualified health centers that can provide low-cost care will be critical.

While many implementation barriers to ED-based PrEP overlap with those in other settings, the ED poses unique challenges. A key issue is the perceived incongruence between the ED's core mission of acute care and HIV prevention. As one participant noted, anything that "does not directly impact acute care" is difficult to implement. Despite consensus statements calling for increased implementation of prevention efforts in EDs, progress has been slow.⁴⁶ For example, U.S. EDs have been slow to ramp up HIV testing despite CDC recommendations dating back to 2006. As of 2018, HIV testing was performed in only 1.05% of ED visits.⁴⁷ Yet, there are highly successful ED models for scaling-up HIV testing demonstrating that implementing HIV service-delivery is possible.⁴⁸

A striking difference between the ED PrEP programs in this study and outpatient programs was their reliance on ancillary staff—navigators, project managers, or health educators—to manage program activities. These staff helped compensate for gaps in provider education, training, and time as well as interest in identifying and linking patients to PrEP care. However, this reliance introduces scalability and sustainability challenges due to additional costs and staffing needs. All the programs in this study were supported by grant funding, with no plans for long-term sustainability. For PrEP programs to be scalable, they will need to transition to a model that is not dependent on external funding. This would likely require improved reimbursement for prevention services in the ED or better integration into standard ED workflows that are not so dependent on new staffing.

Despite significant barriers, valuable insights into the successful implementation of ED-delivered PrEP can be drawn from qualitative data. One of the most frequently cited factors for success is the presence of an "ED champion"—a dedicated advocate who supports program implementation. This finding aligns with prior research, which highlights the critical role of champions in driving health systems change.⁴⁹

Another key facilitator is minimizing disruptions to standard ED workflows and reducing the burden on already overextended treatment providers. In the context

of PrEP delivery, this has been achieved through automated clinical decision support tools integrated into the EMR.^{27,50} These tools help streamline care by alleviating cognitive load on providers while promoting standardized care delivery—a strategy that has proven effective in various ED care models beyond PrEP.⁵¹

The use of ancillary staff presents both a challenge and an opportunity for ED-PrEP implementation. Many ED-PrEP programs have leveraged ancillary staff to reduce provider workload, a strategy commonly employed in ED-based substance use disorder interventions.^{52,53} While financial sustainability remains a concern, these models offer valuable lessons that could enhance ED-based PrEP delivery. By drawing from the successes of similar programs, EDs may be able to refine and strengthen their approaches to PrEP implementation.

Expanding access to HIV prevention technologies, such as PrEP, is a key component of the ending the HIV epidemic plan, an initiative by the U.S. government to reduce HIV infections in 57 highly effected jurisdictions. However, expanding PrEP access to new settings requires substantial effort to address barriers to implementation. In EDs, the lack of enthusiasm about offering PrEP among ED providers and their limited time to take on new tasks pose formidable barriers to PrEP implementation. Successful models of ED-based public health interventions exist and can provide valuable insights for improving the implementation of ED-delivered PrEP. Two of these key cross-intervention facilitators are the presence of ED champions and strategies to minimize provider burden.

Limitations

This study has several limitations. Due to the nascent state of ED-based PrEP programs, our participant pool was limited, and we could not sample based on specific categories of interest, for example, setting, provider/staff cadre, and ED size. While we used a nonrandom sample of stakeholders, our search identified individuals who have implemented, researched or published on ED-based PrEP. Snowball sampling helped us identify additional key stakeholders. We anticipated that a stakeholder sample size of 25 would be needed to achieve data or thematic saturation. While failure to achieve saturation can affect the quality and integrity of qualitative study findings, there is here is no consensus about the number of interviews needed to achieve data saturation.^{54,55} Thematic saturation is dependent on study-specific context. We identified themes or issues across all interviews and then assessed whether any new dimensions or nuances of these themes emerged. We are confident that we achieved thematic saturation and in the validity of our study findings.

Coding was based on a predefined care cascade which guided the interview structure. This approach, rather than

grounded theory-based coding, may have limited the identification of novel patterns in the data.

Most ED PrEP programs are being planned or implemented in urban settings, limiting our ability to interview participants from community or rural sites. Only 13 of the 22 participants were involved in fully or partially executed ED-based PrEP programs. Participants who had not implemented ED-based PrEP provided valuable insights, but these were not based on first-hand experience.

Conclusions

EDs have significant potential to expand PrEP access for high-risk populations, yet systemic barriers to implementation remain. Addressing provider-level challenges, such as education gaps and resistance to preventive care, is essential. Reliance on ancillary staff to manage PrEP services helps mitigate these barriers but raises scalability concerns due to funding limitations. Sustainable funding models, streamlined workflows, and enhanced provider engagement are critical for scaling ED-based PrEP services. Future research should focus on developing and testing efficient linkage protocols and improving patient engagement strategies to ensure that EDs can effectively contribute to HIV prevention efforts.

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Ethical Considerations

This work was deemed nonhuman subjects research by the NYSPI Institutional Review Board (Protocol No. 8239).

Consent to Participate

While formal consent was not required for this study due to its designation as nonhuman subjects by the responsible IRB, immediately prior to conducting the interview, the interviewer reviewed the purpose and content of the interview, its voluntary nature, and procedures to protect confidentiality. The participant was then asked if he or she wished to participate in the interview.

Author Contributions

EC, SH, LJB, RC, and JEM conceived of the study. JEM obtained funding. EC, SH, LJB, YC, TGA, CR, and JEM designed the study methods. All authors contributed to data coding and data analysis. EC and SH drafted the manuscript. All authors contributed to revisions. EC takes responsibility for the paper.

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The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Data Availability Statement

Data sharing not applicable to this article as no datasets were generated or analyzed during the current study.

Supplemental Material

Supplemental material for this article is available online.

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