

Pre-exposure Prophylaxis (PrEP) Utilization in the College-Health Setting

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Abstract

HIV is highly preventable, yet its prevalence remains a significant healthcare burden. Pre-exposure prophylaxis (PrEP) medication was introduced in 2012 to reduce the chance of acquiring HIV via sex by 99 percent (Centers for Disease Control and Prevention [CDC], 2022). Despite having a prevention method with such promising results, underutilization continues to be a concern in North Carolina. The CDC stated that 32,490 people in North Carolina could have benefitted from PrEP, but only 5,288 were prescribed the medication (CDC, 2022a). This quality improvement project aimed to evaluate the beliefs and habits of providers at a university in North Carolina regarding PrEP and, thus, their medication utilization. Providers in this setting serve as gatekeepers in disseminating PrEP but face institutional barriers. Continued education and evaluation of their attitudes and comfort with prescribing PrEP can allow these concerns to be addressed, making providers more likely to utilize this means of HIV prevention.

Keywords: HIV, PrEP, college-health, prevention, utilization

Pre-exposure Prophylaxis (PrEP) Utilization in the College Health Setting

People aged 13 to 34 accounted for 58% of new HIV infections in 2021 (HIV.gov, 2023). This age group is primarily composed of college students on the undergraduate and graduate levels. A quality improvement project was conducted at a student health center at a university in North Carolina to evaluate the utilization of PrEP in the college health setting. This study was centered around six providers' attitudes and barriers surrounding PrEP and their utilization of PrEP regarding these factors. The organization had an active protocol to govern providers' prescribing and managing PrEP, as well as criteria for identifying those who qualify for its use. The project was conducted from August 2023 to November 2023, and data was evaluated weekly. The data collected was used to craft interventions that could lead to an increase in the utilization of PrEP among providers within the organization, subsequently preventing new HIV infections in the population they serve.

Methods

Providers' Baseline Survey

Initially, the site provider's attitudes and behaviors regarding managing and prescribing PrEP were assessed in relation to their current role. A five-question Likert scale survey was created and disseminated via email to the practicing providers within the organization. Anonymous responses were collected over a three-week period and were used strictly for the purposes of the project. Assessment of this information allowed for the identification of barriers to utilizing this medication and possible interventions to be constructed (see Appendix A).

Providers' Education

A one-hour virtual in-service was conducted to reeducate providers on PrEP medications, the current recommendations, and their role in its uptake. During this in-service, the purpose and

parameters of this project were discussed, and the initial survey results were disseminated. Participants were allowed to discuss the survey results and any known barriers to using PrEP within their role.

Identification of Interest

Chart reviews were performed on students who utilized the clinic for sexual health services from August to November 2023. The student's personal information remained confidential as no specific identifiers were utilized outside the premises. Health records were filtered by those who tested positive for Gonorrhea and/or Chlamydia to determine if the patient received PrEP education as evidenced by documentation in the electronic medical record. Identification of students who should receive PrEP education would be based on their sexual practices and their history of sexually transmitted diseases as written by the organization's protocol for the initiation of PrEP.

Dissemination of the CDC's PrEP Clinicians' Quick Guide

The CDC constructed a clinician's guide for prescribing and managing PrEP. This guide was placed in each provider's exam room for quick access to useful information when answering student's questions about the medications and requirements for usage. The expanded version of this guideline provides a specific method for identifying who is at risk for acquiring HIV, assisting with the determination of who should be provided with education, and who would benefit from being prescribed PrEP. The updated version of the guideline that was provided advises providing PrEP education to all sexually active individuals (see Appendix B).

Expansion of the Student's Intake Questionnaire

In addition to the aforementioned survey, chart reviews, and education, tailored adjustments were made to the health clinic's intake form to aid in the identification of students

who would like to learn more about PrEP. Students being seen for asymptomatic STI testing are required to complete a questionnaire before being seen for their visit. At baseline, this questionnaire asks the student's sexual preferences, if they use protection with every sexual encounter, and if they have a history of a sexually transmitted infection. During this project, the questionnaire was adjusted to include the question, "Would you like to learn about PrEP during your visit?". Students were given the option to answer "Yes." "No, I already know about PrEP", and "No." Based on the student's response, they would be allowed to learn about PrEP from a registered nurse. If more information is required, they can request to speak to a provider. Adding this question to the questionnaire makes the student simply aware that PrEP exists, but it can also act as a catalyst for the PrEP discussion by allowing the student to research the medication informally and at their leisure, formulate questions beforehand, and discuss the medication with a provider during their visit if they choose to do so.

Dissemination of PrEP Education

Finally, information about PrEP was disseminated in high-traffic areas within the organization. The posters and handouts were created and provided by the CDC. Various types of posters and handouts were placed in waiting areas and on the walls of each exam room and were made available to anyone who desired more information about PrEP. The handouts provided access to general information about PrEP for personal use, and could be dispersed to family or friends, further increasing awareness. The posters displayed people of various ethnic backgrounds and sexual orientations, reinforcing the fact that PrEP medications are for any person who is HIV-negative and at-risk.

Results

Provider's Baseline Survey

All six of the provider respondents reported being comfortable prescribing and managing PrEP. Five of the six respondents reported knowing where to locate the PrEP protocol and can use it efficiently. Three of the six respondents feel that their current PrEP protocol is user-friendly. Two of the six respondents reported offering PrEP to all those who meet the criteria. All six respondents reported that they document PrEP education with each discussion in the EHR. Three respondents reported that their barriers to prescribing PrEP were time during the visit, patients' lack of awareness of PrEP, patients not feeling at risk, and the fact that every patient could qualify for PrEP if following the guidelines (See Appendix C).

Student's Intake Questionnaire

As a result of the alteration of the student intake questionnaire, thirty-one students were exposed to PrEP and allowed to discuss it during their visit. Seven students were agreeable to learning about PrEP during their visit. Twelve students selected the option at stated, "No, I already know about PrEP". Twelve students declined to discuss PrEP. There was documentation of one student who received PrEP education via a pamphlet from a registered nurse.

Electronic Health Record Documentation

Upon review of the electronic health record of the thirty-one students screened for sexually transmitted infections, there was no documentation of PrEP education completed by a provider for any students who exhibited high-risk behaviors, and there was no record of new PrEP prescriptions.

Discussion

Providers at this organization are equipped with tools to prescribe and manage PrEP as they have an established protocol to govern their actions, and there is evidence to suggest that they feel comfortable doing so. Despite having the tools necessary to incorporate these

medications into their care plans, they fall short of identifying those who would benefit, thus limiting the utilization of this treatment option. There was no documentation from providers that showed that PrEP education was completed despite treating students for known sexually transmitted infections, some of whom were being treated for the second STI in six months, which would warrant PrEP education per the CDC's and the organization's PrEP protocol. One survey participant listed time constraints of each visit as a barrier to initiating PrEP, which suggests that the lack of time could precipitate this shortcoming.

Despite students reporting engaging in unprotected sex, having multiple sexual partners, and/or having a history of a sexually transmitted infection on their intake survey, many were not agreeable to learning about PrEP when provided the opportunity at their visit with their provider. Though the sexual behaviors of students were not addressed in this study, this finding presents the opportunity for further investigation of the perception of high-risk sexual behaviors and the attitudes and barriers surrounding the utilization of PrEP in this population.

Conclusion

As HIV remains a significant public health concern, utilizing PrEP can prove beneficial in the reduction of new HIV infections (CDC, 2022). The provider's comfort with eliciting a sexual health history, their attitudes toward prescribing PrEP, the perceived barriers to prescribing PrEP, and the awareness of stigma related to its use should be reflected upon on an individual and organizational basis with the purpose of increasing the uptake of PrEP among providers. Appropriate and consistent activation of the PrEP protocol is a basic yet essential step in increasing PrEP utilization. Identifying and understanding barriers is important in PrEP implementation in populations with substantial amounts of HIV infections (Mayer, et al., 2020). Future consideration should be placed on the organization's willingness to restructure the daily

flow to accommodate the inclusion of PrEP education when the provider identifies the need.

Continued education for providers should remain a standard to ensure adherence to current PrEP initiation and maintenance recommendations.

In conclusion, PrEP remains very effective in preventing HIV infection (CDC, 2022). Providers of varying specialties are crucial in ensuring these medications are utilized to their full potential. This can be achieved by promoting awareness, identifying all who would benefit from its use, and prescribing the medication when applicable. Providers should be an essential resource for information and should be current on PrEP guidelines and resources.

References

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APPENDICES**APPENDIX A: Initial PrEP Survey**

<p>I offer PrEP to every patient that meets the criteria.</p> <ul style="list-style-type: none"><input type="radio"/> Strongly Disagree<input type="radio"/> Disagree<input type="radio"/> Neutral<input type="radio"/> Agree<input type="radio"/> Strongly Agree
<p>I document PrEP education with each discussion in the EHR.</p> <ul style="list-style-type: none"><input type="radio"/> Strongly Disagree<input type="radio"/> Disagree<input type="radio"/> Neutral<input type="radio"/> Agree<input type="radio"/> Strongly Agree
<p>I know where to locate the PrEP protocol, and I can use it efficiently.</p> <ul style="list-style-type: none"><input type="radio"/> Strongly Disagree<input type="radio"/> Disagree<input type="radio"/> Neutral<input type="radio"/> Agree<input type="radio"/> Strongly Agree
<p>The PrEP protocol is user-friendly.</p> <ul style="list-style-type: none"><input type="radio"/> Strongly Disagree<input type="radio"/> Disagree<input type="radio"/> Neutral<input type="radio"/> Agree<input type="radio"/> Strongly Agree
<p>I am comfortable prescribing and managing PrEP.</p> <ul style="list-style-type: none"><input type="radio"/> Strongly Disagree<input type="radio"/> Disagree<input type="radio"/> Neutral<input type="radio"/> Agree<input type="radio"/> Strongly Agree
<p>What are your barriers to prescribing PrEP? (Optional)</p>

APPENDIX B: CDC's PrEP for the Prevention of HIV Infection: Clinicians' Quick Guide

What Are the Key Changes in the Updated PrEP Guideline?



Patients Who Should Be Prescribed PrEP

More easily identify patients who would benefit from PrEP. The updated guideline includes flow charts offering a few questions about sexual or drug injection behaviors that might put patients at risk of getting HIV.

HIV Laboratory Tests

Quickly test patients who are starting or taking PrEP. The updated guideline includes two testing algorithms:

- For patients who are starting or restarting PrEP after a long stop, test using an HIV antigen/antibody test (a laboratory-based test is preferred).
- For patients who are taking or have recently taken PrEP (including patients who have taken oral PrEP in the last 3 months and patients who had a CAB injection in the last 12 months), test using an HIV antigen/antibody test and a qualitative or quantitative HIV-1 RNA test.
- If a patient has a positive antigen/antibody test and a detectable HIV-1 RNA test (if applicable) confirming the patient has HIV, link that patient to HIV care and treatment.
- If a patient has a negative antigen/antibody test and an undetectable HIV-1 RNA test (if applicable) confirming the patient does not have HIV, continue prescribing PrEP.



Oral PrEP Options

Prescribe emtricitabine (F)/tenofovir disoproxil fumarate (TDF) (Truvada® or generic equivalent) or consider the additional option of prescribing emtricitabine (F)/tenofovir alafenamide (TAF) (Descovy®) for sexually active men and transgender women. In 2019, the FDA approved F/TAF as PrEP for sexually active men and transgender women. The updated guideline adds F/TAF as a PrEP option for these groups. F/TAF is not recommended for people assigned female sex at birth who could get HIV through receptive vaginal sex.



Ongoing Assessments

For oral PrEP (F/TDF or F/TAF)

CDC revised the recommended assessments for patients taking oral PrEP as follows:

- Assess creatinine clearance once every 12 months for patients under age 50 or patients whose estimated creatinine clearance was greater than 90 mL/min when they started oral PrEP.
 - For all other patients, assess creatinine clearance every 6 months.
- For patients taking F/TAF, measure patients' triglyceride and cholesterol levels and their weight each year.
- Review the list of medications that may interact with F/TAF or F/TDF.



For injectable PrEP (cabotegravir, or CAB)

Because the FDA approved CAB for PrEP in 2021 the updated guideline includes a new section that details the ongoing assessments and follow-up schedule for patients taking CAB.

- Regular kidney, triglyceride, or cholesterol assessments are not needed for patients taking CAB, as they are for patients taking oral PrEP.
- The follow-up schedule for recommended assessments is different for CAB users:
 - HIV testing every 2 months (at each injection visit).
 - Sexually transmitted infection (STI) testing every 4 months (at every other injection visit).

What Are Other Considerations for Providing PrEP?



Same-Day PrEP

Offer same-day PrEP to patients when appropriate. The updated guideline offers steps to safely prescribe PrEP to patients on the same day as their first evaluation. These steps include:

- Conducting baseline assessments and tests.
- Offering information on insurance or co-pay assistance.
- Scheduling follow-up tests and appointments.
- Giving or prescribing oral PrEP or CAB injections.



Tele-PrEP

Provide PrEP by telehealth when available. The guideline includes options for offering PrEP services by telehealth, such as having telephone or web-based visits, using laboratory or home testing, and prescribing a 90-day supply of PrEP medication.

2-1-1

2-1-1 Dosing

Learn about 2-1-1 dosing. The guideline now provides information on how to correctly use off-label 2-1-1 dosing for oral PrEP. This information may benefit gay, bisexual, and other men who have sex with men who choose to use 2-1-1 dosing. *This approach is not approved by the FDA and is not recommended by CDC.*



Primary Care for PrEP Patients

Address primary care needs during PrEP visits. The updated guideline describes how health care providers can offer primary care services to patients taking PrEP to help prevent and screen for other conditions. These may include STIs, mental health disorders, tobacco/nicotine use, and drug or alcohol use disorders.

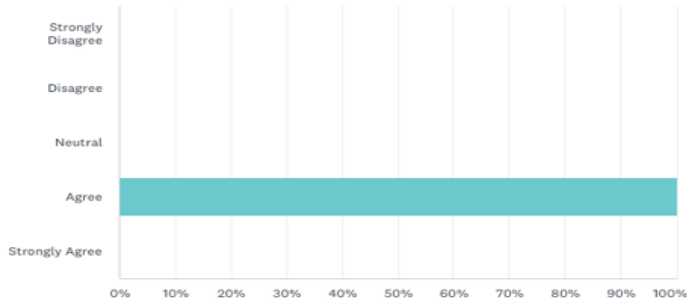


APPENDIX C: PrEP Survey Results

Figure C1:

I document PrEP education with each discussion in the EHR.

Answered: 6 Skipped: 0

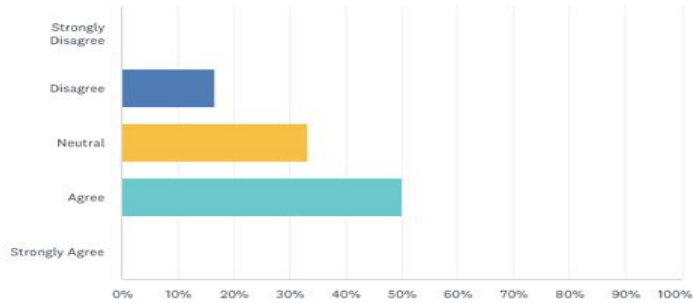


ANSWER CHOICES	RESPONSES
Strongly Disagree	0.00% 0
Disagree	0.00% 0
Neutral	0.00% 0
Agree	100.00% 6
Strongly Agree	0.00% 0
Total Respondents: 6	

Figure C2:

The PrEP protocol is user-friendly.

Answered: 6 Skipped: 0

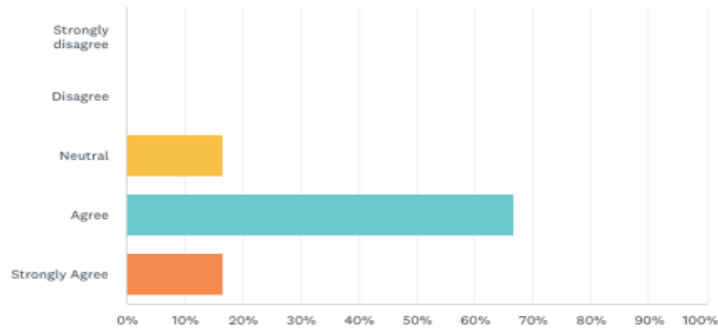


ANSWER CHOICES	RESPONSES
Strongly Disagree	0.00% 0
Disagree	16.67% 1
Neutral	33.33% 2
Agree	50.00% 3
Strongly Agree	0.00% 0
Total Respondents: 6	

Figure C3:

I know where to locate the PrEP protocol, and I am able to use it efficiently.

Answered: 6 Skipped: 0

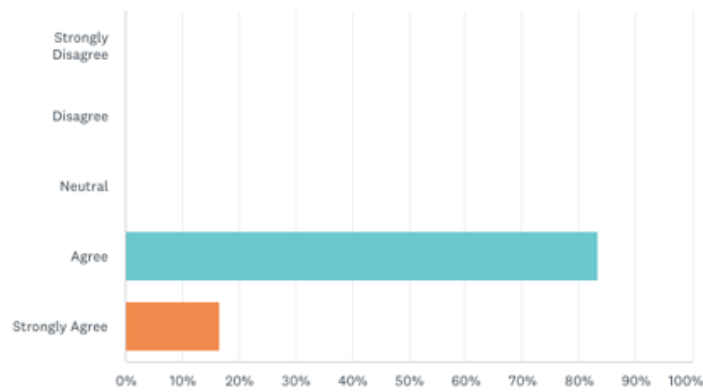


ANSWER CHOICES	RESPONSES
Strongly disagree	0.00% 0
Disagree	0.00% 0
Neutral	16.67% 1
Agree	66.67% 4
Strongly Agree	16.67% 1
Total Respondents: 6	

Figure C4:

I am comfortable prescribing and managing PrEP.

Answered: 6 Skipped: 0

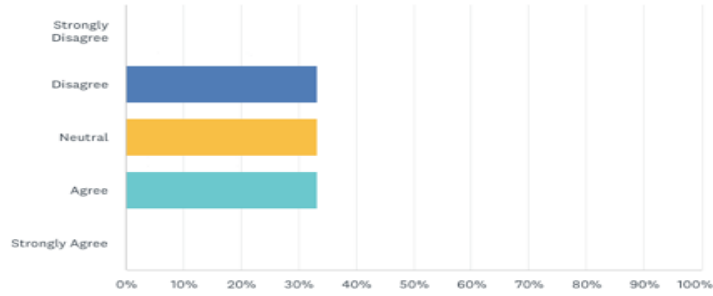


ANSWER CHOICES	RESPONSES
Strongly Disagree	0.00% 0
Disagree	0.00% 0
Neutral	0.00% 0
Agree	83.33% 5
Strongly Agree	16.67% 1
Total Respondents: 6	

Figure C5:

I offer PrEP to every patient that meets the criteria.

Answered: 6 Skipped: 0



ANSWER CHOICES	RESPONSES
Strongly Disagree	0.00% 0
Disagree	33.33% 2
Neutral	33.33% 2
Agree	33.33% 2
Strongly Agree	0.00% 0
Total Respondents: 6	