Promoting PrEP Uptake in Primary Care Practice for the Prevention of HIV Transmissions

By

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A Directed Scholarly Project Submitted to the
Department of Nursing
in the Graduate School of
Bradley University in
partial fulfillment of
the requirements for the
Degree of Doctor of Nursing Practice.

Peoria, Illinois

2020

DNP Project Team Approval Form

Bradley University
Department of Nursing

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April 8, 2020

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Acknowledgments

A popular Chinese proverb decorates the wall of my office and reads, “The journey of a thousand miles begins with one step.” This proverb shaped the approach to my three-year journey through this doctor of nursing practice (DNP) program. And what a journey it was! Challenging, inspiring, exhausting and invigorating. Sometimes too slow, at times too fast and oftentimes lonely. But through it all, I thank God for His favor, blessings and divine timing.

I thank my family, especially my husband (Ryan) and children (Rashad and Ramsey), for their constant support. Completing this degree required me to steal time from you. Thank you for understanding and thriving anyway.

Thank you Dr. Sarah Silvest-Guerreo and Katy Endress for leading me through my DNP project as project chair and project mentor respectively. I appreciate your time and guidance. Thank you Dr. Na’allah for serving as a faculty sponsor at the college of medicine. I also thank the Peoria City/County Health Department (PCCHD) and the University of Illinois College of Medicine at Peoria (UICOMP) for joining as co-sponsors of my project.

Last but not least, to the speakers who generously volunteered their time to present at the continuing medical education event. I cannot thank you enough! Your expertise was central to providing comprehensive PrEP education. I hope the results of this project, along with its impact on the community, justifies your time. Note that you have a long-time partner in efforts to prevent HIV and realize the goals of Getting to Zero 2030.

Abstract

The nation is charged with the great task of eradicating human immunodeficiency virus (HIV) by year 2030. PrEP is an acronym for pre-exposure prophylaxis. Multiple clinical trials have recognized it as a safe and highly effective regimen that includes taking a daily dose of an antiretroviral medication to prevent HIV transmissions. The regimen is backed by prominent healthcare organizations like the Centers for Disease Control and Prevention (CDC) that have developed guidelines for PrEP implementation. Yet, there is a nationwide problem of low provider uptake of PrEP. Investigators in the literature on PrEP implementation concur that PrEP, as a preventative measure, should be promoted in the primary care setting through comprehensive training on the regimen. The aim of this quality improvement project was to increase the Peoria PrEP provider base over a period of three months by increasing the knowledge and skill sets of primary care providers through the implementation of a comprehensive continuing medical education (CME) conference. Twenty primary care providers attended the event. CME evaluations, follow-up surveys and prep4illinois.com surveillance were used to measure project outcomes. Major findings revealed that the project increased the Peoria PrEP provider base by 75% and was effective in inspiring providers to implement the CDC's PrEP guidelines. Implications related to findings are discussed.

Keywords: PrEP, PrEP uptake, HIV transmission, HIV prevention, primary care providers

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Chapter I

Pre-exposure prophylaxis (PrEP) has emerged as a new and highly effective tool to prevent the contraction of human immunodeficiency virus (HIV). Traditional tools that have been utilized in preventing HIV transmissions are abstinence, commitment to condom use, avoidance of sharing drug apparatus, and persons knowing their HIV status and the status of their partners. However, unlike traditional tools, the PrEP regimen includes a combination antiretroviral medication that requires a prescription from a healthcare provider. Unfortunately, the nation is realizing a low provider uptake of PrEP (CDC, 2018a). This trend is evident in the low number of clinicians who are registered in Peoria, Illinois as PrEP providers. As Peoria is nationally ranked high in sexually transmitted infections (STI) rates, and low in the state of Illinois for positive health outcomes, it is imperative that leaders begin to seriously address preventative measures (County Health Rankings and Roadmaps, 2019; PCCHD, 2018). PrEP uptake in primary care practices will increase Peoria's PrEP provider base and provide access to a preventive regimen that is strongly supported among top health organizations, including the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO). Ultimately, this project contributes to the state and nation's efforts to tackle the monumental feat of eradicating HIV and its associated costs to individuals, communities, and the healthcare system.

Background and Significance

Human immunodeficiency virus is an incurable virus that attacks the immune system and makes individuals more likely to become sick from other microorganisms (CDC, 2018b; ONE, 2019; WHO, 2017). HIV resides in certain bodily fluids and is primarily transmitted through

sexual contact with an infected person. African Americans are diagnosed with HIV at a higher proportion than other races in the United States (CDC, 2019). Healthy People 2020 (n.d.) reported that in 2015, 45% of the year's HIV diagnoses occurred in African Americans. Since anal sex carries the highest risk of HIV contraction, especially for the receptive partner, African American men who have sex with men (MSM) and transgender females bear the greatest burden of the disease (CDC, 2019). The CDC (2018b) reported that the gay and transgender population account for 60% of diagnoses made within the African American population.

With blood being one of the bodily fluids which houses the virus, a person may also contract HIV via direct contact with fresh blood to broken skin (CDC, 2018b; WHO, 2017). This mostly occurs in people who inject drugs (PWID) and share contaminated equipment. Individuals can live for many years with HIV, but if the virus is not suppressed in the body, it can progress to the development of acquired immunodeficiency syndrome (AIDS) (CDC, 2018b; ONE, 2019; WHO, 2017). AIDS promotes the occurrence of recurrent infections that the body is unable to fight. Many of these infections can lead to the demise of an infected person (CDC, 2018b; ONE, 2019; WHO, 2017).

HIV/AIDS went through an era when very little was known about the virus, its transmission, its effect, or its treatment. This lack of knowledge allowed the disease to plague the global community for decades (ONE, 2019). So much so that HIV/AIDS has been identified as an epidemic (CDC, 2018b; ONE, 2019; WHO, 2017). Globally, approximately 35 million people have died from the disease since the beginning of the epidemic in the early 1980s (ONE, 2019; WHO, 2017). Due to this alarming number, the world has come to believe an HIV diagnosis is a death sentence (ONE, 2019).

Over the years the medical community has made tremendous strides in suppressing HIV and identifying effective treatments to allow infected people to live long and healthy lives (CDC, 2018b; ONE, 2019; WHO, 2017). The use of antiretroviral therapy (ART) have been paramount to this progress (CDC, 2018b; ONE, 2019; WHO, 2017). In addition to ART, the promotion of condom use, needle exchange programs, and community education have dropped HIV/AIDS-related deaths by 50% worldwide (ONE, 2019). However, there is still much to be done. HIV-activists noted that the drop in deaths has caused a sense of contentment in society that is hindering the possibility of eradicating HIV/AIDS (ONE, 2019).

Although it no longer frequents media highlights, HIV/AIDS remains a crisis and the statistics are staggering (CDC, 2018b; ONE, 2019; WHO, 2017). At the end of 2018, ONE (2019) estimated nearly 37 million people were living with HIV around the globe. Fifteen million of them were reported to not have access to treatment (ONE, 2019). Worldwide, AIDS is reported as the number one disease killer of young women (ONE, 2019). In 2017, approximately one million people died from AIDS-related causes globally (ONE, 2019; WHO, 2017). ONE (2019) noted that equates to nearly 2,500 deaths per day.

In the United States, the CDC (2018b) reported an estimate of 1.1 million people living with HIV at the end of 2015. Of those persons, approximately one in seven were unaware of their HIV infection. Currently, the estimation is one in six infected individuals do not know they are infected (CDC, 2018b). This reflects the most current national data on the disease. However, those numbers have likely increased from then to now. The CDC (2018b) reported the annual number of new HIV diagnoses have remained stable from 2012 to 2016. In 2017, 38,739 people received an HIV diagnosis (CDC, 2018b).

Over the years, the state of Illinois has experienced a 35% drop in HIV transmissions (Illinois Department of Public Health (IDPH), 2016). Even so, the state is ranked seventh in the nation for HIV diagnoses (IDPH, 2018). In 2015, 38,314 people were estimated to be living with the virus, of which 1,565 new cases were diagnosed that year (IDPH, 2016). Illinois also ranks high in the prevalence of STIs that predisposes individuals to contracting HIV. The state is 10th in the nation for primary and secondary syphilis, 10th in the nation for chlamydia, and 17th in the nation for gonorrhea (IDPH, 2018).

The statistics on HIV/AIDS around the nation have prompted the Trump administration to issue a call to end the HIV/AIDS epidemic in the United States by the year 2030. On February 5, 2019, the administration announced this goal in the president's state of the union address (Azar, 2019). Prior to the announcement, many states were already looking to healthcare leaders and taking on the charge to develop initiatives to meet what would be a historic achievement.

On May 14, 2019, the state of Illinois, represented by Governor J.B. Pritzker and community advocates, launched an official plan for its state-wide Getting to Zero Illinois (GTZ-IL) initiative. Through collaborative partnerships within the state and federal government, the GTZ-IL steering committee detailed a five-year plan to end the HIV epidemic in Illinois (Getting to Zero Illinois, n.d.). Their measures of success coincide with national objectives and are identified as (a) zero new HIV transmissions, and (b) zero untreated cases of HIV by 2030 (Getting to Zero Illinois, n.d.).

In order to achieve the first measure, GTZ-IL highlights increasing access to PrEP (Getting to Zero Illinois, n.d.). PrEP is the practice of HIV-negative people at high risk for contracting the virus, taking a daily antiretroviral medication to reduce their risk of becoming infected (CDC, 2017; Getting to Zero Illinois, n.d.; WHO, 2017). The most high-risk populations

are identified as MSM, transgender females, adolescent girls and young women, female sex workers, serodiscordant couples, and PWID (Healthy People 2020, n.d.). Due to their risk factors, these individuals also make up the most eligible populations for PrEP.

PrEP implementation requires a provider to prescribe a daily antiretroviral, screen patients every three months for their HIV risk and HIV status, and monitor patients' medication adherence and kidney functions (CDC, 2017; WHO, 2017). The medication, screenings, and monitoring are encompassed under reference to the PrEP regimen. This practice, sans the frequent screening and monitoring, is likened to the prevention of malaria in people who travel to regions that put them at risk of contracting the illness.

For years, tenofovir disoproxil fumarate/emtricitabine (TDF/FTC), trade name Truvada, was the only medication approved for the PrEP regimen by the United States Food and Drug Administration (FDA) (CDC, 2017; Getting to Zero Illinois, n.d.; WHO, 2017). The medication received this approval in 2012 after several years of clinical trials investigating its effectiveness in preventing HIV infections. When taken daily, as prescribed, TDF/FTC is reported to be over 90% effective in preventing HIV infections, with some sources citing a 99% efficacy (Anderson et al., 2012; WHO, 2012). In October 2019, the FDA approved tenofovir alafenamide/emtricitabine (TAF/FTC) as a second option to be used for PrEP (FDA, 2019).

Although both medications have shown high efficacy, they are expensive, so one must consider the cost-effectiveness of the PrEP regimen when compared to the treatment of HIV/AIDS. Treatment of HIV/AIDS maintains a high economic burden by way of medical costs associated with healthcare utilization and ART (CDC, 2017a). The most recent published annual and lifetime costs of HIV treatment rely on the 2010 dollar value of $23, 000 and $379, 668 per HIV-positive patient, respectively (CDC, 2017a). In 2009, the estimated total lifetime treatment

cost per individual living with HIV/AIDS in Illinois was $627 million (CDC, 2017a). With economic inflation over the last 10 years, one can assume that that amount has significantly increased. Using 2018 data, the director of administrative operations at a clinic that primarily treats HIV positive individuals in Peoria estimated the annual HIV treatment cost per individual to be $43,000.

In regard to PrEP, the same director estimated an annual cost per individual to be $18,000. Currently, the average wholesale price of TDF/FTC is $1,760 per month in addition to quarterly costs of required labs and office visits (AIDS Foundation of Chicago, 2017). As noted, the regimen is expensive. However, the medication is covered by most private and public insurance and there are numerous assistive programs to offset copays and charges for labs and office visits. This allows the regimen to be free or very affordable for patients (AIDS Foundation of Chicago, 2017). Furthermore, when medical savings from averted HIV diagnoses are considered, PrEP emerges as a cost-saving measure (CDC, 2017a).

With the confounding statistics on HIV/AIDS, national focus on this disease appears to be appropriate. As one reviews the strategies that have been developed to address this epidemic, it is worthy to note that preventing infections in high-risk individuals is equally as important to treating infected individuals. With PrEP being regarded as an effective and cost-saving regimen against HIV, it would be irresponsible of healthcare leaders to accept the reported low providers' uptake--especially at a time when the nation has been called to end the HIV/AIDS epidemic.

Needs Assessment

With the various tools available to treat and prevent HIV, the nation stands at an opportune time to liberate the next generation from the costs and effects of this serious disease. The United States government and Illinois state public health leaders recognize that this

objective can only be accomplished with the activation of all available resources (Azar, 2019; Getting to Zero Illinois, n.d.).

PrEP, as a safe and effective tool to prevent HIV infections among high risk individuals, has been identified as one resource that is underutilized (CDC, 2018a). In large part, this is credited to primary care providers' low application of PrEP. Providers' low application was attributed to a lack of providers' curiosity concerning patients' HIV status, and a lack of knowledge about the PrEP regimen (CDC, 2018a; Smith, Mendoza, Stryker, & Rose, 2016).

In 2015, the CDC noted that despite visiting a healthcare provider within the past year, most of the individuals who were at high risk of contracting HIV were not tested for the virus (CDC, 2018a). In Illinois, IDPH reported that only a small percentage of persons eligible for PrEP have a prescription for the medication (IDPH, 2016). In a national survey aimed at understanding primary care providers' knowledge and attitudes towards PrEP, many clinicians reported limited knowledge about the regimen (Smith et al., 2016). Considering this gap, healthcare provider training on PrEP was recommended to increase providers' commitment to CDC's recommendations for HIV screening and implementation of PrEP (CDC, 2018, March). According to responses from the national survey of primary care providers, researchers reported that clinicians expressed interests in education and training on PrEP and its recommended guidelines. Clinicians noted that gaining this knowledge would have the greatest influence in prescribing PrEP (Smith et al., 2016).

Upon assessment, Peoria, IL reflected many of the distressing HIV statistics. HIV, STIs, and injected drug use were on the rise in the city (PCCHD, 2018). The incidence of both chlamydia and gonorrhea within Peoria county were reported to be 2.5 to 5 times that of the state and national values (PFHC, 2018). These values indicated a substantial risk of contracting HIV

in Peoria. However, there were limited known providers of PrEP to help prevent those occurrences.

The IDPH website, www.prep4illinois.com, contains a list of practices and providers in Illinois who have registered and agreed to be identified as PrEP prescribers. Individuals and referring agencies can review this list as a resource for obtaining access to PrEP. At the start of this project, three providers were listed as registered PrEP prescribers in Peoria (IDPH, 2019). No primary care providers were registered on the site.

This DNP student deemed that the number of registered PrEP providers in Peoria was not sufficient in addressing the needs of the city. By providing an educational intervention and working towards gaining primary care providers' adoption of the PrEP regimen, the DNP student hoped this project would increase access to preventative care for high-risk populations in Peoria, contribute to the goals of GTZ-IL, and help realize the national objective of ending new contractions of HIV by 2030.

Problem Statement

Across the nation, despite respected health organizations' support and recommendation for PrEP, prescription rates for the medication and healthcare provider uptake remain low (CDC, 2018a; Smith et al., 2016). The state of Illinois and the city of Peoria are experiencing this phenomenon. Low provider implementation appears to be due to a lack of education of the PrEP regimen. Since patients cannot access the PrEP medication without a prescription, provider awareness and implementation of PrEP guidelines are central to addressing HIV transmission in Illinois and ending the HIV/AIDS epidemic in the United States (CDC, 2018a).

Project Aim

The primary aim of this project was to increase the Peoria PrEP provider base over a

period of three months by increasing the knowledge and skillsets of primary care providers through the implementation of a comprehensive continuing medical education (CME) conference. Specific project objectives included: (1) to influence providers' adoption of CDC's guidelines on screening patients' risks of HIV and prescribing PrEP within three months of the CME conference, (2) to increase the number of registered PrEP prescribers in Peoria within three months of the conference, and (3) to evaluate the impact of a PrEP educational training event on primary care providers' willingness to change their practice and implement the PrEP regimen by the end of the CME event.

Clinical Question/PICOT

In primary care providers, what is the impact of a PrEP educational training event on increasing the number of registered PrEP prescribers in Peoria within three months?

Congruence with Organizational Strategic Plan

The Peoria city/county health department (PCCHD) is a nationally accredited health department. The department's mission reads, "through the effective, efficient use of resources, we engage, educate and regulate to promote health, prevent disease, and provide for a safe environment" (PCCHD, 2019, Mission section). For Peoria, the health department envisions "a healthy, safe and informed community through collaborative partnerships" (PCCHD, 2019, Vision section).

In 2017, PCCHD entered into a partnership with two adjoining counties' health departments, local educational institutions, and a host of healthcare organizations in an effort to improve health in the region. They named the coalition, the Partnership for a Healthy Community (PFHC) (PFHC, 2019). Following a community needs assessment, PFHC formed workgroups to address four priority areas, one of which was reproductive health. The

reproductive health workgroup was charged with improving and promoting sexual health among adolescents and young adults (PFHC, 2019).

Acknowledging the alarming incidence of STIs in Peoria's youth and their risk of HIV transmission, the reproductive health workgroup strategized to implement GTZ-IL measures within the city. The endorsement and promotion of PrEP became a key focus of this group (Healthy HOI, 2019). Peoria city/county health department secured grant funding to apply to activities aimed at facilitating PrEP education throughout the community. One of these activities included addressing providers' knowledge gap concerning PrEP. The gatekeeper of this grant was the health department's director of epidemiology and clinical services who served on the PFHC's reproductive health workgroup.

The Peoria city/county health department is an advocate of PrEP and has identified the need to educate local providers. This project supports the health department's plans to make PrEP more accessible to HIV vulnerable individuals. It also fit within the overall mission and vision that the health department has offered for the city of Peoria (PCCHD, 2019).

Synthesis of Evidence

A review of the literature was conducted to acquire knowledge about PrEP, gain insights into the low provider uptake of the regimen, and explore recommended interventions to increase providers' implementation of PrEP. PubMed/Medline was searched using the words and phrases: *PrEP*, *PrEP providers*, *PrEP implementation*, and *safety and efficacy of PrEP*. Articles were limited to those published between 2014 and 2019. However, exceptions were made for historical studies investigating the safety and efficacy of PrEP during its roll out. The search yielded over 700 articles. International articles, other than historical studies, were later excluded. Ultimately, articles were selected based on their relevance to the DNP project. PubMed/

Medline's *similar articles* list and the reference lists of selected articles further assisted in selecting applicable sources.

PrEP Safety and Efficacy. There was widespread evidence within the literature that supported the safety and efficacy of TDF/FTC and the PrEP regimen among various groups of people (Anderson et al., 2012; Baeten et al., 2012; WHO, 2012). Consideration for a bio-medical option for the prevention of HIV began in 2005, with the first study commencing in 2007. This study, now known as the iPrEx (*Iniatiativa Profilaxis Pre-Exposicion*) study, was a randomized, double-blind placebo controlled trial aimed at exploring the safety and efficacy of Truvada (Anderson et al., 2012; WHO, 2012). Researchers studied 2,499 HIV negative MSM and transgender women who have sex with men across six countries (Anderson et al., 2012; WHO, 2012). In the 2010 published report, researchers demonstrated that PrEP decreased the rates of new HIV infections by 44 percent when compared to the placebo group (Anderson et al., 2012; WHO, 2012).

Anderson et al. (2012) worked as an extension of the iPrEX study and quantified the concentration of Truvada associated with HIV protection. The researchers analyzed two, four, and seven doses a week regimen. Anderson et al. (2012) noted an adherence to the medication proved to provide greater protection against the virus. The highest protections were observed in individuals who took the medication at least four times a week. Those whose blood levels reflected seven days of dosing had a 99 percent efficacy rate (Anderson et al., 2012, WHO, 2012).

While the iPrEX study was in progress, numerous other clinical trials were being conducted to review PrEP. One such study is identified as "Partners PrEP". Funded by the Bill and Melinda Gates Foundation, this randomized, double-blind, placebo-controlled trial studied

the safety and efficacy of Truvada in serodiscordant heterosexual couples; over 95% of whom were married (Baeten et al., 2012). This study was performed at nine sites within Kenya and Uganda from July 2008 through November 2010. The HIV-negative partners were equally distributed among three study groups: once daily TDF, once daily TDF/FTC, and placebo. HIV rates were reported to be reduced by 75% among study participants (Baeten et al., 2012). As observed in the iPrEx study, greater medication adherence provided increased protection against HIV contraction. A study by Donnell et al. (2014) reviewing tenofovir plasma concentration of the Partners PrEP study participants supported the medication efficacy. An HIV protection of 88% for TDF and 91% for TDF/FTC was reported for those with high concentration of the medication in their blood (Donnell et al., 2014).

In all, WHO (2012) estimated a total of 8000 participants who were involved in PrEP clinical trials worldwide. In regard to safety, PrEP is reported as a safe regimen and received FDA approval for use in adults in 2012. In 2015, this approval was extended to include use in adolescents who weigh at least 77 pounds (CDC, 2017b). In June 2019, the United States Preventative Services Task Force (USPSTF) awarded PrEP a grade A in their endorsement of the regimen (USPSTF, 2019). In awarding PrEP the highest rating a service can receive, the USPSTF recommended that clinicians offer PrEP to persons at high risk of contracting HIV (USPSTF, 2019).

The most common side effects associated with TDF/FTC are headaches, nausea, and diarrhea. These are referred to as the *start-up syndrome* to the medication and are reported to resolve within days to weeks of starting PrEP (Silapaswan, Krakower, & Mayer, 2016). WHO (2015) asserted that TDF/FTC is safe with hormonal contraceptives and during pregnancy. There

are noted renal and bone density risks attributed to long-term use of the medication, but researchers assured these risks can be monitored and reversed (Anderson et al., 2012).

Providers' Implementation. Across multiple studies and reports, researchers maintained that providers' implementation of PrEP was low despite the compelling evidence of the regimen's effectiveness. Through several cross-sectional surveys and interviews, many researchers identified phenomenon and barriers to explain this issue.

Providers' awareness. Providers are assumed to be unaware of PrEP. However, many authors in the reviewed literature noted they found most providers were aware of PrEP. Blackstock et al. (2016) assessed PrEP awareness in a cross-sectional online survey of 266 primary care providers and found 92.5% of their respondents were aware of PrEP. In a similar study, Petroll et al. (2016) conducted a 10-city, online survey of 525 primary care providers and HIV providers. The researchers noted "a near universal awareness" of PrEP with 76% of primary care providers and 98% of HIV providers having heard of PrEP (Petroll et al., 2016). Among infectious disease physicians across the United States and Canada, Karris, Beekmann, Mehta, Anderson, and Polgreen (2014) reported all 573 respondents were familiar with PrEP. Yet, only approximately one-third of the physicians in each study reported prescribing or referring a patient for PrEP (Blackstock et al., 2016; Petroll et al., 2016). Among the infectious disease physicians, Karris et al. (2014) observed a 9% implementation rate.

Perceived barriers. Observing that poor PrEP uptake could not strongly be attributed to lack of awareness, researchers aimed to investigate providers' perceptions of PrEP. They also sought to identify barriers to providers' implementation. The most commonly identified barriers were *knowledge and experience*, *cost*, *safety*, *sexual risk compensation*, and *bias and morals*.

Knowledge and experience. In reviewing barriers to PrEP uptake, researchers noted that mere awareness of PrEP was not sufficient to inspire providers to prescribe the regimen. Many providers expressed a lack of in-depth knowledge and experience with PrEP prevented them from offering TDF/FTC to patients (Blackstock et al., 2016; Petroll et al., 2016; Pinto, Berringer, Melendez, & Mmeje, 2018; Smith et al., 2016). Providers admitted that their ignorance and inexperience with PrEP left them uncomfortable, especially with assessing sexual health and providing risk behavior counseling (Doblecki-Lewis & Jones, 2016; Krakower, Ware, Mitty, Maloney, & Mayer, 2014).

Consistent throughout the literature was the theme that knowledge and experience of HIV patients and PrEP foster providers' adoption of the regimen (Mullins et al., 2017; Karris et al., 2014). Noting the responses of infectious disease physicians, Karris et al. (2014) conveyed that providers who saw more HIV incidences were more likely to provide PrEP. Mullins et al. (2017) observed similar results through their survey of physicians, nurse practitioners, physician assistants. The researchers communicated higher provider experience with persons diagnosed with HIV and those at high risk of contracting the virus, in the case of the study, adults and adolescents MSM and transgender women, correlated with higher willingness and intention to prescribe PrEP (Mullins et al., 2017).

Cost. Researchers who investigated barriers to PrEP uptake asserted that a majority of providers identified cost and insurance-related issues as a deterrent to prescribing PrEP (Adams & Balderson, 2016; Doblecki-Lewis & Jones, 2016; Mullins et al., 2017; Petroll et al., 2016). Providers were concerned about the high cost of the medication and emphasized that the time required to manage PrEP-related costs and insurance issues imposed too great of a burden on their practices (Adams & Balderson, 2016; Doblecki-Lewis & Jones, 2016; Mullins et al., 2017;

Petroll et al., 2016). Karris et al. (2014) reported some providers regarded TDF/FTC as "an expensive condom" (p. 706).

Addressing the cost-effectiveness of PrEP, Gomez, et al. (2013) estimated that the regimen has the potential to be cost-effective. However, the cost-effectiveness of PrEP cannot be evaluated solely on the cost of the medication. Providers would have to consider the cost of the HIV epidemic, PrEP program coverage, as well as individual adherence levels and PrEP efficacy estimates (Gomez et al., 2013).

Safety. Despite FDA approval and the recommendations and guidelines from the CDC and WHO, a widely held concern by providers is the safety of TDF/FTC. Many providers shared their skepticism about the efficacy of the medication outside of a clinical trial setting (Adams & Balderson, 2016; Blackstock et al., 2016; Krakower et al., 2014; Pinto et al., 2018; Silapaswan et al., 2016). Clinicians feared that time constraints would not allow them to complete risk behavior and medication adherence counseling. Noting the strong correlation between adherence and drug efficacy, the concern is that PrEP may not benefit their patients (Adams & Balderson, 2016; Doblecki-Lewis & Jones, 2016; Karris et al., 2014; Krakower et al., 2014; Pinto et al., 2018).

Providers also shared their apprehensions regarding drug toxicities and future resistance (Pinto et al., 2018). Providers in Karris et al. (2014) survey of infectious disease physicians noted their discomfort with giving potentially toxic medications to healthy individuals. Krakower et al. (2014) reported providers were considering potential *unintended consequences* of the PrEP treatment.

Sexual risk compensation. One of the most prevalent beliefs among studied providers that impacted willingness to prescribe PrEP was their perceived *sexual risk compensation*. Many providers asserted that PrEP will increase promiscuity and decrease the use of condoms

(Blackstock et al., 2016; Doblecki-Lewis & Jones, 2016; Karris et al., 2014; Petroll et al., 2016; Silapaswan et al., 2016). Providers were reluctant to participate in offering PrEP because they believed rates of other STIs would climb, thereby offsetting the benefits of PrEP (Blackstock et al., 2016; Calabrese et al., 2017; Silapaswan et al., 2016).

In order to gain a more thorough understanding of providers' perceptions about patients' sexual risk compensation while on PrEP, Calabrese et al. (2017) interviewed 18 PrEP providers' and extracted three primary themes from their responses: *(1) providers' role is to support patients in making informed decisions, (2) risk behavior while taking PrEP does not fully offset PrEP's protective benefit,* and *(3) PrEP-related risk*. Providers' who treat patients with PrEP challenged sexual risk compensation beliefs. One provider stated sexual risk compensation related to PrEP is excessively stigmatized by the healthcare community and the general public (Calabrese et al., 2017). The provider noted that the stigmatization increases patients' risk of contracting HIV. Reluctant providers were encouraged to assume a patient-centered approach while providing care and become informants of healthy sexual habits rather than authorities (Calabrese et al., 2017).

Bias and moral values. As providers were surveyed and interviewed about their willingness to adopt PrEP, many could not conceal the impact their bias and moral values had on their decisions. Calabrese et al. (2018) surveyed 111 medical students on their willingness to prescribe PrEP for male patients who differed in their use of condoms and partnering practices. Based on their values on sexual practices, providers were less willing to prescribe PrEP for persons with multiple partners who would not commit to continued condom use, even though they presented with higher risk of HIV transmissions (Calabrese et al., 2018). Researchers noted

the providers' judgments opposed medical evidence and suggested that personal values may undermine best practice for HIV prevention (Calabrese et al., 2018).

Similar results were noted in other studies (Adams & Balderson, 2016). Participants in Doblecki-Lewis and Jones (2016) study expressed willingness to prescribe PrEP for serodiscordant couples with a desire to conceive but did not agree with issuing PrEP for individuals who want to "have fun" (p. 525). Karris et al. (2014) reported a provider stating, "medicine should not attempt to reverse bad behaviors artificially" (p. 705). And Blackstock et al. (2016) disclosed that providers were more interested in prescribing PrEP to MSM with an HIV-positive partner, than they were to individuals with multiple sexual partners and those who inject drugs.

Furthermore, Pinto et al. (2018) identified a relationship between PrEP-stigma, HIV-stigma, and other societal stigmas, including those involving race. In a hypothetical scenario study with medical students, Calabrese, Earnshaw, Underhill, Hansen, and Dovidio, (2015) supported a correlation between PrEP-stigma and race in their report that indicated students judged Black patients to be more likely to use PrEP for the ability to engage in high-risk sexual behaviors compared to their White counterparts. Therefore, willingness to prescribe PrEP differed based on patients' race (Calabrese, 2015).

Providers' debate. A large part of the discourse around PrEP implementation is the ongoing debate surrounding the most appropriate providers and practice settings to prescribe and manage PrEP (Hoffman et al., 2016). Krakower et al. (2014) maintain that the "purview paradox" contributes to the nations' low PrEP uptake. The "purview paradox" highlights the irony of HIVPs having the knowledge and skills to prescribe PrEP, but are scarce in numbers, while primary care providers are large in numbers and have more contact with patients, but lack

the knowledge, skills, and comfort necessary to treat patients with PrEP (Krakower et al., 2014). In their study reviewing HIVPs and primary care providers' perceptions on who should primarily be responsible for prescribing PrEP, neither group considered PrEP to fall within their model of practice (Krakower et al., 2014).

Hoffman et al. (2016) explored this dilemma in in-depth interviews with HIV specialists and non-HIV specialists. The majority of participants determined that PrEP should primarily be provided by primary care providers. The researchers reported a participant explained that HIV-negative persons should not have to be treated by HIV-specialists (Hoffman et al., 2016). However, they recognized the need for primary care providers to develop the knowledge and skills required to effectively prescribe PrEP (Hoffman et al., 2016). Due to those factors, five participants proposed PrEP be primarily provided by HIV-specialists (Hoffman et al., 2016). Those providers noted that HIV specialists would be more knowledgeable about TDF/FTC and be more skilled at assessing sexual health and delivering counseling on medication adherence and sexual behaviors (Hoffman et al., 2016).

While other research participants identified the *purview paradox,* most of them agreed with the majority in Hoffman et al. (2016) study (Karris et al., 2014; Pinto et al., 2018; Silapaswan et al., 2016). Pinto et al. (2018) reported providers believed PCPs would be a more appropriate setting to prescribe PrEP because HIV specialists often do not see HIV-negative patients, while primary care physicians often see those patients. Karris et al. (2014) noted the same judgment within infectious disease physicians. The physicians shared they did not anticipate seeing PrEP patients because they expect to provide HIV care, not HIV negative care (Karris et al., 2014). Silapaswan et al. (2016) declared since PrEP is a preventative intervention, primary care providers should be primary prescribers.

Proposed Interventions. Due to the lack of knowledge and experience with PrEP that primary care providers expressed throughout the literature, a great deal of researchers recommended implementing an educational intervention as a method to elicit providers' willingness to prescribe PrEP (Blumenthal et al., 2015; Krakower & Mayer, 2016; Silapaswan et al., 2016; Smith et al., 2016). Blumenthal et al. (2015) emphasized that providers' knowledge about PrEP were associated with both past and potential future initiation of PrEP. Silapaswan et al. (2016) affirmed this in an individual-level presentation on PrEP. The researchers recounted that increased knowledge resulted in 13% of the attended infectious disease providers and PCPs prescribing PrEP for the first time within five to eight weeks of the presentation (Silapaswan et al., 2016).

Beyond the recommendation of providing education, many researchers were explicit in detailing what should be included in an effective educational session. Most notable were the assertions that widespread PrEP implementation must include information about identified barriers to prescribing PrEP (Blackstock et al., 2016; Karris et al., 2014; Krakower & Mayer, 2016; Pinto et al. (2018)). The researchers recommend providing clinicians with accurate data on the efficacy and safety of PrEP (Krakower & Mayer, 2016). Also positive experiences of prescribing providers should be highlighted and biases and frequent concerns about PrEP-related sexual risk compensation should be directly addressed (Blackstock et al., 2016; Karris et al., 2014; Krakower & Mayer, 2016; Pinto et al., 2018). Finally, Krakower et al. (2014) deemed the *purview paradox* as another barrier to PrEP uptake. Therefore PrEP educators are guided to encourage primary care providers to rethink their role in PrEP delivery (Krakower et al., 2014).

Other researchers affirmed that PrEP training and education must include the development of skills, such as navigating insurance systems and assessing sexual history.

(Hoffman et al., 2016; Goodreau et al., 2018). Petroll et al., (2016), suggested providers' interventions should discuss insurance navigation and share strategies on how to lessen the burden of managing those systems. As some providers identify discomfort with assessing sexual health, Hoffman et al. (2016) declared that information about best practice methods on how to approach and address patients' sexual health must be shared with providers.

Outside of educational interventions, some researchers noted that prescribing providers could serve as important influencers of PrEP implementation (Pinto et al., 2018). Researchers support community engagement, mobilization strategies, as well as interprofessional collaborations. Doblecki-Lewis and Jones (2016) called for a coordinated treatment support system to increase PrEP providers' uptake, monitoring, and adherence. Krakower and Mayer (2016) suggested *peer-to-peer social interactions* to foster support of non- and early PrEP adopters by those with more experience who may serve as champions of the PrEP provision.

Summary. The safety and efficacy of PrEP and the use of TDF/FTC in the regimen, was evidenced by years of rigorous research around the world involving a diverse sample of approximately 8000 participants (WHO, 2012). After careful scrutiny, the regimen gained the approval of the FDA, endorsement of the USPSTF, and support from prominent national and international health organizations (CDC, 2017b; WHO, 2012). However, providers remained hesitant to prescribe PrEP.

Throughout the literature, it was evident that provider uptake of PrEP required more than mere awareness of the regimen. Through various studies aimed at exploring barriers to PrEP implementation, researchers reported that the issues surrounding the low PrEP uptake were complex and multifaceted (Blackstock et al., 2016; Petroll et al., 2016, Pinto et al., 2018). Those issues included lack of experience, skepticism about the safety of TDF/FTC, practicality of

implementation, debate over who was most appropriate to prescribe PrEP, and rooted cognitive biases (Adams & Balderson, 2016; Blackstock et al., 2016; Calabrese et al., 2018; Krakower et al., 2014).

Despite those barriers, researchers maintained it is possible to increase PrEP uptake. Training sessions on PrEP were reported to result in increased percentage of PrEP prescriptions by primary care providers (Silapaswan et al., 2016). However, training sessions were recommended to be comprehensive and include information about sexual health, barriers, misconceptions, and community resources to support providers' practice in adopting PrEP guidelines (Blackstock et al., 2016; Krakower & Mayer, 2016, Hoffmann et al., 2016). In all, endeavors to successfully increase providers' implementation of PrEP required a different approach to providers' education and the support of the greater community.

Theoretical Framework

The Diffusion of Innovations (DOI) theory was developed in 1962 by Everett M. Rogers. *Diffusion* refers to how an entity or process is communicated and spread through a social system over time. The term *innovations* encompasses new ideas, products, and practices (Rogers, 1982). As one of the oldest social science theories, the DOI theory originated as a subfield of communication research (Rogers, 1982). The theory has been used to successfully expedite implementation of public health programs, especially those aiming to elicit behavior changes in social systems (LaMorte, 2018).

This theory is applicable to anyone within a social system, including healthcare providers. The theorist aimed to guide the process of individuals adopting a new entity or something they perceive as new (Rogers, 1982). *Adoption* is defined as the act of a person

engaging in different thoughts, product use, and practices than they had previously (Rogers, 1982).

According to the DOI theory, as new products, thoughts, and behaviors emerge, adoption of those entities does not happen concurrently (LaMorte, 2018). Adoption of an innovation is a process that is contingent on individuals' characteristics and the communication channels by which they receive information about an innovation (Rogers, 1982). Mr. Rogers acknowledged that some people adopt innovations more readily than others. The theorist identified five categories of adopters and strategies to influence each group to adopt an innovation:

1. Innovators - These are people who are curious and excited by new ideas. They are risk-takers and do not hesitate to take opportunities to be pioneers. This population is comfortable with uncertainty and often does not need to be persuaded to adopt an innovation (LaMorte, 2018; Rogers, 1982).
2. Early Adopters - These are people respected and in leadership roles. They usually are the first to be aware of the need to change, and they embrace change opportunities. They rely on the success of innovators to either adopt or reject an innovation. The decision of this group creates a *tipping point* because they are *opinion leaders*. An innovation will either move forward or terminate based on their decision. Beyond data from innovators, how-to manuals and implementation instructions are effective strategies to appeal to this population (LaMorte, 2018; Rogers, 1982).
3. Early Majority - These people are not typically leaders of change, but they are open to adopting new ideas. However, they usually need proof that an innovation works before they are willing to adopt it. To convert this population, strategies should include success

stories and reliable evidence of the innovation's effectiveness (LaMorte, 2018; Rogers, 1982).

4. Late Majority - These people are skeptical of new ideas and changes. They will only adopt an innovation after it has been successfully implemented by the majority. Therefore, strategies to appeal to this population should include information on how many other people have tried the innovation and have adopted it successfully (LaMorte, 2018; Rogers, 1982).
5. Laggards - These people are the hardest group to influence as they are rooted in traditions and very conservative. They are very skeptical of new ideas, products, and practices. To persuade this population, it is best to include convincing statistics, a sense of urgency, and pressure from people in the other adopter groups (LaMorte, 2018; Rogers, 1982).

Graphical depiction of the DOI theory reveals a bell curve of the adopter categories and an S-curve of the rate of adoption (See Appendix A). The majority of people fall within the early majority and late majority cohorts (Rogers, 1982). Adoption of an innovation is accomplished through individuals progressing through the five steps of the innovation-decision process (Rogers, 1982). These include *knowledge* of the innovation existence, *persuasion* to make a decision, *decision* to adopt (or reject) the innovation, *implementation* or initial use of the innovation, and *confirmation* or continued implementation of the innovation (Rogers, 1982). It is noted that the individual may reverse their decision to adopt an innovation in the *confirmation* stage (Rogers, 1982).

When promoting an innovation, the theorist emphasized the importance of assessing the targeted population and employing appropriate strategies. In general, communication of an innovation should occur in both a mass format and interpersonal interactions (Rogers, 1982). In

this project, the DNP student promoted the adoption of PrEP (*innovation*) through a public conference in an intimate setting. The DNP student assessed that the majority of the target population (primary care providers in Peoria, IL), would fall within the early and late majority categories of adopters. It was anticipated that a few participants may even be in the laggards' category.

Chapter II: Methodology

Project Design

This project was designed as a quality improvement project in primary care. The DNP student proposed a CME conference for primary care providers with the objectives of influencing providers' adoption of CDC's guidelines for screening patient's risks of HIV and prescribing PrEP, increasing the number of registered PrEP prescribers in Peoria, and evaluating the impact of the CME event on providers' willingness to implement PrEP.

In consideration of the DOI theory's recommended strategies to appeal to the different categories of adopters, statistics on HIV and research findings on the efficacy and safety of PrEP were included in the CME event. HIV experts and established providers of PrEP were invited to be facilitators and presenters. Those providers were early adopters who served as real world examples of providers within the community who were successfully adopting PrEP. A PrEP patient navigator and an individual on PrEP were also invited to present at the CME event. Those individuals were asked to provide real-life anecdotes and first-hand accounts of PrEP's effectiveness.

With this project, participants were guided through the *knowledge* stage of adoption, and attempts were made to *persuade* them to make the *decision* to adopt PrEP. The *decision* to adopt and *implementation* of PrEP were evaluated after three months of the project's completion. Evaluation of *confirmation* of PrEP adoption is part of the project's sustainability plan.

Setting

The CME event was held in Peoria, IL, in a conference space at a local college of medicine in the Fall of 2019. This location was selected because the college of medicine sponsored the conference by way of being the CME provider. A letter of agreement was

established among all sponsoring agencies, and the use of the college facilities was a condition of the agreement (See Appendix B).

Being a popular location for CME events, the college of medicine was familiar and accessible to the medical community. The facility offered conference rooms that were equipped with audio-visual capabilities to use in presentations.

Population/Sample

The targeted population for this project was primary care providers without regard to age, race, sex, or gender, who practiced in the Peoria city/county and served Peoria city/county residents. This included medical doctors (MD), doctors of osteopathic medicine (DO), advanced practice nurses (APN), and physician assistants (PA) specializing in internal medicine, family medicine, and pediatric medicine. The event was also extended to providers who specialize in emergency medicine because many HIV-vulnerable individuals use the emergency department for primary care. Likewise, providers who specialize in obstetrics and gynecology (OB/GYN) medicine were included because PrEP is deemed safe for use during pregnancy and OB/GYN care is considered primary care (WHO, 2015).

Participants were recruited through hand-delivered brochures and e-mails (See Appendix C). The DNP student gained access to providers' e-mails by requesting representatives from all three major healthcare groups in Peoria to distribute the event's brochure to their listserv of providers. Brochures were hand-delivered to private practices where e-mail addresses could not be found.

The brochure included a description of the targeted population and a link and contact for registration. Accessing the link led providers to a Google form where they were asked to provide information that addressed inclusion criteria and requirements for CME certificate distribution

(See Appendix D). Providers who do did not provide primary care in the identified specialties and/or those who did not practice in the Peoria area serving Peoria city/county residents, were unable to register for the event—therefore excluded from the project. The desired sample size for the project was 100 participants with a target of 50 participants per CME offering.

Primary care providers were targeted in this project because they are ideally positioned to be the initial point of contact of patients at risk for HIV infection. In studies that explored the most appropriate providers and practice settings to prescribe PrEP, most participants asserted that primary care providers should be primary prescribers because PrEP is a preventative intervention, and therefore within primary care providers' scope of practice (Karris et al., 2014; Silapaswan et al., 2016). The DNP student also assessed that the three registered PrEP providers in Peoria, who also treat HIV-positive patients, were logistically insufficient in numbers to provide care to all the high-risk individuals who wanted to be protected against HIV contractions.

Tools and/or Instruments

A standard CME evaluation instrument was used to evaluate the impact of the event on primary care providers' willingness to prescribe PrEP (See Appendix E). This instrument was a required form by the college of medicine, the CME provider. Per the college's regulations, the form was a prerequisite to participants receiving their CME credits. The college of medicine issued a template of the CME evaluation which included a question asking if and how the provider will change their practice as a result of the CME event.

A follow-up CME outcome survey was distributed via SurveyMonkey three months after the CME event to evaluate the event's influence on providers' adoption of CDC's guidelines on HIV screening and implementation of PrEP (See Appendix F). This instrument followed the

college of medicine's template. It included some customized questions by the DNP student to address the project's objectives.

Project Plan

Description of Intervention. Researchers within the reviewed literature emphasized that mere education on PrEP would not be effective in eliciting uptake of the PrEP regimen. Beyond providing information about PrEP, researchers recommended providing comprehensive training sessions that address assessing sexual health, the practicality of managing patients on PrEP, and biases and misconceptions against PrEP (Blackstock et al., 2016; Hoffman et al., 2016; Karris et al., 2014; Krakower & Mayer, 2016; Pinto et al., 2018). Researchers also noted that including current PrEP providers and members from the community who support PrEP implementation could be beneficial in encouraging primary care providers to prescribe PrEP (Doblecki-Lewis & Jones, 2016; Pinto et al., 2018).

The CME conference was titled *HIV Prevention: PrEP training for Implementation in Primary Care Practice.* The conference was designed to provide comprehensive training about PrEP. The event was two and a half hours in length and offered a maximum of two CME credits. Participants were provided a meal.

Speakers and facilitators. To expose participants to current PrEP providers and support from the community, the DNP student included speakers and facilitators who served in those roles. Speakers and facilitators were selected based on their interests, expertise, and experiences with PrEP and the intended content foci of the event. The DNP student aimed to form an interdisciplinary group to present information on PrEP from varying vantage points.

Speakers and facilitators were accessed by networking within Peoria's healthcare community and consulting with the project mentor for suggestions on suitable presenters. When

an appropriate individual was identified, the DNP student sent the person an e-mail requesting their participation with the project (See Appendix G). Upon agreeing to participate in this event, speakers and facilitators signed an authorization form (See Appendix H). This document confirmed each person's decision to volunteer in the program. The form also documented the presenters' preferences for being referenced in reports, publishing, and presentations on the CME event.

The DNP student conducted an in-person meeting with each speaker and facilitator. Co-facilitators shared the same meeting time. The purpose of the meetings was to discuss the event and clarify expectations to ensure that everyone worked toward the objectives of the project. In each meeting, the DNP student reviewed the purpose of the event, reminded speakers and facilitators of their roles, went over the event's agenda and addressed questions and concerns.

A great focus was placed on case studies. The DNP student developed case studies with questions for each topic. However, facilitators, as experts in their field, were expected to share their expertise with practical content. Therefore, the developed case studies merely served as a template and guide of the student's vision for the presentation's content and format. Facilitators were encouraged to edit content and questions based on their experiences. While content could be modified, facilitators were instructed to present a case study, adhere to CDC recommendations for PrEP implementation and refrain from disclosing any patient or client personal identifiers.

Ongoing communication between the DNP student and the speakers and facilitators occurred organically via e-mail, phone calls, and in-person meetings. E-mails and phone calls were used to distribute information and updates of the event, address questions and concerns, and share/request documents. In-person meetings occurred close to the event's implementation dates.

Event participants. The offer of free CME credits was used as an incentive to inspire attendance and participation. Interested providers were required to register via a link that was included in the brochure. The DNP student's contact information was included in the brochure to give providers the opportunity to ask questions about the event. Providers were able to register and make changes to their reservations up to the first conference date.

Providers who attended the event were reminded to submit a completed CME evaluation at the end of the event in order to receive CME credits. This information was also included on the event's sign-in sheet, event's agenda, in the closing PowerPoint presentation, and on the CME evaluation forms. In the closing PowerPoint, participants were informed to expect a follow-up CME survey to gain information about changes to their practice since the event. Participants were encouraged to fill out the survey and register as PrEP prescribers on prep4illinois.com.

Event's activities. The conference commenced with a sign-in (See Appendix I) and distribution of a registration packet, which included the event's agenda (See Appendix J), the CME evaluation, a pen and a notepad. Sign-in coincided with 30 minutes of meal-time. Following the meal, sessions ensued that included presentations on various topics related to PrEP implementation. The opening session was titled *HIV data, Getting to Zero-IL, & PrEP*. The session reviewed HIV data (national, state, Peoria), GTZ-IL initiative, and a brief overview of PrEP (See Appendix K).

There were three planned breakout sessions titled, (1) *Managing Patients on PrEP*, (2) *Assessing Sexual Health (5Ps)*, and (3) *Increasing Access to PrEP*. Each session reviewed a case study, engaged participants in facilitated discussions, and lasted 20 minutes. The case studies served to give practical scenarios on how to assess sexual history, prescribe PrEP, manage

patients on PrEP, and navigate the various barriers to prescribing PrEP. The first and second sessions included PowerPoint presentations (See Appendix L), while the speakers who facilitated the third session opted to engage in a more intimate discussion with the audience using one of the speaker's personal experience as their case study.

The event ended with a closing session that included a 15-minute PowerPoint presentation on why PrEP is appropriate in the primary care setting (see Appendix M) and a 15-minute question and answer panel discussion. The panel discussion gave participants the opportunity to ask questions and extend discussions from the breakout sessions. Closing remarks were made about the required CME evaluations, the anonymous follow-up CME survey, and the prep4illinois website. The website registration process was demonstrated on a projector screen during that time.

The CME event was offered on two separate days. These multiple offerings were anticipated to help increase the number of primary care providers who were able to participate in the conference. The second offering followed the same format and included the same content, speakers, and facilitators as the day before. Providers were only able to register for one offering.

Outcomes. There were three objectives for this DNP project:

1. To influence providers' decisions to adopt CDC's recommendations for HIV screening and implementation of PrEP within three months of the CME event by disclosing HIV data, detailing CDC guidelines of PrEP implementation, and explaining the GTZ-IL initiative through case studies and discussions as evidenced by at least 80% of participants indicating adoption of PrEP guidelines on the follow-up CME survey. The target survey response rate was at least 30%.

2. To increase the number of registered PrEP prescribers in Peoria within three months of the CME event by dispelling misconceptions about the PrEP regimen and the HIV-vulnerable populations, orienting providers to the IDPH prep4illinois registration website, exposing primary care providers to PrEP prescribing providers, and providing providers with community resources to support their decisions to prescribe PrEP through lectures, case studies, discussions and registration demonstration as evidenced by at least 30% of participants registering on prep4illinois.com.
3. To evaluate the impact of the CME event on PCPs' willingness to change practice and prescribe PrEP by the end of the conference by posing the question about the PCPs' intent to change their practice as a result of the CME event through administering the required CME evaluation instrument immediately after the event as evidenced by PCPs' responses on the form. The evaluation also measured whether the objectives of the event were met. The target evaluation response rate was at least 80%. The goal was for at least 80% of participants to report a willingness to change their practice.

The learning objectives specific to the CME conference were as follows:

As a result of participating in the CME activities, the participants were expected to be able to:

1. Describe the rates of HIV infections within Illinois and the Peoria region.
2. Explain the framework, known as the Getting to Zero initiative, to end HIV and AIDS in Illinois.
3. Distinguish PrEP as a safe and effective part of a comprehensive HIV prevention plan.
4. Explain how to utilize PrEP in the prevention of HIV.

5. Describe CDC guidelines for the use and prescribing of PrEP in HIV-vulnerable persons.
6. Identify methods to integrate sexual health assessment into practice.
7. Realize and manage common biases and misconceptions regarding PrEP implementation.
8. Identify community resources to support PrEP implementation.
9. Communicate the need for PrEP implementation in primary care practice.
10. Demonstrate IDPH PrEP provider registration process.

On the CME evaluation, providers were asked to agree or disagree if the objectives were met as a way to evaluate knowledge and competence with the presented information and skills.

Procedures for Data Collection. All data was collected by the DNP student. Depending on the information that was collected, data collection occurred at different intervals within three months of the CME conference..

Decision to adopt CDC guidelines. Three months following the CME event, participants were sent an electronic follow-up CME outcome survey via SurveyMonkey to the e-mail addresses they provided when they registered for the event. The survey inquired about changes that they had made to their practices that were influenced by the CME event. Participants' survey responses were confidential as their responses were not linked to their e-mail addresses. Providers were given two weeks to complete the survey. SurveyMonkey was pre-programmed to send non-respondents a reminder to complete the survey after a week of no response. Data from the survey was collected and analyzed two weeks from the initial sent date.

PrEP prescriber registration. On the day of the first CME event, the DNP student reviewed the prep4illinois website and documented the number of PrEP prescribers in Peoria.

During the closing session of the conference, participants were encouraged to register on the prep4illinois website as PrEP prescribers. The follow-up CME survey included questions about the providers' registration status to serve as another inspiration for them to register on the site. Three months post-event, the DNP student reviewed the website and documented the number of PrEP prescribers in Peoria on that date.

Willingness to change practice. Participants were given the CME evaluation tool with a registration packet. At the end of the conference, they were reminded to complete the form and submit it prior to leaving in order to be awarded their CME credits. The DNP student collected the forms for data analyses prior to submitting them for the participants' CME credits.

Evaluation and Sustainability Plan. Results of the project were evaluated at various intervals as the data were collected. Each objective was evaluated separately. The results of each objective's evaluation informed the cumulative evaluation of the project.

The DNP student remained focused on the project's aims and objectives. The utilized tools, data collection methods, and evaluation processes were carefully selected to measure the identified objectives. During data collection and the evaluation process, the various evaluation methods and times were employed to sustain the data and limit regression by allowing participants to reflect on the CME conference several times within three months from the event.

To assist with future implementation, the DNP student is open to granting access to the scholarly project report that will detail background information, project design, implementation process, and evaluation methods and results. The document may serve as a blueprint for replicating the project from year to year in efforts to decrease HIV transmission by way of increasing the PrEP provider base.

Timeline of Project. The entirety of this project occurred over one year in four phases. Phase one, *project development*, included the identification of a problem, a needs assessment, and a literature review. Phase two, *intervention development and planning*, involved designing the project, planning the evaluation and analysis processes, and considering cost factors to implementing the project. Phase three, *intervention implementation,* entailed efforts made to advertise, recruit, and implement the CME conference. The last phase, *intervention evaluation*, accounted for data collection, evaluation, analysis, dissemination planning and a final report of the results and impact of the project See Appendix N for more details about the timeline.

Data Analysis

Quantitative analytical methods were used to analyze the collected data from this DNP project. These methods were applied by the DNP student. Baseline and post-conference data regarding prep4illinois website registration were entered in Microsoft Excel. Graphs were generated using Microsoft Excel to reflect a visual depiction of the results. Responses from the CME evaluation in regard to providers' willingness to change practice and prescribe PrEP were deduced to, *Yes, No,* and *Skipped.* Microsoft Excel was used to graph those results. Responses from the follow-up CME survey were analyzed and graphed through SurveyMonkey and Microsoft Excel.

Institutional Review Board/Ethical Issues

This project did not meet the IRB guidelines for research and informed consent was not required of participants. As a partnered organization, the PCCHD supported the DNP project, but without an internal review board, review and approval was deferred to the Bradley University committee on the use of human subjects in research (CUHSR) (See Appendix O). Approval of

the project was obtained from CUHSR (See Appendix P). This project was also approved for implementation by the college of medicine central CME executive committee (See Appendix Q).

The project did not include any special/vulnerable populations. Attendance and participation, while elicited, were voluntary for all participants, providers, speakers, and facilitators. Participants benefited from receiving two continuing medical education credits, a meal, and a pen and notepad. No harm was assessed or reported due to participation in this project.

Ethical considerations for this project's implementation included participants' confidentiality in regard to their names and e-mail addresses. To address this principle, the DNP student collected participants' names and e-mail addresses for only two purposes, (1) to provide information to the CME provider so that participants may receive their CME credits and (2) to send the follow-up CME surveys. The student only had access to emails of providers who chose to register for the event. E-mail addresses were not used for any other purposes than what has been listed. Follow-up survey responses were optional and were not linked to participants' email addresses.

Other ethical considerations involved patient autonomy and confidentiality. To address these principles, providers were instructed to implement CDC guidelines for HIV screenings and PrEP adoption. They were informed that the recommendation does not override patients' rights and autonomy. Ultimately, the patient makes the decision on whether PrEP is suitable for them. To maintain patients' confidentiality, providers were reminded to refrain from disclosing sensitive patient identifiers during conversations.

A person who uses PrEP was a facilitator of one of the event's sessions. This individual heard about the DNP's project through a meeting and volunteered on their own will, was not

offered compensation in any form to be a facilitator. The individual was free to share as little or as much about their experience on PrEP as they desired. The DNP student planned to gift all facilitators honorarium for their participation in the event. However, this was not disclosed to this individual or any of the other facilitators who volunteered to present during the conference prior to the event.

Another ethical consideration for this project was conflict of interest**,** especially in regard to the speakers and breakout sessions' facilitators. To address this issue, every person involved with the planning and implementation of this project, including the project chair and mentor, were required to submit a financial disclosure form (See Appendix R) prior to the approval of the CME application. Furthermore, any commercial support was required to be reported. A disclosure statement about commercial interest was written in the opening session PowerPoint and stated by each speaker and facilitator during the CME event. The DNP student did not have any personal or financial conflict of interest in regard to this project. Commercial support for this project was not pursued or considered.

Chapter III: Organizational Assessment and Cost Effectiveness Analysis

Organizational Assessment

This project was implemented as a means to address a national public health issue and increase access to care within the Peoria community. The PCCHD supports the GTZ-IL initiative and was ready to push that agenda forward, especially in regard to PrEP implementation. The health department partnered with leaders from the two adjacent county health departments and a host of community leaders and professionals to address comprehensive health which, they recognize, include reproductive health. They were committed to investing human and financial resources in educating the community about PrEP.

The health department especially focused efforts on the youth (high school) and active LGBTQ populations in the community as they are the most vulnerable for HIV contractions. Having participated in multiple PrEP outreach events with the health department, the DNP student assessed that Peoria has a large population that is at high risk for HIV contraction. It was also noted that the vulnerable populations are interested in PrEP. The DNP student anticipated more patients in Peoria will begin to initiate conversations about PrEP with their primary care providers within the next one to two years. This is even more likely as the nation work to push legislations to make PrEP more accessible.

This project served to prepare primary care providers for conversations surrounding PrEP and the most appropriate management of vulnerable patients. The DNP student's assessment of the medical community in Peoria revealed that most providers are conservative in their values and moral outlook. They are reluctant to adopting PrEP in their practices, in part, due to the populations PrEP targets and the behaviors associated with those populations. Providers have

good intensions and are willing to refer patients for services that go against their values, but their biases prevent them from providing care that are well within their scope of practice.

The DNP student anticipated religious beliefs and biases regarding sexual behaviors would be the largest barriers to prevent providers from adopting PrEP. Along with that, providers' limited expertise and interest in assessing sexual health histories were expected to contribute to providers' unwillingness to increase their competence.

Finally, there was the factor of time. Discussing sexual health and engaging in sexual behavior counseling requires more time than what providers are accustomed to spending with a patient. The DNP student worried that primary care providers may find managing patients on PrEP to be too cumbersome of a task.

The Peoria community is saturated with organizations, individuals, and programs that support the PrEP regimen. They are knowledgeable about the many national, state and local resources to make PrEP available to eligible individuals. Many of these organizations and leaders are already collaborating in interprofessional workgroups to expand access to PrEP. By discussing these resources during the CME conference, it was expected that primary care providers would reach the conclusion that PrEP implementation is not only best practice in HIV prevention for high risk individuals, it is also warranted and feasible in the Peoria community.

Cost Factors

The proposed budget for this DNP project was $4,015. The source of income was grant funding from the PCCHD provided by IDPH. The budget was planned in anticipation of 100 participants (50 participants on each day of the event). Funds were allotted to offset the costs for personnel services, communication activities including advertising and mailings, food services,

presenters' honorarium, and registration materials. There was no registration fee assessed for this event. Therefore, no income was generated.

The actual cost for this project was $1, 174.88 which demonstrates that this project can be implemented at varying budget points. The number of actual participants significantly reduced the cost of foods which was the bulk of the budget. The cost of implementing this project could be further reduced with cheaper alternatives for food, such as providing snacks instead of a full meal.

Other factors that contributed to reduced final cost include (a) funds allotted for advertising and mailings were not used as brochures were hand delivered and distributed electronically, (b) registration personnel opted to volunteer their time and (c) grant provisions prevented the awarding of direct honorarium to presenters as planned. Primary care providers who presented were unable to accept personal gifts. An offer was made to provide lunch to their practices, but there was no response to the offer. Personal funds were used to purchase gifts for the two speakers who were not primary care providers. See Appendix S for details of the project's projected budget and actual cost.

Chapter IV: Results

Analysis of Implementation Process

Implementation of this project required the DNP student to first gain knowledge about the process of developing and executing a CME conference. The DNP student underwent a training session with the CME coordinator, who reviewed the CME application process and requirements. The DNP student sought the councils of the project chair, mentor, and the CME faculty sponsor/activity director at the college of medicine regarding the logistics of executing the conference. A great deal of time was also spent reserving rooms and audio-visual equipment at the event's site, arranging plans for catering, designing materials such as the brochures and agenda, and facilitating communications with the event's speakers.

The implementation process was exhaustive, but it progressed per the timeline until it came time to receive approval from the CME executive committee. Approval was received two weeks later than expected the committee. Since marketing and registration efforts could not be implemented prior to the committee's approval, this meant that those activities were also delayed. The DNP student anticipated having a month for marketing and registration. However, after printing and soliciting organizations' help in brochures distribution, providers were left with two weeks to receive information and register for the event.

Due to the delays and in the best interest of the project, the DNP student made some adjustments to the implementation plans. The first occurred with distribution of the event's brochures. In addition to e-mailing brochures, the DNP student originally planned on mailing physical copies. However, with just two weeks to register, the student assessed that the process of obtaining physical addresses, and labeling and stamping brochures would be too time consuming.

The short time between approval and registration also influenced an adjustment to the registration deadline. The event's brochure noted that registration for the event would close on October 4, 2019, but the registration deadline was extended to allow registration up to the day of the first CME event. Brochures were also emailed to hospitals' listservs multiple times to encourage timely registration.

The shortened marketing and registration time appeared to have impacted the number of participants in the project. As it was becoming evident that the actual numbers would be well below the anticipated numbers, the DNP student made another adjustment and allowed the attendance of registered nurses who expressed interest in the topic. The nurses did not meet the event's inclusion criteria and therefore, could not register online. Instead, they registered on-site and were counted in attendance numbers only. They were not included in data to evaluate the project's outcomes.

Another modification to the project plan was made during the CME event. With the low number of participants, an adjustment was made to the event's format. The original format included breakout sessions to be held in separate rooms. Groups were to rotate between sessions. The intended purpose of the breakout sessions was to allow participants to learn in smaller groups and share their thoughts more comfortably, especially as they discussed biases and misconceptions of PrEP. With participation being small on each day, it was determined the said purpose could be maintained without breaking up the participants. Participants remained in one room as a single group and speakers took turns to present their content. This format served to prevent possible confusion from participants changing rooms every 20 minutes. It also proved to benefit the presenters as they only had to present once per night, instead of the planned three times.

The final adjustment to the project plan was made regarding the timing of the follow-up survey distribution. Per the project plan, the survey was to be distributed two and a half months post project implementation. The graduate student later noted that this time fell during the Christmas and New Year holiday season. Assessing that participants may be pre-occupied with the celebration and chaos of the season, the survey distribution was delayed by two weeks. This was done with the intention of inspiring a favorable response rate. Due to this delay, review of the prep4illinois website was also extended by two weeks.

Overall, the process of desgining and implementing a CME event proved to be much more intensive than anticipated. The application process was exhaustive and the DNP student was challenged with coordinating communication among the multitude of speakers who were busy professionals.

It was even more frustrating working within the provisions of grant funding. The DNP student discovered many obstacles to receiving funds and receiving them in a timely manner. For example, honorarium could not be awarded to speakers using grant funds, and personnel who worked to assist with managing the event were required to submit a 1099 tax form prior to receiving payments—they opted out of payment due to this. Also, there was a delay in paying a caterer due to the process of accessing grant funds. The DNP student will be more diligent in understanding the provisions of a grant in future grant-funded projects.

During the entire implementation process, the DNP student was reminded of the importance of strong communication skills, especially when leading a multidisciplinary team. The student grew in their ability to use multiple avenues to initiate and follow-up on communication efforts. Most importantly, the student learned adaptability and agility. While they

had the ability to adjust to changes in plans, they are now able to do so quickly--with more confidence and without much disruption to a project's overall objectives.

Analysis of Project Outcome Data

Twenty-nine providers registered online for the CME event over the two offered days. On-site registration was allowed for those who were unable to register online. A total of 22 healthcare providers participated in the CME event. Participants included MDs, DOs, PAs, APNs, and RNs. Refer to Table 1 for summarization of participants.

Table 1

Summary of Event's Participants

	Day 1	Day 2
Provider type		
Medical Doctor (MD)	9	2
Doctor of Osteopathic Medicine (DO)	1	1
Physician Assistant (PA)	1	0
Advanced Practice Nurse (APN)	5	1
Registered Nurse (RN)	1	1
Total Participants	17	5

Note. 19 providers registered online prior to the event for Day 1 and 10 providers registered online prior to the event on Day 2. There were 3 no shows on Day 1 and 6 no shows on Day 2. The registered nurses registered on site for Day 1 and Day 2.

Decision to adopt CDC guidelines. The electronic follow-up CME outcome survey was sent to 20 participants via SurveyMonkey. Registered nurses did not receive a survey as they were not included in the project's target population. Nine providers completed the survey. Providers answered questions about changes made to their practice in regard to CDC's guidelines on HIV screening and PrEP following the CME event. Approximately 90% of respondents reported that they had implemented CDC guidelines and 22.22% of providers

reported prescribing PrEP since the event. Of those who had not prescribed PrEP, they all noted that they intended to prescribe PrEP. Results of the follow-up survey are reported in Table 2.

Table 2

Results of the Follow-Up CME Outcome Survey (Questions 1-5)

Questions	Responses				
	Yes (#)	Yes (%)	No (#)	No (%)	Skipped
1. Have you implemented CDC guidelines on PrEP into your practice?	8	88.89%	1	11.11%	0
2. Have you prescribed PrEP since the CME event?	2	22.22%	7	77.78%	0
3. If "NO" do you intend to prescribe PrEP in the future?	8	100%	0	0%	1
4. Have you registered as a PrEP prescriber on prep4illinois.com?	5	55.56%	4	44.44%	0
5. If "NO", do you intend to register as a PrEP prescriber on Prep4illinois.com?	8	100%	0	0%	1

Note. Responses from participants who completed the survey (n = 9). Results reflect a 45% response rate.

Questions six to nine of the follow-up survey required narrative responses to capture providers' experiences with implementing CDC's guidelines. In those comments, many providers wrote that the event led them to engage in safe sex practice counseling and assess patients for PrEP eligibility. In disclosing strategies that they had tried as a result of participating in the CME activity, one provider wrote, "asking about high-risk behaviors and counseling about the use and potential benefits of PrEP". Another provider shared, "I have taken more thorough and less biased sexual health histories as a result". All providers noted that they felt more

confident implementing guidelines for PrEP after the CME event and two admitted that they could benefit from more education and exposure.

PrEP prescriber registration. On the day of the first CME event, four providers were listed on prep4illinois.com as PrEP prescribers in Peoria. Three months post-event, seven providers were listed as PrEP prescribers on the website. Figure 1 depicts the increase in Peoria prescriber registrations on prep4illinois.com.

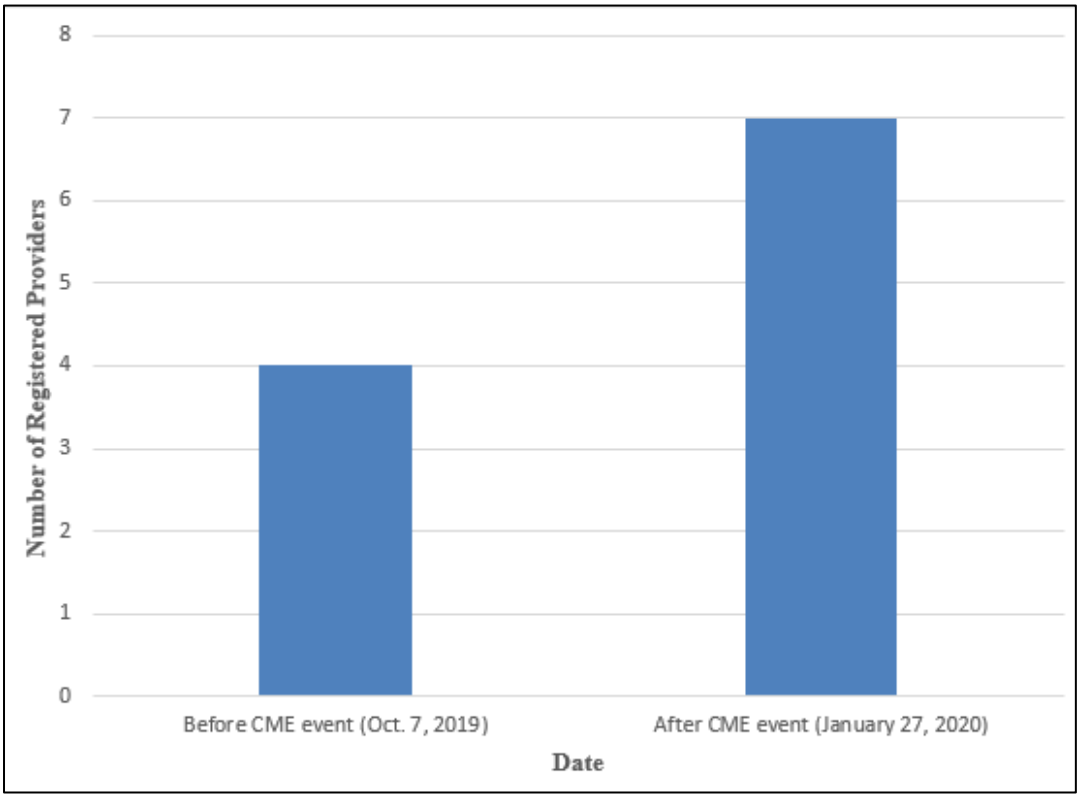


Figure 1. Pre and post event comparison of number of providers registered as PrEP prescribers on prep4illinois.com. One of the four registered providers before the event was inspired by the event's offering and registered prior to attending the CME conference. Three providers (15% of event's participants), registered on the website after attending the event.

Willingness to change practice. The CME evaluation was distributed to 20 providers at the beginning to the event. Registered nurses did not receive an evaluation as they were not

included in the project's target population and did not qualify for CME credits. Eighteen evaluations were returned in total. Fourteen was returned on Day 1 of the event and four was submitted on Day 2. All respondents agreed that the CME objectives were met. Figure 2 illustrates providers' answers to the second item on the CME evaluation.

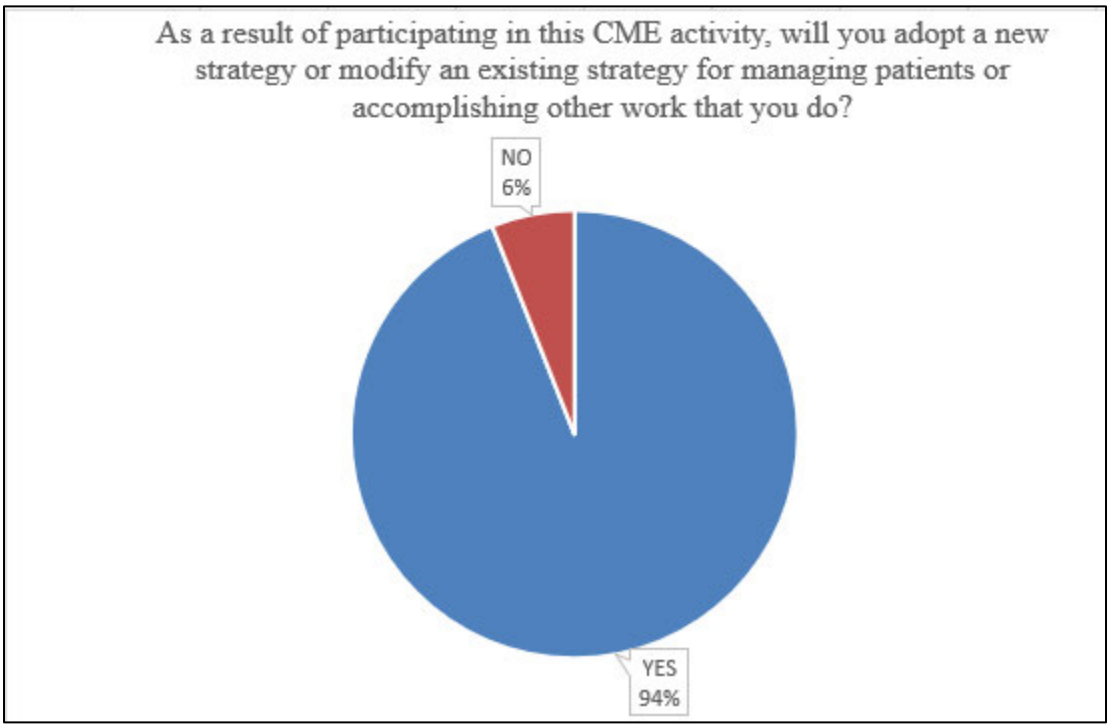


Figure 2. Providers' responses on the CME evaluation in answering whether the CME activity inspired the adoption or modification of strategies in practice (n = 18). Seventeen providers answered in the affirmative and one noted that the activity did not inspire a willingness to change. The results reflect a 90% survey response rate.

Chapter V: Discussion

Findings

The CME conference was effective in providing comprehensive education and training on PrEP. This is evidenced by primary care providers reporting that the event's objectives were met. Many providers also disclosed that the event led them to implement more comprehensive health assessments that include sexual health interviews, HIV screening and an evaluation of PrEP eligibility.

Data analysis of the project's outcomes revealed that this project was also effective in influencing uptake of PrEP among primary care providers. Immediately after the CME event, nearly 95% of participants reported a willingness to change their practice. Also, approximately 90% of the follow-up survey respondents disclosed that they adopted CDC's guidelines for PrEP implementation within three months of the CME activity. While just a small percentage of survey respondents reported they had prescribed PrEP since the event, those who had not prescribed PrEP conveyed they intended to prescribe the medication and regimen in the future.

All target goals of the project's outcomes were achieved except for the aim to obtain at least 30% of participants to register on prep4illinois.com. It appears providers are willing to prescribe PrEP, but are not yet ready to publicly identify themselves as PrEP prescribers. Even so, with just 15% of participants registering on the website, a major success of this project is that it added more providers to the list of registered PrEP prescribers in Peoria. By doing so, the number of listed PrEP providers in Peoria increased by 75%. This does not count the provider who was inspired by the event and registered on the site prior to attending the event. Including that provider would adjust the numbers to four (20%) of participants registering and a 133% increase of providers in Peoria as a result of this project.

Another success of this project is that it expanded access to PrEP and offered patients options of healthcare providers and organizations. At the start of project implementation, the listed registered PrEP prescribers were infectious disease specialists and worked for the same organization. After the event, primary care providers are now listed and registered PrEP prescribers represent four different organizations in Peoria.

Limitations or Deviations from Project Plan

One limitation of this project is the small sample size that hinders the validity of the project results. The sample size is attributed to the shortened marketing and registration period. The small sample size could also be telling of providers' interests in the topic of HIV prevention in the area where the project was implemented. The project may have drawn more participants if more was done to promote the event and communicate the relevance of the training. While official marketing of the CME activity was prohibited prior to approval, unofficial notification of the event to the medical community was allowed. The DNP student could have taken advantage of the ability to send out save-the-date announcements.

Another limitation of this project was limited information on a second medication for PrEP. A couple of days prior to the first event, the FDA approved TAF/FTC (Descovy) as a second option for use in the PrEP regimen (FDA, 2019). This medication is reported to be as effective as Truvada with less risks to patients' renal functions and bone density (FDA, 2019).

Knowing that this was on the horizon, the speakers who presented on the topic of managing patients on PrEP mentioned Descovy as an alternative to Truvada. However, without having the opportunity to review the literature for empirical data on the safety and efficacy of this second option, the presentation focused on the use of Truvada for PrEP. This may lead one to question the comprehensive nature and impartiality of the event.

Implications

It is evident that a comprehensive educational event does positively impact primary care providers' uptake of PrEP as was reported in the literature. When equipped with knowledge and appropriate skills, providers are likely to adopt the PrEP regimen in their practices. However, more work must be done to reach more providers. With a more educated provider base, this project can serve to enhance patients' experiences and outcomes with primary care.

It is important to recognize that the PrEP regimen is still fairly new. As Rogers' DOI theory explained, getting individuals to adopt new products, ideas, and behaviors is a process that requires patience and longevity. It is noted that one can only realistically expect small changes at first, and with time complete adoption is possible. Therefore, the DNP student acknowledges this project as small step on the journey to wide-spread PrEP implementation and HIV prevention efforts.

In order to gain momentum, more comprehensive education is required. Projects like this must be duplicated to support its reliability, generalizability and validity. However, after implementing this event, it is noted that future implementation may require alternative formats depending on the motivation of the medical community within an area. Future investigators should consider taking education to providers rather than having providers travel to a set location. This could be accomplished through offering webinars, implementing educational sessions for practices during their providers' meetings, or providing one-on-one training sessions with providers.

Medical and advanced practice nursing students who have not yet entered practice also stand to benefit from PrEP education. Including PrEP education in those programs' curricula would help students grasp the significance of addressing HIV transmission on a local, regional,

and national level. Having such training prior to practice could prepare providers to readily adopt CDC's guidelines on PrEP implementation.

Finally, while this project focused on practicing primary care providers, the DNP student recognizes that the topic of HIV prevention and PrEP is also relevant to nurses who are not primary care providers. Those nurses work closely with primary care practices and are well positioned to play an integral role in assessing patients for PrEP eligibility. As such, it would be beneficial to include nurses in future continuing education events.

To expand on this project's findings, further research is recommended to explore primary care providers' interests on the topic of HIV prevention and PrEP in the Peoria community. Investigators should also aim to identify perceptions, barriers and obstacles to primary care providers being identified as PrEP prescribers on a public platform. Findings from these pursuits may provide more insight on the low participation number in the CME event and the low number of registrations on the prep4illinois website.

Chapter VI: Conclusion

Value of the Project

As a quality improvement project, this project expanded conversations about PrEP in the primary care realm and motivated some providers to implement PrEP guidelines into practice. As a result, this project helped to alleviate the workload of the three specialists who were solely listed as PrEP prescribers in Peoria. By expanding access to PrEP, this project contributed to the city, state, and nation's mission of reducing HIV transmissions in high-risk individuals.

Locally, this project inspired the addition of a PrEP community outreach coordinator position at the PCCHD. The idea to add this position came after the health department's director of epidemiology and clinical services heard the speaker who uses PrEP present at the CME event. This position, currently held by that speaker, allows for a committed person at the health department to continue the work of educating providers, patients and the community about PrEP and HIV prevention.

DNP Essentials

As defined by the American Association of Colleges of Nursing in *The Essentials of Doctoral Education for Advanced Nursing Practice* (AACN; 2006), all eight DNP essentials were addressed through the implementation of this project. Essentials I: *Scientific Underpinnings for Practice*, II: *Organizational and Systems Leadership for Quality Improvement and Systems Thinking* and III: *Clinical Scholarship and Analytical Methods for Evidence-Based Practice* were addressed through the planning phases of the project. Evidence from the literature and a social science theory were used to develop strategies and design approaches to promote a system-wide change in practice. This was done to improve the quality of care among HIV vulnerable individuals.

Essential IV: *Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care* was addressed as the DNP student grew familiar with the prep4illinois website. During the CME event, the student explained the function of the website as a database of PrEP prescribers in Illinois to be used by patients, patient navigators and providers. The student also demonstrated providers' access and registration on the website.

This project focused on the national, state, and local public health initiative of HIV prevention, which directly addressed Essential VII: *Clinical Prevention and Population Health for Improving the Nation's Health*. Due to that focus, the DNP student's competencies were strengthened the most in Essential VII and Essentials V: *Health Care Policy for Advocacy in Health Care*, and VI: *Interprofessional Collaboration for Improving Patient and Population Health Outcomes.* The DNP student noted CDC's guidelines on PrEP implementation and used this project to address disparities in health care and advocate for better patient and population outcomes in regards to HIV prevention. A large portion of this project implementation included the formulation of and a collaboration with an interdisciplinary team of professionals who served as speakers and facilitators during the CME event.

Essential VIII: *Advanced Nursing Practice* was developed over the course of the project implementation. The DNP student engaged systems thinking and participated in community needs assessments. The student also participated in various community workgroups and councils to lend their voice to develop therapeutic interventions and improve patient outcomes.

Plan for Dissemination

In recognition of the small number of participants in this project, it is noted that there are more primary care providers, patients, and community members to reach. Several dissemination efforts have been made to extend the impact of this project. The graduate student presented results of the project locally at the annual Partnership for a Healthy Community meeting. This

meeting focused on interventions to address some identified areas of needs in the community. With reproductive health being an area of focus, this project on HIV prevention fit within the meeting objectives. The student also submitted a report of the CME event to the CME executive committee at the college of medicine.

Beyond those activities, the DNP student has continued to work with the health department to influence PrEP uptake in Peoria. The student has offered to serve as a resource person for the PrEP community outreach coordinator. The student has also expressed interest in abbreviating the project and offering one-hour lunch and learn sessions to individuals and medical groups upon request. The one-hour sessions would maintain the same objectives as the CME event. However, content delivery would be adapted to meet the needs of the provider(s), setting and time allocation. A follow-up survey will be sent after the sessions.

Lastly, the DNP student hopes to disseminate this project through publications and presentations. The student has dedicated time to search for applicable conferences to present information about the project's implementation and impact. One presentation is complete, two have been secured and application for another presentation is in process. The graduate student will review appropriate journals for publication submissions. Through these efforts, it is hoped that this project will reach providers beyond Peoria through replication of the projects purpose, design, and implementation.

Attainment of Personal and Professional Goals

Upon enrollment in the DNP program, the DNP student aspired to complete a project that would satisfy their passion for the community. They assessed that accomplishing this goal would be beneficial personally as they desired to gain more knowledge and understanding of their community. It was also noted that this goal could help professionally in the DNP student's role

as a community health nursing practicum clinical instructor. Both assumptions proved true as the DNP project allowed the student to network with prominent community members and complete a more in-depth assessment of the community. The graduate student is now aware of more resources and community partners to engage for personal and professional endeavors.

Even before knowing the specific focus area of the scholarly project, the DNP student intended to utilize their teaching skills in the intervention methods. Designing and implementing a CME event proved to be a valuable experience for the graduate student. They were able to educate providers while learning about the process of establishing a CME event. This resulted in gaining new skills, especially as they relate to leadership, event planning and project management.

Professionally, completing this DNP scholarly project met the requirement for a doctorate degree. By meeting that requirement, as a professor, the graduate student met their professional development goal of achieving a terminal degree. As such, it qualifies them for higher teaching ranks and positions in academia.

References

American Association of Colleges of Nursing (AACN). (2006). *The essentials of doctoral education for advanced practice nursing*. Washington, DC: Author.

Adams, L. M., & Balderson, B. H. (2016). HIV providers' likelihood to prescribe pre-exposure prophylaxis (PrEP) for HIV prevention differs by patient type: A short report. *AIDS Care, 28*(9), 1154-1158. doi:10.1080/09540121.2016.1153595

AIDS Foundation of Chicago. (2016) *2017 HIV Pre-Exposure Prophylaxis (PrEP) Coverage on the Illinois Health Marketplace in Illinois*. Retrieved from https://www.aidschicago.org/resources/content/9/3/3/documents/AFC_Prep_Marketplace_2017.pdf

Anderson, P. L., Glidden, D. V., Liu, A., Buchbinder, S., Lama, J. R., Guanira, J. V., . . . Grant, R. M. (2012). Emtricitabine-tenofovir concentrations and pre-exposure prophylaxis efficacy in men who have sex with men. *Science Translational Medicine, 4*(151). doi:10.1126/scitranslmed.3004006

Azar, A. (2019, February 06). Ending the HIV epidemic: A plan for America [Web log post]. Retrieved from https://www.hhs.gov/blog/2019/02/05/ending-the-hiv-epidemic-a-plan-for-america.html

Baeten, J. M., Donnell, D., Ndase, P., Mugo, N. R., Campbell, J. D., Wangisi, J., . . . Celum, C. (2012). Antiretroviral prophylaxis for HIV prevention in heterosexual men and women. *New England Journal of Medicine, 367*(5), 399-410. doi:10.1056/nejmoa1108524

Blackstock, O. J., Moore, B. A., Berkenblit, G. V., Calabrese, S. K., Cunningham, C. O., Fiellin,

D. A., . . . Edelman, E. J. (2016). A cross-sectional online survey of HIV pre-exposure prophylaxis adoption among primary care physicians. *Journal of General Internal Medicine, 32*(1), 62-70. doi:10.1007/s11606-016-3903-z

Blumenthal, J., Jain, S., Krakower, D., Sun, X., Young, J., Mayer, K., & Haubrich, R. (2015). Knowledge is power! Increased provider knowledge scores regarding pre-exposure prophylaxis (PrEP) are associated with higher rates of PrEP prescription and future intent to prescribe PrEP. *AIDS and Behavior, 19*(5), 802-810. doi:10.1007/s10461-015-0996-z

Calabrese, S. K., Earnshaw, V. A., Underhill, K., Hansen, N. B., & Dovidio, J. F. (2015). The impact of patient race on clinical decisions related to prescribing HIV pre-exposure prophylaxis (PrEP): Assumptions about sexual risk compensation and implications for access. *AIDS and Behavior, 18*(2), 226-240. doi:10.1007/s10461-013-0675-x

Calabrese, S. K., Earnshaw, V. A., Underhill, K., Krakower, D. S., Magnus, M., Hansen, N. B., ….Dovidio, J. F. (2018). Prevention paradox: Medical students are less inclined to prescribe HIV pre-exposure prophylaxis for patients in highest need. *Journal of the International AIDS Society, 21*(6). doi:10.1002/jia2.25147

Calabrese, S. K., Magnus, M., Mayer, K. H., Krakower, D. S., Eldahan, A. I., Hawkins, L. A., ...Dovidio, J. F. (2017). “Support your client at the space that they’re in”: HIV pre-exposure prophylaxis (PrEP) prescribers perspectives on PrEP-related risk compensation. *AIDS Patient Care and STDs, 31*(4), 196-204. doi:10.1089/apc.2017.0002

Center for Disease Control and Prevention (CDC). (2017a). HIV cost-effectiveness. https://www.cdc.gov/hiv/programresources/guidance/costeffectiveness/index.html

CDC. (2017b). *Preexposure prophylaxis for the prevention of HIV infection in the United State –*

2017 update: A clinical practice guideline. Retrieved from https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-guidelines-2017.pdf

CDC. (2018a). HIV prevention pill not reaching most Americans who could benefit – especially people of color [Press Release]. Retrieved from https://www.cdc.gov/nchhstp/newsroom/2018/croi-2018-PrEP-press-release.html

CDC. (2019). HIV and African Americans. Retrieved from https://www.cdc.gov/hiv/group/racialethnic/africanamericans/index.html

County Health Rankings and Roadmaps, (2019). Illinois: Peoria. Retrieved from http://www.countyhealthrankings.org/app/illinois/2019/rankings/peoria/county/outcomes/overall/snapshot

Doblecki-Lewis, S., & Jones, D. (2016). Community federally qualified health centers as homes for HIV preexposure prophylaxis: perspectives from south Florida. *Journal of the International Association of Providers of AIDS Care, 15*(6).

Donnell, D., Baeten, J. M., Bumpus, N. N., Brantley, J., Bangsberg, D. R., Haberer, J. E., Mujugira, A., Mugo, N., Ndase, P., Hendrix, C., … Celum, C. (2014). HIV protective efficacy and correlates of tenofovir blood concentrations in a clinical trial of PrEP for HIV prevention. *Journal of Acquired Immune Deficiency Syndromes, 66*(3), 340-8.

U.S. Food & Drug Administration (FDA). (2019). *FDA approves second drug to prevent HIV infection as part of ongoing efforts to end the HIV epidemic*. Retrieved from https://www.fda.gov/news-events/press-announcements/fda-approves-second-drug-prevent-hiv-infection-part-ongoing-efforts-end-hiv-epidemic.

Getting to Zero Illinois. (n.d.). Retrieved from https://gtzillinois.hiv/

Gomez, G. B., Borquez, A., Case, K. K., Wheelock, A., Vassall, A., & Hankins, C. (2013). The

cost and impact of scaling up pre-exposure prophylaxis for HIV prevention: A systematic review of cost-effectiveness modelling studies. *PLoS Medicine, 10*(3). doi:10.1371/journal.pmed.1001401

Goodreau, S. M., Hamilton, D. T., Jenness, S. M., Sullivan, P. S., Valencia, R. K., Wang, L. Y., . . . Rosenberg, E. S. (2018). Targeting human immunodeficiency virus pre-exposure prophylaxis to adolescent sexual minority males in higher prevalence areas of the United States: A modeling study. *Journal of Adolescent Health, 62*(3), 311-319. doi:10.1016/j.jadohealth.2017.09.023

Healthy People 2020. (n.d). HIV. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/hiv/objectives

Hoffman, S., Guidry, J. A., Collier, K. L., Mantell, J. E., Boccher-Lattimore, D., Kaighobadi, F., & Sandfort, T. G. (2016). A clinical home for preexposure prophylaxis: diverse health HIV PREP 40 care providers' perspectives on the "Purview Paradox." *Journal of the International Association of Providers of AIDS Care, 15*(1).

Illinois Department of Public Health (IDPH). (2016). Overview of HIV disease in Illinois. Retrieved from http://www.dph.illinois.gov/sites/default/files/publications/1-27-16-OHP-HIVfactsheet-Overview.pdf

IDPH. (2018). *Sexually transmitted diseases in Illinois: 2017 epidemiologic summary and yearly trends data for 2008-2017*. Retrieved from http://www.dph.illinois.gov/sites/default/files/publications/publicationsohpt2017-il-std-surveillance-report.pdf

IDPH. (2019). PrEP prescribers in Illinois by name. Retrieved from

https://www.prep4illinois.com/(S(fhcfukeopxjdmzw2yocgw5ty))/Content/docs/IL_PrEP_Prescribers_By_Name.PDF

Karris, M. Y., Beekmann, S. E., Mehta, S. R., Anderson, C. M., & Polgreen, P. M. (2014). Are we prepped for preexposure prophylaxis (PrEP)? Provider opinions on the real-world use of PrEP in the United States and Canada. *Clinical Infectious Diseases: An Official Publication of the Infectious Diseases Society of America*, *58*(5), 704-12.

Krakower, D. S., & Mayer, K. H. (2016). The role of healthcare providers in the roll out of preexposure prophylaxis. *Current Opinion in HIV and AIDS*, *11*(1), 41-8.

Krakower, D., Ware, N., Mitty, J. A., Maloney, K., & Mayer, K. H. (2014). HIV providers' perceived barriers and facilitators to implementing pre-exposure prophylaxis in care settings: a qualitative study. *AIDS and behavior*, *18*(9), 1712-21.

LaMorte, W.W. (2018, August 29). Diffusion of innovation theory [Web log post]. Retrieved from http://sphweb.bumc.bu.edu/otlt/MPHModules/SB/BehavioralChangeTheories/BehavioralChangeTheories4.html

Mullins, T. L., Zimet, G., Lally, M., Xu, J., Thornton, S., & Kahn, J. A. (2017). HIV care providers intentions to prescribe and actual prescription of pre-exposure prophylaxis to at-risk adolescents and adults. *AIDS Patient Care and STDs, 31*(12), 504-516. doi:10.1089/apc.2017.0147

ONE. (2019, January 09). 14 facts about the AIDS epidemic you need to know [Web log post]. Retrieved from https://www.one.org/international/blog/aids-facts epidemic/

Partnership for a Healthy Community (PFHC). (2019). Reproductive health. Retrieved from https://www.healthyhoi.org/reproductive-health

Peoria City/County Health Department (PCCHD). (2018). *2017 Peoria county sexually transmitted infection report.* Retrieved from https://www.pcchd.org/ArchiveCenter/ViewFile/Item/159

PCCHD. (2019). Home page. Retrieved from https://www.pcchd.org/

Petroll, A. E., Walsh, J. L., Owczarzak, J. L., Mcauliffe, T. L., Bogart, L. M., & Kelly, J. A. (2016). PrEP awareness, familiarity, comfort, and prescribing experience among US primary care providers and HIV specialists. *AIDS and Behavior, 21*(5), 1256-1267. doi:10.1007/s10461-016-1625-1

Pinto, R. M., Berringer, K. R., Melendez, R., & Mmeje, O. (2018). Improving PrEP implementation through multilevel interventions: A synthesis of the literature. *AIDS and Behavior, 22*(11), 3681-3691. doi:10.1007/s10461-018-2184-4

Rogers, E.M. (1982). Diffusion of innovations (3rd ed.). New York, N.Y.: The Free Press. Retrieved from https://teddykw2.files.wordpress.com/2012/07/everett-m-rogers-diffusion-of-innovations.pdf

Silapaswan, A., Krakower, D., & Mayer, K. H. (2016). Pre-exposure prophylaxis: A narrative review of provider behavior and interventions to increase PrEP implementation in primary care. *Journal of General Internal Medicine, 32*(2), 192-198. doi:10.1007/s11606-016-3899-4

Smith, D. K., Mendoza, M. C., Stryker, J. E., & Rose, C. E. (2016). PrEP awareness and attitudes in a national survey of primary care clinicians in the United States, 2009–2015. *Plos One, 11*(6). doi:10.1371/journal.pone.0156592

US Preventative Services Task Force (USPSTF). (2019). Preexposure prophylaxis for the

prevention of HIV infection: US preventative services task force recommendation statement. *JAMA, 321*(22), 2203-2213.

World Health Organization (WHO). (2012). *Guidance on pre-exposure oral prophylaxis (PrEP) for serodiscordant couples, men and transgender women who have sex with men at high risk of HIV: Recommendations for use in the context of demonstration projects.* Retrieved from http://www.who.int/hiv/pub/guidance_prep/en/

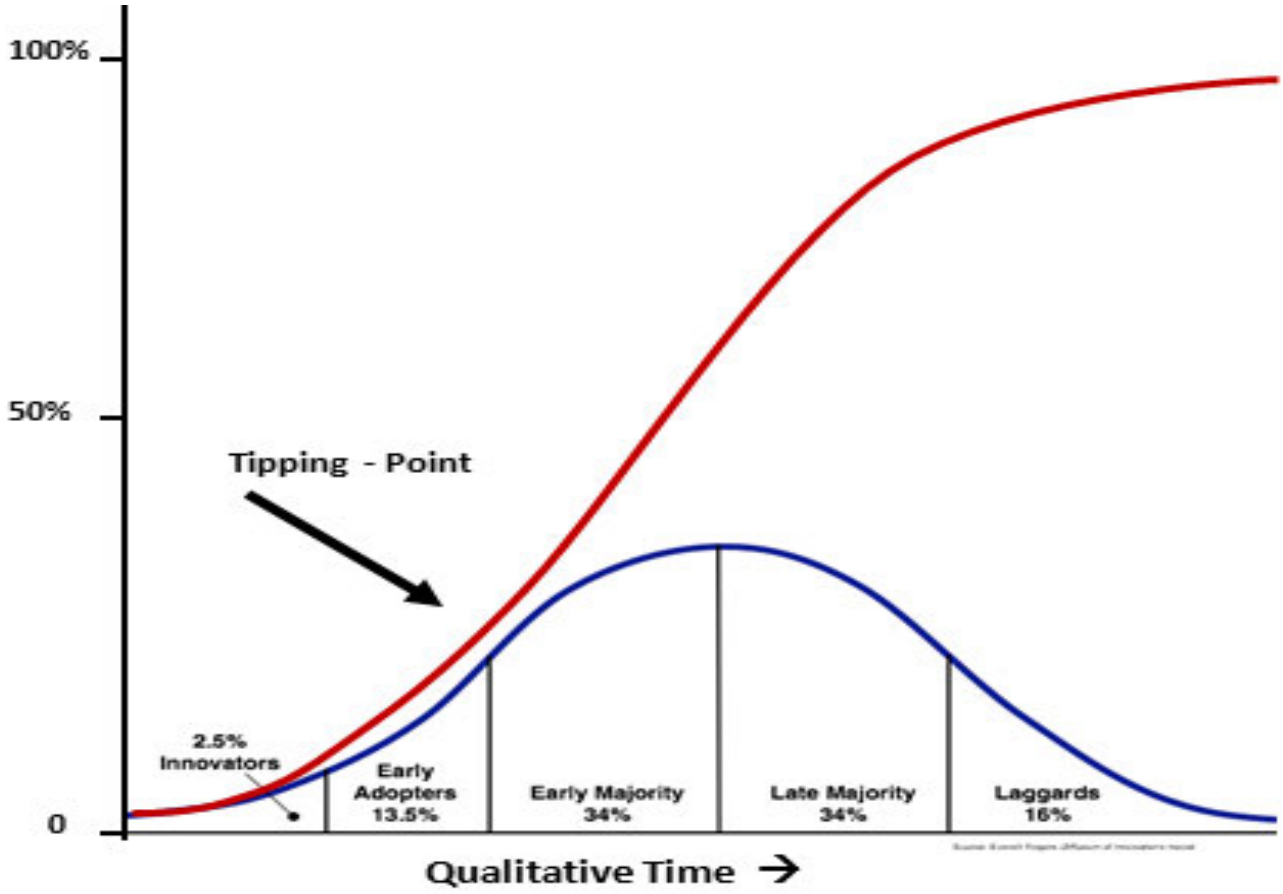
WHO. (2015). *Guideline on when to start antiretroviral therapy and on pre-exposure prophylaxis for HIV.* Retrieved from: https://www.who.int/hiv/pub/prep/policy-brief-prep-2015/en/

WHO. (2017, December 19). HIV/AIDS. Retrieved from https://www.who.int/features/qa/71/en/

Appendix A

Theoretical Framework

Rogers' Diffusion of Innovations Model



Source: Original concept from Everett M. Rogers, *Diffusion of Innovations* (New York: Free Press, 1962)

Image retrieved from http://onhealthtech.blogspot.com/2010/09/diffusion-of-ehr-innovation.html

Appendix B

Agencies Letter of Agreement

UNIVERSITY OF ILLINOIS
COLLEGE OF MEDICINE AT PEORIA

Department of Family and Community Medicine
815 Main Street, Suite C
Peoria, Illinois 61602

Rahmat Na'Allah, MD, MPH, FAAFP
Professor of Clinical Family Medicine
Director, Family Medicine Obstetrics Fellowship
University of Illinois College of Medicine at Peoria

Melissa Koch
Family Medicine Obstetrics Fellowship Coordinator

LETTER OF AGREEMENT
UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE at PEORIA
DEPARTMENT OF FAMILY & COMMUNITY MEDICINE
AND
BRADLEY UNIVERSITY DEPARTMENT OF NURSING
AND
PEORIA CITY COUNTY HEALTH DEPARTMENT

In reference to the HIV Prevention: PrEP Training for Implementation in Primary Care Practice event on October 8, 2019 and October 9, 2019 in Peoria, Illinois, the University of Illinois College of Medicine at Peoria Department of Family & Community Medicine, the Bradley University Department of Nursing, and the Peoria City County Health Department agree to the following:

1. This event is part of a Bradley University doctorate of nursing practice (DNP) student's scholarly project. As such, the student may use the facilities at the college of medicine for this event. The student may also reference each sponsoring entity in doctorate reports, publishing, and presentations of the event's planning, implementation, and impact.

2. The University of Illinois College of Medicine at Peoria Department of Family & Community Medicine will be represented by the Activity Director, Rahmat Na'Allah, MD, MPH, the Bradley University Department of Nursing will be represented by the DNP student, Sokonie Reed, MSN, RN and the DNP student project's chair, Sarah Silvest-Guerrero, MSN, DNP, Assistant Professor, and the Peoria City County Health Department will be represented by the DNP student's project mentor, Katy Endress, MSN, MPH, FNP-BC, Director of Epidemiology and Clinical Services.

3. Rahmat Na'Allah, MD, MPH and the University of Illinois College of Medicine at Peoria Department of Family & Community Health in consultation with Sokonie Reed, MSN, RN and the Bradley University Department of Nursing, and in consultation with the Peoria City County Health Department will have final approval over the selection of topics, speakers, and facilitators for the conference. Rahmat Na'Allah, MD, MPH takes responsibility for all decisions regarding faculty and academic content.

4. The Bradley University Department of Nursing and the Peoria City County Health Department will attend to all administrative tasks associated with the conference, including publicity, registration of participants, payment of Honoria and expenses to speakers.

5. All monies, whether in the form of unrestricted educational grants from pharmaceutical companies or registration fees from participants, will be collected and disbursed for the administration of the program by the Peoria City County Health Department acting as agent for the University of Illinois College of Medicine at Peoria Department of Family & Community Medicine and the Bradley University Department of Nursing.

6. The University of Illinois College of Medicine at Peoria Department of Family & Community Medicine reserves the right to continuous review of the collection and disbursement of funds by the Peoria City County Health Department on its behalf.

7. The University of Illinois College of Medicine at Peoria Department of Family & Community Medicine, the Bradley University Department of Nursing, and the Peoria City County Health Department will be identified as joint sponsors of the conference on all mailings and brochures.

8. This agreement reflects the understanding of the signatories below.

Rahmat Na'Allah MD, MPH
Activity Director
Professor of Clinical Family Medicine
Director, Family Medicine OB Fellowship
University of Illinois College of Medicine at
Peoria Department of Family & Community Medicine

Sokonie S. Reed, MSN, RN
Doctorate of Nursing Practice Student
Bradley University Department of Nursing

Sarah Silvest-Guerrero, MSN, DNP
Assistant Professor
Bradley University Department of Nursing
DNP Project Chair

Katy Endress, MSN, MPH, FNP-BC
Director of Epidemiology and
Clinical Services
Peoria City County Health Department
DNP Project Mentor

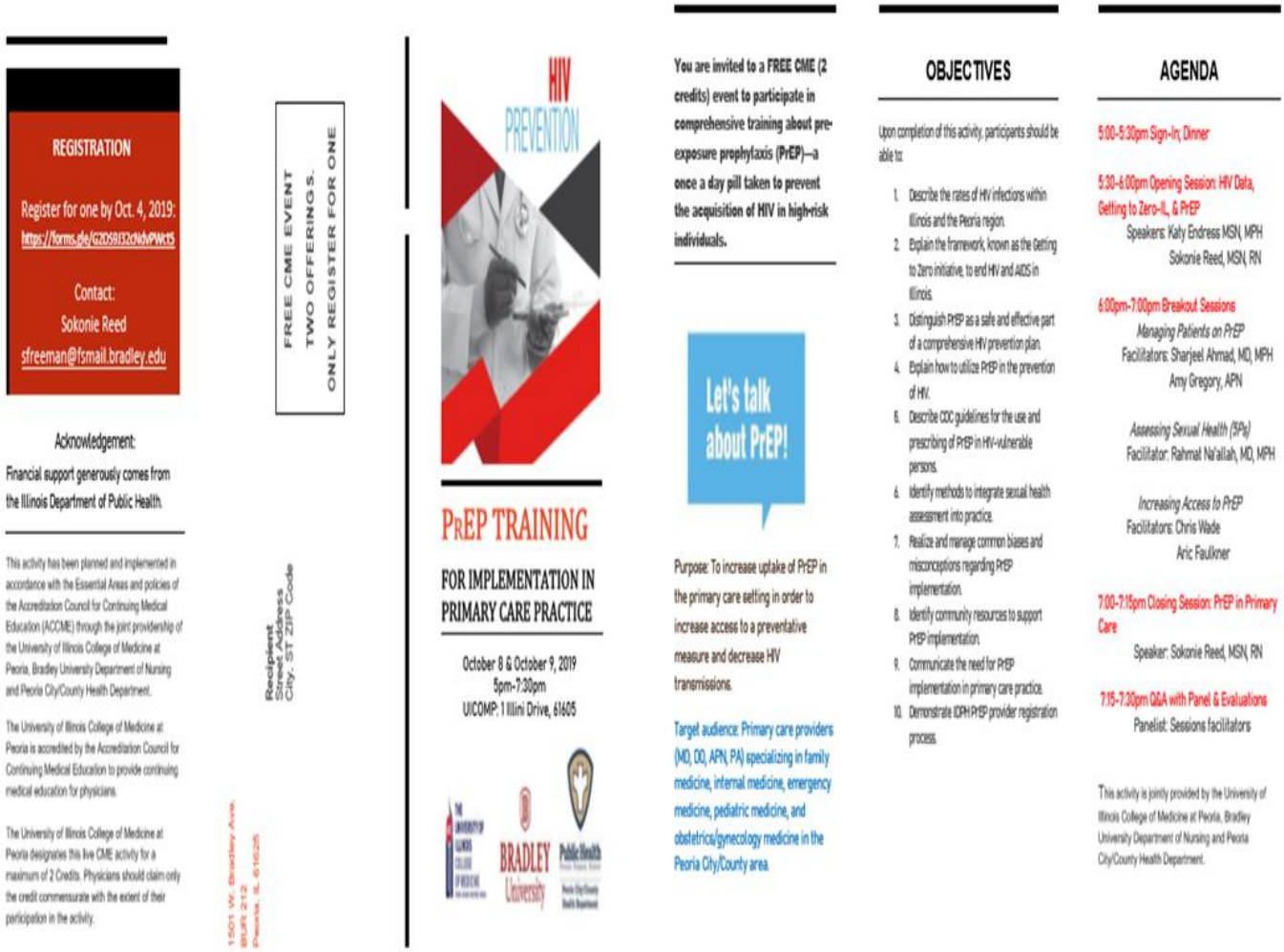
Chicago Peoria UIC Rockford Urbana-Champaign
Phone (309) 672-4984 • Fax (309) 672-4790

Jessica Clark, DNP
Associate Dean and Director
Bradley University Department of Nursing

Monica Hendrickson, MPH
Public Health Administrator
Peoria City County Health Department

Appendix C

Event Brochure



REGISTRATION

Register for one by Oct. 4, 2019:
https://forms.gle/GZDS9J32cNdvPWct5

Contact:
Sokonie Reed
sfreeman@fsmail.bradley.edu

Acknowledgement:
Financial support generously comes from the Illinois Department of Public Health.

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the University of Illinois College of Medicine at Peoria, Bradley University Department of Nursing and Peoria City/County Health Department.

The University of Illinois College of Medicine at Peoria is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The University of Illinois College of Medicine at Peoria designates this live CME activity for a maximum of 2 Credits. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

FREE CME EVENT
TWO OFFERINGS.
ONLY REGISTER FOR ONE

Recipient
Street Address
City, ST ZIP Code

1501 W. Bradley Ave.
BUR 212
Peoria, IL 61625

HIV PREVENTION

PrEP TRAINING

FOR IMPLEMENTATION IN PRIMARY CARE PRACTICE

October 8 & October 9, 2019
5pm-7:30pm
UICOMP: 1 Illini Drive, 61605

You are invited to a FREE CME (2 credits) event to participate in comprehensive training about pre-exposure prophylaxis (PrEP)—a once a day pill taken to prevent the acquisition of HIV in high-risk individuals.

Let's talk about PrEP!

Purpose: To increase uptake of PrEP in the primary care setting in order to increase access to a preventative measure and decrease HIV transmissions.

Target audience: Primary care providers (MD, DO, APN, PA) specializing in family medicine, internal medicine, emergency medicine, pediatric medicine, and obstetrics/gynecology medicine in the Peoria City/County area.

OBJECTIVES

Upon completion of this activity, participants should be able to:

1. Describe the rates of HIV infections within Illinois and the Peoria region.
2. Explain the framework, known as the Getting to Zero initiative, to end HIV and AIDS in Illinois.
3. Distinguish PrEP as a safe and effective part of a comprehensive HIV prevention plan.
4. Explain how to utilize PrEP in the prevention of HIV.
5. Describe CDC guidelines for the use and prescribing of PrEP in HIV-vulnerable persons.
6. Identify methods to integrate sexual health assessment into practice.
7. Realize and manage common biases and misconceptions regarding PrEP implementation.
8. Identify community resources to support PrEP implementation.
9. Communicate the need for PrEP implementation in primary care practice.
10. Demonstrate IDPH PrEP provider registration process.

AGENDA

5:00-5:30pm Sign-In; Dinner

5:30-6:00pm Opening Session: HIV Data, Getting to Zero-IL, & PrEP
Speakers: Kaly Endress MSN, MPH
Sokonie Reed, MSN, RN

6:00pm-7:00pm Breakout Sessions
Managing Patients on PrEP
Facilitators: Sharjeel Ahmad, MD, MPH
Amy Gregory, APN

Assessing Sexual Health (SPs)
Facilitator: Rahmat Na'allah, MD, MPH

Increasing Access to PrEP
Facilitators: Chris Wade
Aric Faulkner

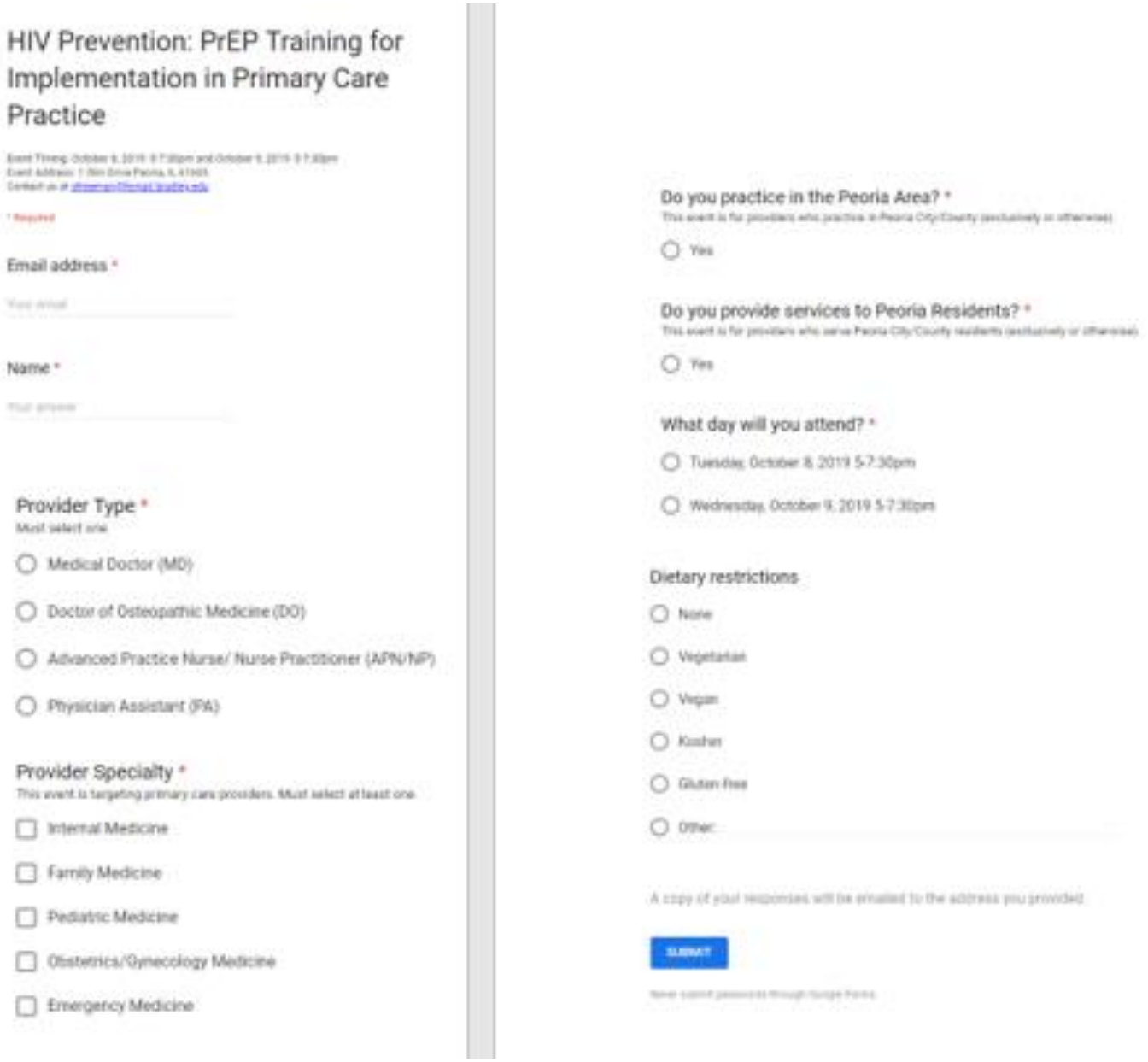
7:00-7:15pm Closing Session: PrEP in Primary Care
Speaker: Sokonie Reed, MSN, RN

7:15-7:30pm Q&A with Panel & Evaluations
Panelist: Sessions facilitators

This activity is jointly provided by the University of Illinois College of Medicine at Peoria, Bradley University Department of Nursing and Peoria City/County Health Department.

Appendix D

Event Registration Form



HIV Prevention: PrEP Training for Implementation in Primary Care Practice

Email address *

Name *

Provider Type *
Must select one

- Medical Doctor (MD)
- Doctor of Osteopathic Medicine (DO)
- Advanced Practice Nurse/ Nurse Practitioner (APN/NP)
- Physician Assistant (PA)

Provider Specialty *
This event is targeting primary care providers. Must select at least one.

- Internal Medicine
- Family Medicine
- Pediatric Medicine
- Obstetrics/Gynecology Medicine
- Emergency Medicine

Do you practice in the Peoria Area? *

- Yes

Do you provide services to Peoria Residents? *

- Yes

What day will you attend? *

- Tuesday, October 8, 2019 5-7:30pm
- Wednesday, October 9, 2019 5-7:30pm

Dietary restrictions

- None
- Vegetarian
- Vegan
- Kosher
- Gluten free
- Other:

SUBMIT

Appendix E

CME Evaluation

THE UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE
CHICAGO PEORIA ROCKFORD URBANA

CONTINUING MEDICAL EDUCATION EVALUATION

Date: _____ **HIV Prevention: PrEP Training for Implementation in Primary Care Practice**

CME Evaluation Instrument

This form is required for physicians seeking CME credit. PLEASE PRINT

Physician's Name: _____

Physician Specialty*: _____

Today's Date: _____

*Specialties that were identified as target audiences for this activity include Primary Care Providers: Emergency, Internal Medicine, Family Medicine, OB/GYN, and Pediatric Medicine.

This activity is accredited for a maximum of 2 credits.

Number of Credits you are Requesting: _____

1. As a result of participating in this CME activity, do you agree the following objectives were met:

Opening Session; Speakers: Katy Endress, MSN, MPH & Sokonie Reed, MSN, RN

A. Describe the rates of HIV infections within Illinois and the Peoria region.

Agree Disagree

B. Explain the framework, known as the Getting to Zero initiative, to end HIV and AIDS in Illinois.

Agree Disagree

C. Distinguish PrEP as a safe and effective part of a comprehensive HIV prevention plan.

Agree Disagree

Breakout Session: Managing Patients on PrEP; Facilitators: Dr. S. Ahmad & Amy Gregory, APN

D. Explain how to utilize PrEP in the prevention of HIV.

Agree Disagree

E. Describe CDC guidelines for the use and prescribing of PrEP in HIV-vulnerable persons.

Agree Disagree

Breakout Session: Assessing Sexual Health (5Ps); Facilitator: Dr. R. Na'allah

F. Identify methods to integrate sexual health assessment into practice.

Agree Disagree

Breakout Session: Increasing Access to PrEP, Facilitators: Chris Wade & Aric Faulkner

G. Realize and manage common biases and misconceptions regarding PrEP implementation.

Agree Disagree

H. Identify community resources to support PrEP implementation.

Agree Disagree

Closing Session: Speaker: Sokonie Reed, MSN, RN

I. Communicate the need for PrEP implementation in primary care practice.

Agree Disagree

J. Demonstrate IDPH PrEP provider registration process.

Agree Disagree

2. As a result of participating in this CME activity, will you adopt a new strategy or modify an existing strategy for managing patients or accomplishing other work that you do?

☐ Yes ☐ No

If yes, what do you intend to do differently?

_____

_____

If no, please describe any obstacles that stand in the way of your changing how you practice based on this activity?

_____

_____

_____

_____

_____

3. Disclosure of Commercial Interest

Speakers are required to disclose whether or not they have commercial interests which may bias their presentations. Was such disclosure made by each speaker?

☐ Yes ☐ No

4. Please identify any education needs you have that if addressed in a learning activity such as this one could improve the outcomes of the work you do. This information may guide future CME

Appendix E continued

events:

_____

_____

_____

5. Did you detect any bias in presentations in favor of or against any commercial product or service? Bias means that information about a product or service is presented without evidence for research that is conducted under generally accepted principles and/or reference to other similar products or services in the same class.

☐ Yes ☐ No

If **yes**, please describe the bias that you detected?

_____

_____

Please Sign: _____

3/1/2019

Appendix F

Follow-Up CME Outcome Survey

THE UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

CME OUTCOME SURVEY

Thank you for attending the **HIV Prevention: PrEP Training for Implementation in Primary Care Practice** event on October 8th or 9th, 2019.

Learning objectives for this session were:

1. Describe the rates of HIV infections within Illinois and the Peoria region.
2. Explain the framework, known as the Getting to Zero initiative, to end HIV and AIDS in Illinois.
3. Distinguish PrEP as a safe and effective part of a comprehensive HIV prevention plan.
4. Explain how to utilize PrEP in the prevention of HIV.
5. Describe CDC guidelines for the use and prescribing of PrEP in HIV-vulnerable persons.
6. Identify methods to integrate sexual health assessment into practice.
7. Realize and manage common biases and misconceptions regarding PrEP implementation.
8. Identify community resources to support PrEP implementation.
9. Communicate the need for PrEP implementation in primary care practice.
10. Demonstrate IDPH PrEP provider registration process.

Now after **2.5** months, please indicate how this session affected your clinical practice.

All answers are confidential.

1. Have you implemented CDC guidelines on PrEP into your practice?
   YES **NO**
2. Have you prescribed PrEP since the CME event?
   YES **NO**
3. If you answered "NO," do you intend to prescribe PrEP in the future?
   YES **NO**
4. Have you registered as a PrEP prescriber on prep4illinois.com?
   YES **NO**
5. If you answered "NO," do you intend to register as a PrEP prescriber on prep4illinois.com?
   YES **NO**
6. Please describe one or two strategies that you have tried as a result of participating in the activity listed above:

THE UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

7. Do you feel more confident using this strategy? Why or why not:
8. If not, what would help you to try a new strategy?
9. Please list topics that would be useful for future continuing medical education events:

Appendix G

Request for Presenter E-mail

___(*Recipient Name*)_____:

Please accept this as a formal request for your participation as a speaker or facilitator for one of the sessions in a CME event to promote PrEP in primary practice.

Below are the details of the CME event and the speaker/facilitator responsibilities in participating.

Proposed Title: HIV Prevention: PrEP Training for Implementation in Primary Care Practice

Dates: Tuesday, October 8, 2019, 5-7:30pm AND Wednesday, October 9, 2019, 5-7:30pm (Two offerings to increase attendance. Participants will only register for one)

Location: UICOMP, 1Illini Dr.

Speaker/Facilitator Responsibility: Facilitate a 20-minute breakout session titled, _*(Title of session)*_____. Discuss CDC guidelines in regard to your session's focus. Include case studies to practice the application of guidelines and facilitate discussions. I will present a case study sample to use as a guide. However, as an experienced individual in this area, you are encouraged to input information from your practice and experience. You may use real cases as long as you are careful to not reveal patient or client personal identifiers in your presentation. The session will occur 3 times with different groups each day.

The event will conclude with a 15-minute Q&A with a panel that will include you as a speaker/facilitator. This is to give participants the opportunity to ask last minute questions they may not have asked during the breakout session.

Your participation is voluntary without compensation. I hope you are willing and able to help with this project. I will await your response. Thank you for considering.

Sincerely,
Sokonie S. Reed
DNP Student
Bradley University Department of Nursing

Appendix H

Presenter Authorization Form

[Date]

Dear Participant:

Thank you for agreeing to serve as a speaker or a breakout session facilitator in the proposed CME event titled, **HIV Prevention: PrEP Training for Implementation in Primary Care Practice**. Please note that this event is part of a Bradley University doctorate of nursing practice (DNP) student's scholarly project. As such, the student is required to produce and submit a written report of the project's planning, design, implementation, and results to their project's chair, mentor, and the Bradley's department of nursing. The student may also pursue opportunities to publish and/or present the project's report. While you are not a subject of this project, as a participant, your name, title, work institution, and/or role(s) in the project, may be referenced in the project's report.

Please indicate your authorization to be referenced below. With the second option, you will be described with no direct identifiers, ie: a local infectious disease doctor.

- ☐ I authorize Bradley University DNP student, Sokonie Reed, to reference my name, title, and/or work institution in her doctorate project's report. She may also discuss the role(s) I played in implementing her project.
- ☐ I DO NOT authorize the reference of my name, title, and/or work institution in the doctorate project's report.

Print Name/Title: _____

Signature: _____

Appendix I

Event Sign-In Sheet

HIV PREVENTION: PrEP TRAINING FOR IMPLEMENTATION IN PRIMARY CARE PRACTICE

Date: _____

Sign-In

NO.	FIRST NAME	LAST NAME	EMAIL	SIGNATURE
1				
2				
3				
4				
5				
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7				
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NO.	FIRST NAME	LAST NAME	EMAIL	SIGNATURE
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Appendix J

Event Agenda

HIV Prevention: PrEP Training for Implementation in Primary Care Practice

Tuesday, October 8, 2019

5:00-7:30pm

AGENDA

5:00-5:30pm Sign-In; Dinner

5:30-6:00pm Opening Session: HIV Data, Getting to Zero, & PrEP

Speakers: Katy Endress MSN, MPH, FNP-BC, Peoria County Health Dept

Solconie Reed, MSN, FN, Bradley University

6:00pm-7:00pm Breakout Sessions

Managing Patients on PrEP

Facilitators: Sharjeel Ahmad, MD, MPH, FACP, AAHIVS, Positive Health Solutions

Amy Gregory, APN, AAHIVS, Positive Health Solutions

Assessing Sexual Health (5Ps)

Facilitator: Rahmat Na'allah, MD, MPH, FAAFP, UnityPoint, UICOMP

Increasing Access to PrEP

Facilitators: Chris Wade, Central Illinois FRIENDS

Aric Faulkner, Person who uses PrEP

7:00-7:15pm Closing Session: PrEP in Primary Care

Speakers: Solconie Reed, MSN, FN, Bradley University

7:15-7:30pm Q&A with Panel & Evaluations

Panelists: Sessions facilitators

This activity is approved for 2 CME credits. To receive CME credits, you must sign in at the beginning of the day and return the completed evaluation form at the end of the training.

HIV Prevention: PrEP Training for Implementation in Primary Care Practice

Wednesday, October 9, 2019

5:00-7:30pm

AGENDA

5:00-5:30pm Sign-In; Dinner

5:30-6:00pm Opening Session: HIV Data, Getting to Zero, & PrEP

Speakers: Katy Endress MSN, MPH, FNP-BC, Peoria County Health Dept

Solconie Reed, MSN, FN, Bradley University

6:00pm-7:00pm Breakout Sessions

Managing Patients on PrEP

Facilitators: Sharjeel Ahmad, MD, MPH, FACP, AAHIVS, Positive Health Solutions

Amy Gregory, APN, AAHIVS, Positive Health Solutions

Assessing Sexual Health (5Ps)

Facilitator: Rahmat Na'allah, MD, MPH, FAAFP, UnityPoint, UICOMP

Increasing Access to PrEP

Facilitators: Chris Wade, Central Illinois FRIENDS

Aric Faulkner, Person who uses PrEP

7:00-7:15pm Closing Session: PrEP in Primary Care

Speakers: Solconie Reed, MSN, FN, Bradley University

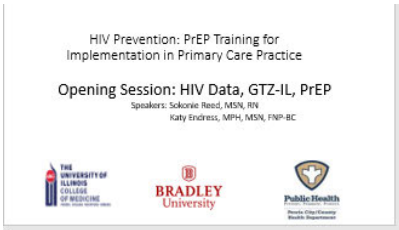
7:15-7:30pm Q&A with Panel, & Evaluations

Panelists: Sessions facilitators

This activity is approved for 2 CME credits. To receive CME credits, you must sign in at the beginning of the day and return the completed evaluation form at the end of the training.

Appendix K

Opening Session PowerPoint



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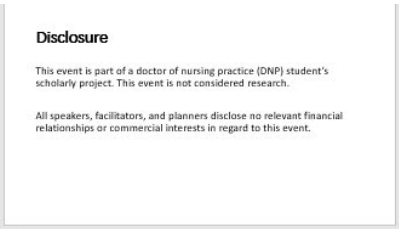

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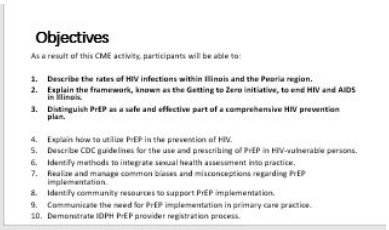

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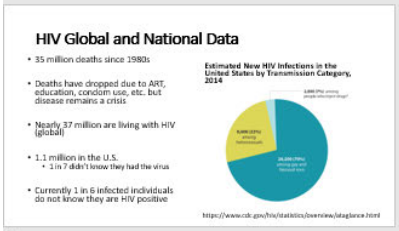

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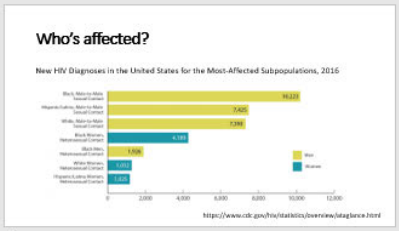

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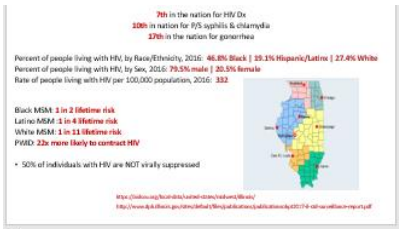

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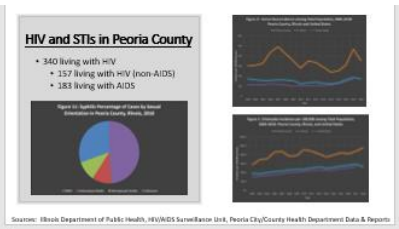

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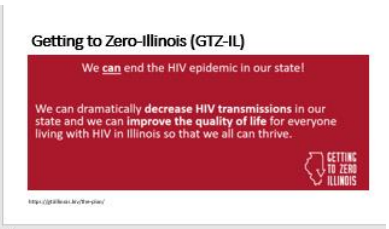

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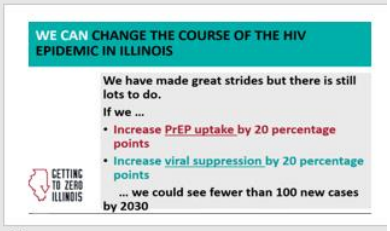

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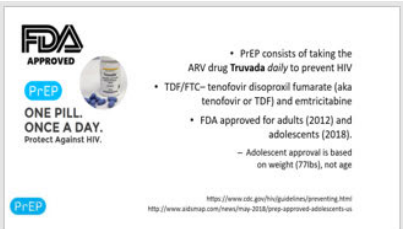

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Appendix K continued

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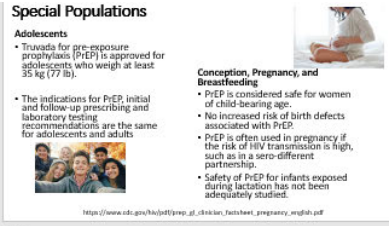

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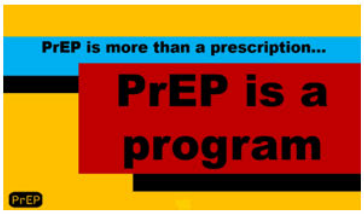

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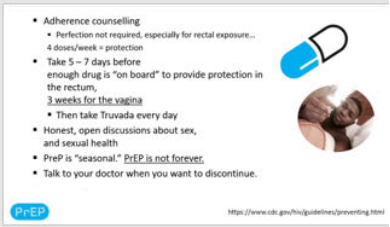

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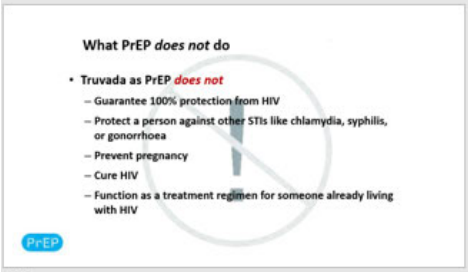

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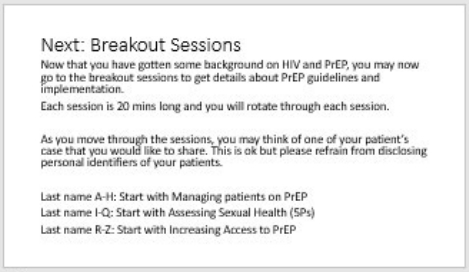

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Appendix L

Breakout Sessions 1 and 2 PowerPoints

HIV Prevention: PrEP Training for Implementation in Primary Care Practice

Managing Patients on PrEP
Length: 20 mins
Facilitators: Dr. Ahmad & Amy Gregory, APN

1

Disclosure

The facilitators disclose no relevant financial relationships or commercial interests in regard to this presentation.

2

Objectives

- Explain how to utilize PrEP in the prevention of HIV.
- Describe CDC guidelines for the use and prescribing of PrEP in HIV-vulnerable persons.

3

PrEP guidelines

- Review CDC guidelines: file:///C:/Users/dhesman/Downloads/cdc-hiv-prep-guidelines-2017.pdf
- Identifying eligibility
- Prescribing PrEP
- Managing Patients on PrEP

US Public Health Service
PREEXPOSURE PROPHYLAXIS FOR THE PREVENTION OF HIV INFECTION IN THE UNITED STATES – 2017 UPDATE
A CLINICAL PRACTICE GUIDELINE

4

Case: Patient History

AO is a 32-year-old transwoman (male to female) who has been your patient for 5 years. She has been on stable doses of spironolactone and estrogen and has been happy with the results of that therapy. You last saw her 6 months ago for refills and her annual laboratory tests.

5

Encounter

Today, AO reports that she broke up with her long-term male partner 5 months ago, and has since been active in the club scene. You ask for specific information, and she explains that she has been having sex with people she meets while partying, often without knowing them before that night.

She wants to use condoms during these sex acts, but reports that sometimes the moment gets away from her and she participates in sex acts without barrier protection. She has been drinking alcohol when she goes clubbing, but denies using any other drugs.

6

Discussion

- Hearing AO's report, what are your concerns?
- Would you consider PrEP for AO?

7

You are concerned about AO's risk of acquiring human immunodeficiency virus (HIV) or other sexually transmitted infections (STIs) as a result of these high-risk sexual encounters. AO has always been adherent to her hormone regimen, which she has made part of her daily routine.

You know that there is now a medication approved for daily use for HIV prevention, and you initiate a conversation to gauge her interest in this therapy.

8

What is PrEP?

- The FDA approved regimen for PrEP
  - Truvada (TDF-FTC)
  - Descovy (TAF-FTC)
- Once daily with or without food
- Effective once adequate levels of medication are achieved in the rectal and cervico-vaginal tissues
  - ➢7 days in patients engaging exclusively in receptive anal sex
  - ➢21 days for women engaging in receptive vaginal sex
- Analysis predicts that if PrEP use among individuals at high risk of HIV could reach 50% by 2022, it would result in a 40% decline in the rate of new diagnoses.

9

10

- FTC/TAF approved as PrEP for adults who are at risk for HIV, yet the FDA stopped short of recommending the new regimen "for receptive vaginal sex" (i.e., cisgender women and transgender men), noting in its approval notice that "the effectiveness in this population has not been evaluated."
- Decision in line with an August recommendation from the FDA's expert panel, voted 16 to 2 in favor of approving the drug for men and transgender women who have sex with men but 10 to 8 against its approval in cisgender women.

11

Determining eligibility for PrEP

- AO is heartened to hear that she has more options for protecting herself from HIV infection. She understands that this medication must be taken every day to prevent HIV infection, and she thinks that she can add TDF/FTC (Truvada) into her daily medication routine. She also realizes that taking pre-exposure prophylaxis (PrEP) helps prevent HIV in combination with -- not instead of -- other risk-reduction tools, such as using condoms consistently, limiting partners, and avoiding mind-altering substances during sexual activity.
- You explain that you need to know more about her sexual practices to properly screen her as a candidate for PrEP.

12

You ask the following questions as part of your sexual history taking, based on the Centers for Disease Control and Prevention's model of "5 Ps" of sexual history:

Partners	AO reports that all of her partners are biologically male, and estimates that she has had 5 partners in the past 6 months
Practices	She states that she has done "lots of stuff." On further questioning, she reports being a "top" (insertive anal intercourse), a "bottom" (receptive anal intercourse), and having performed oral sex. She does not think that any of her partners have had HIV infection or any STIs. She has been drinking alcohol with some of these encounters, but denies using any street or club drugs while having sex.
Protection from STIs	AO reports always using condoms when she is a top, but since in the past 6 months when she was a bottom and thought her partner was using a condom, she found out afterward that he had taken it off. She has never used a condom during oral sex.
Past history of STIs	AO had gonorrhea when she was in her early 20s, but has had no STIs since.
Prevention of pregnancy	As a transwoman with male partners, AO does not have to be concerned with pregnancy.

13

Discussion

PrEP is for HIV-negative individuals, however CDC recommends screening for additional infectious agents. Beyond screening for HIV, what laboratory screenings must be done before prescribing PrEP for this patient?

14

Evaluation of patients prior to initiation of pre-exposure prophylaxis (PrEP) against HIV

- Determine eligibility
  - ✓Confirm that patient is at substantial, ongoing, high risk for acquiring HIV infection based upon detailed sexual and drug use history and results of STI testing
  - ✓Confirm that calculated estimated glomerular filtration rate is ≥60 mL/min/1.73 m2 for Truvada and ≥30 mL/min/1.73 m2 for Descovy

https://www.uptodate.com

15

Appendix L continued

Evaluation of patients prior to initiation of pre-exposure prophylaxis (PrEP) against HIV

- Other recommended tests to determine risks of PrEP

✓Screen for HBV

✓Obtain urinalysis in patients with risk factors for renal disease

✓Perform DEXA scan in patients with, or at high risk for, osteoporosis

✓Perform pregnancy testing for patients who could become pregnant

https://www.uptodate.com

16

Evaluation of patients prior to initiation of pre-exposure prophylaxis (PrEP) against HIV

- Important Points to consider

✓Vaccinate against hepatitis B if susceptible

✓If chronic HBV is diagnosed, TDF-FTC can be used for both treatment of chronic HBV and HIV prevention

✓Risk factors for renal disease include hypertension, diabetes, proteinuria, and prior history of renal insufficiency

https://www.uptodate.com

17

Evaluation of patients prior to initiation of pre-exposure prophylaxis (PrEP) against HIV

- Important points to consider:

- Risk factors for osteoporosis

➢Advancing age

➢Previous fracture

➢Glucocorticoid therapy

➢Parental history of hip fracture

https://www.uptodate.com

18

Evaluation of patients prior to initiation of pre-exposure prophylaxis (PrEP) against HIV

- Important points to consider:

- Risk factors for osteoporosis

➢Low body weight

➢Excessive alcohol consumption

➢Rheumatoid arthritis

➢Secondary osteoporosis (eg, hypogonadism or premature menopause, malabsorption, chronic liver disease, inflammatory bowel disease)

https://www.uptodate.com

19

Agreement/Checklist

https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-guidelines-2017.pdf

20

21

22

Beginning PrEP medication regimen

- Prescribe 1 tablet of TDF-FTC daily
- Prescribe no more than a 90-day supply, renewable only after HIV testing confirms that patient remains HIV uninfected
- Provide counseling on condoms, risk reduction, and PrEP medication adherence
- condoms should be encouraged until adequate levels of tenofovir are achieved in the rectal and cervico-vaginal tissues

➢7 days in patients engaging exclusively in receptive anal sex

➢21 days for women engaging in receptive vaginal sex

https://www.uptodate.com

23

- Providers are encouraged to screen patients considering PrEP for other STIs and for hepatitis B virus (HBV) infection.
- TDF/FTC can also be used to treat HBV infection, but patients taking this medication must be closely monitored to avoid an HBV flare upon discontinuation.
- Patients testing negative for HBV surface Ab/Ag should be offered vaccination to prevent HBV infection.
- Patients should also be tested for syphilis, gonorrhea, and chlamydia at all sites where they have been sexually exposed; in AO's case, that would be testing urethral, pharyngeal, and rectal sites.

24

Determining eligibility continue

- AO denies having any recent illnesses, and you provide her with screening tests as indicated.
- You inform her that you will have her test results back in a week, and ask her to abstain from all sexual activity until she comes back for her next visit.
- You send her home with patient handouts on TDF/FTC for PrEP, downloaded from the CDC website.

25

Making the decision to prescribe PrEP

- One week later, AO comes back to see you, and you are pleased to review the questions that arose from reading the materials about PrEP that you provided.
- Together, you review her laboratory test results, which are negative for HIV, HBV, syphilis, gonorrhea and chlamydia at all sites tested. You offer to start her HBV vaccine series, and she accepts. She reports no fevers or viral symptoms since you last saw her.
- You also review her current medications.

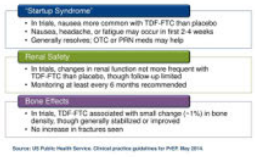
26

Discussion

- What medications would be concerning for drug interactions while taking tenofovir/emtricitabine (TDF/FTC)?

27

Side Effects/Safety Profile



28

Side effects/Safety Profile

- Other common side effects: Abdominal pain, weight loss, flatulence, diarrhea
- Rare side effects

29

Drug Interactions

- Avoid administering with concurrent or recent use of nephrotoxic drugs.
- Serum concentrations of the following drugs and/or TDF may be increased. Monitor for dose-related renal toxicities:

✓Acyclovir
✓Valacyclovir
✓Cidofovir
✓Ganciclovir
✓Valganciclovir
✓Aminoglycosides
✓high-dose or multiple NSAIDS

30

Appendix L continued

Drug interactions

- Avoid lovastatin, simvastatin, high dose atorvastatin and rosuvastatin; Pravastatin and Pitavastatin ok

31

- Though there few drug-drug interactions with TDF/FTC, some antibiotics, such as acyclovir, could impair renal function. Patients should have creatinine levels of at least 60 mL/min if they plan to take TDF/FTC.

32

Initiating PrEP

- You determine AO is a great candidate for PrEP.
- You and AO review and sign the patient and provider consent document provided by the CDC.

33

Initiating PrEP cont.

- You discuss possible side effects, including nausea, headaches, and diarrhea, and how to contact the clinic if she has any of these.
- You schedule AO for a clinic visit in 1 month to monitor side effects and assess medication adherence, and then another in 3 months for follow-up and laboratory tests. AO leaves your office with a bag of condoms and a prescription for a 3-month supply of once-daily TDF/FTC.

34

Follow Up visits/Managing Patients

- AO stops in to the clinic the week before her 3 months visit for her pre-visit laboratory tests to determine her HIV status and kidney function.

35

Follow-up Visit/Managing Patients cont.

- AO returns to see you for her 3 months appointment, happy with the control that she has over her sexual health. She has been taking TDF/FTC every day without fail, and has had no side effects.
- Her laboratory test results include a negative HIV test result and a stable creatinine level. You screen AO for use of mind-altering substances, and she reports that she is still drinking alcohol, but she is not using any other drugs.
- Though AO has had a few sexual encounters without condoms, she has not had as many anonymous encounters at bars. She has also been talking to friends and encouraging them to talk with their doctors about starting PrEP.

36

Counseling and conclusion

- You are reassured about AO's adherence to PrEP, but you know that she is still at risk of acquiring STIs by not using condoms. You encourage her to improve her use of condoms in all sexual encounters.
- AO sets a goal of bringing up condoms with her next sexual partner, and she says that she will let you know how it goes.
- You renew AO's prescription for TDF/FTC, and schedule to see her again when she needs refills in 3 months.

37

Discussion

- Any questions or comments?
- Points to offer
  - Providers should work to form positive, non-judgmental relationships with their patients
  - Providers should counsel patients on sexual health and encourage use of condoms while on PrEP—except in cases where pregnancy is a goal of a monogamous serodiscordant relationship
  - Providers should screen for and help patients develop medication adherence

38

Summary

https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-guidelines-2017.pdf

39

HIV Prevention: PrEP Training for Implementation in Primary Care Practice

Assessing Sexual Health (5Ps)

Length: 20 mins

Facilitator: Rahmat Na'Allah, MD, MPH, FAAFP

THE UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE · BRADLEY University · Public Health

1

Disclosure

This facilitator discloses no relevant financial relationships or commercial interests in regard to this presentation.

2

Objectives

- Identify methods to integrate sexual health assessment into practice.

3

Sexual Health/5Ps

- Review CDC guidelines: file:///C:/Users/sfreeman/Downloads/aaa-php-discussing-sexual-health.pdf
- Partners
- Practices
- Past hx of STIs
- Protection
- Pregnancy Prevention

4

Case: Patient History

Lynn is a sexually active 15-year-old who lives with her mother and two younger sisters. She does not confide in any adults about her activities, but rather discusses them with her two best friends in high school, who also are sexually active. Last week a guest speaker from the local health department discussed the topic of sexually transmitted infections (STIs) at a school assembly. The discussion caused Lynn to think quite a bit about her sexual practices. She realized she hasn't been doing much to protect herself and she's worried about possible infections. Today she's seeing her PCP for her annual physical.

5

Assessment

- Lynn vitals are stable and she appears to be a healthy teenage girl.
- At the end of the physical examination Lynn reluctantly tells her PCP about her sexual activities and concerns.
- Lynn denies vaginal discharge, odor, itching, or painful intercourse.

Height	63 inches
Weight	[illegible] lbs
Blood Pressure	110/70 mm Hg
Pulse	78 beats/min

6

Appendix L continued

The PCP uses the familiar "5 Ps" to take a further sexual history, and learns the following:

The 5 Ps

Partners	Lynn states that she has been with her boyfriend for 6 months and he's the only person she has been with in that time. He is the third person she has been with since her first sexual encounter at the age of 13.
Practices	Lynn reports having vaginal and oral intercourse. She does occasionally engage in anal sex.
Protection from STIs	Lynn knows she should use condoms but admits she rarely does. She mostly goes along with whatever her boyfriend decides. Her current boyfriend doesn't like the feel of condoms.
Past history of STIs	Lynn recalls having UTIs after several of her past sexual encounters but she has never been treated for STIs like chlamydia or gonorrhea. However, she comments that her boyfriend has been experiencing a penile discharge and is concerned that "he may have infected me with some disease."
Prevention of pregnancy	Lynn is clear that she does not want to have a baby anytime soon. She's interested in birth control but she doesn't want her mother to know she's sexually active.

7

Discussion

- Using your knowledge and/or experience, how do educational interventions to encourage safer sex by talking about and distributing condoms influence patients?
- Do they increase or decrease risk-taking behaviors? Increase or decrease condom use?

8

What is Comprehensive Sex Education (CSE)

- Medically accurate, evidence based, and age appropriate sexuality education that includes
  - Benefits of delaying sexual intercourse
  - Normal reproductive development
  - Contraception-including LARC methods
  - Barrier protection to prevent STIs
- Emphasis is placed on gender equity, consent and decision making, intimate partner violence, healthy relationships and accurate assessment of online information

9

Discussion

- Is Lynn a candidate for PrEP?
- Why or Why not?

10

Eligibility for PrEP

- Heterosexual and HIV negative
  - Have an HIV+ partner
  - Have multiple partners, partner with multiple partners, partner whose HIV status is unknown and you also don't always use condom for sex with people who inject drugs or for sex with bisexual men
- Gay/bisexual Man and you
  - Have an HIV+ partner
  - Have multiple partners, partner with multiple partners, partner whose HIV status is unknown and you also have anal sex without condom or recently had an STI
- You inject drugs and –
  - Share needles or equipment to inject drugs in the past 6 months
  - Are at risk for getting HIV from sex

11

Assessment/Plan

- High Risk Sex- STI counseling, STI testing including HIV, syphilis
- You offer Lynn a connection with the clinic's health educator, who can teach her about the types of condoms available, including the female condom which may offer her more control in the decision to use condoms.
- Contraception counseling- LARC and other options
- Close follow up

12

Discussion

- Any questions or comments?

13

Conclusion

- Points to offer
  - Sexual health assessment is important especially in adolescents.
  - Using the 5Ps is effective in determining eligibility for PrEP.
  - Talking with patients about their sexual health and sexual risks is an essential part of preventive health care. When these conversations are skipped, providers miss potential risks, safety issues, and preconception counseling opportunities.

14

Appendix M

Closing Session PowerPoint

HIV Prevention: PrEP Training for Implementation in Primary Care Practice

Closing Session: PrEP in Primary Care

Speaker: Sokonie Reed, MSN, RN

Q & A

Panelists: Sessions facilitators

THE UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE PEORIA

BRADLEY University

Public Health

1

Disclosure

This event is part of a doctor of nursing practice (DNP) student's scholarly project. This event is not considered research.

All speakers, facilitators, and planners disclose no relevant financial relationships or commercial interests in regard to this event.

2

Objectives

As a result of this CME activity, participants will be able to:

1. Describe the rates of HIV infections within Illinois and the Peoria region.
2. Explain the framework, known as the Getting to Zero initiative, to end HIV and AIDS in Illinois.
3. Distinguish PrEP as a safe and effective part of a comprehensive HIV prevention plan.
4. Explain how to utilize PrEP in the prevention of HIV.
5. Describe CDC guidelines for the use and prescribing of PrEP in HIV-vulnerable persons.
6. Identify methods to integrate sexual health assessment into practice.
7. Realize and manage common biases and misconceptions regarding PrEP implementation.
8. Identify community resources to support PrEP implementation.
9. **Communicate the need for PrEP implementation in primary care practice.**
10. **Demonstrate IDPH PrEP provider registration process.**

3

The practice of PrEP

(Pre-Exposure Prophylaxis)

4

PrEP is not DIY!

5

The Gap

- Not enough healthcare providers know about PrEP
- Only 10-20% of people who need PrEP are actually taking it
- Populations most vulnerable to PrEP are not aware or are not taking PrEP.

https://www.pcdc.org/integrate-prep/

https://www.cdc.gov/nchhstp/newsroom/images/2018/hiv/PrEP_highres.jpg

6

CDC, March 2018

ESTIMATED NUMBER OF ADULTS WHO COULD POTENTIALLY BENEFIT FROM PREP, UNITED STATES, 2015

	Gay, bisexual, or other men who have sex with men	Heterosexually active adults	Persons who inject drugs	Total by race/ethnicity
Black/African American, non-Hispanic	309,190	104,660	26,490	500,340
Hispanic/Latino	220,760	44,580	14,920	282,260
White, non-Hispanic	238,670	36,540	26,020	303,230
Total who could potentially benefit from PrEP	813,070	250,080	72,510	1,144,550

Women = 176,670
Men = 81,410

2017 U.S. pop = 325,719,178 White 60.7% Latino 18.1% Black 13.4%

https://www.cdc.gov/nchhstp/newsroom/images/2018/hiv/PrEP-table_highres.jpg

7

Peoria's Gap

Only 4 providers and Planned Parenthood are listed on prep4illinois.com as PrEP prescribers

(IDPH, 2018)

8

PrEP as part of primary care

PrEP

- PrEP is preventative care
- Any medical prescribing medical provider can write a prescription for PrEP
- Referrals are barriers– HIV negative individuals are unlikely to go see HIV specialists
- PrEP can be part of comprehensive care

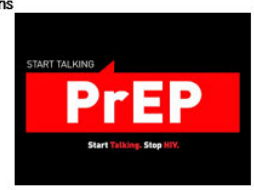
9

PrEP Discussions

Marco

Kevin

Rosa



10

Accessing PrEP in Illinois

IDPH

prep4illinois.com

Illinois Pre-exposure Prophylaxis (PrEP) Assistance Program

Hotline 1-800-825-3518

11

Resources

- Pre-exposure Prophylaxis for the Prevention of HIV Infection in the United States – 2017 Update Clinical Providers' Supplement. https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-provider-supplement-2017.pdf
- CDC PrEP resources: https://www.cdc.gov/actagainstaids/campaigns/starttalking/materials/prepresources.html
- https://www.prepwatch.org/prep-resources/
- https://www.positivelyaware.com/articles/prep-resources
- https://hiveonline.org/
- http://nccc.ucsf.edu/clinical-resources/prep-guidelines-and-resources/

12

Q & A Panel

- Dr. Ahmad
- Amy Gregory
- Dr. Na'allah
- Chris Wade
- Aric Faulkner

13

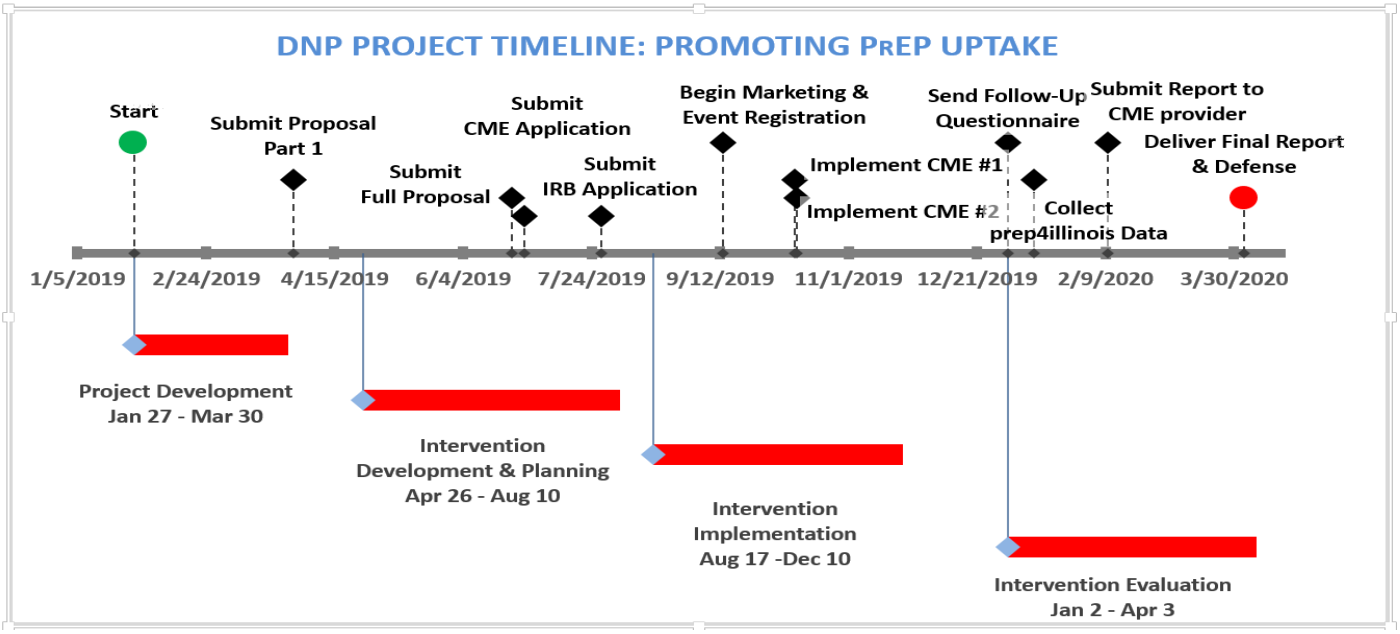
EVALS PLEASE

Please complete and submit your evaluation.

14

Appendix N

Project Timeline



Tasks

Start	End	Duration	Label
1/27/2019	3/30/2019	60	Project Development Jan 27 - Mar 30
4/26/2019	8/10/2019	100	Intervention Development & Planning Apr 26 - Aug 10
8/17/2019	12/10/2019	97	Intervention Implementation Aug 17 -Dec 10
1/2/2020	4/3/2020	97	Intervention Evaluation Jan 2 - Apr 3
			Insert new rows above this one

Milestones

Date	Label
1/27/2019	Start
3/30/2019	Submit Proposal Part 1
6/23/2019	Submit Full Proposal
6/28/2019	Submit CME Application
7/28/2019	Submit IRB Application
10/8/2019	Implement CME #1
10/9/2019	Implement CME #2
1/2/2020	Send Follow-Up Survey
1/12/2020	Collect prep4illinois Data
2/10/2020	Submit Report to CME provider
9/13/2019	Begin Marketing & Event Registration
4/3/2020	Deliver Final Report & Defense

Appendix 0

Letter of support (Peoria City/County Health Department)

Public Health
Protect. Promote. Protect.
Peoria City/County

To whom it may concern:

In regard to Sokonie Reed's DNP scholarly project titled: Promoting PrEP Uptake in Primary Care Practice for the Prevention of HIV Transmission, I confirm the Peoria City/County Health Department is a co-partner and supporter of this project as proposed.

The Peoria City/County Health Department does not have access to a community, private, or its own internal review board to review this project. Therefore, the health department defers to Bradley's Committee on the Use of Human Subject in Research (CUHSR) to review this project proposal.

For any questions please feel free to contact me.

Sincerely,

Kathryn Endress

Katy Endress MSN, MPH, FNP-BC
Director of Epidemiology & Clinical Services
Peoria City/County Health Department
2116 N Sheridan Rd Peoria, IL 61604
kendress@peoriacounty.org | 309.679.6010

Appendix P

Bradley University CUHSR Approval

BRADLEY University

DATE: 2 SEP 2019

TO: Sokonie Reed, Sarah Silvest-Guerrero
FROM: Bradley University Committee on the Use of Human Subjects in Research

PROJECT TITLE: Promoting PrEP uptake in primary care practice for the prevention of each HIV transmissions
CUHSR #: 57-19
SUBMISSION TYPE: Initial Review

ACTION: Approved
APPROVAL DATE: 2 SEP 2019
REVIEW TYPE: Quality Assurance

Thank you for the opportunity to review the above referenced proposal. The Bradley University Committee on the Use of Human Subject in Research has determined the proposal to be NOT HUMAN SUBJECTS RESEACH thus exempt from IRB review according to federal regulations.

The study has been found to be not human subject research pursuant to 45 CFR 46.102(i), not meeting the federal definition of research (not contributing to generalizable knowledge). Please note that it is unlawful to refer to your study as research.

Your study does meet general ethical requirements for human subject studies as follows:

1. Ethics training of project personal is documented.
2. The project involves no more than minimal risk and does not involve vulnerable population.
3. Formal consent process is waived because consent is implied by submitting the survey that states is purpose and states that it is confidential; and this waiver does not adversely affect the rights and welfare of the participants. Participants were informed verbally at the CE meeting.
4. Adequate provisions are made for the maintenance of privacy and protection of data.

Please submit a final status report when the study is completed. A form can be found on our website at https://www.bradley.edu/academic/cio/osp/studies/cuhsr/forms/. Please retain study records for three years from the conclusion of your study. Be aware that some professional standards may require the retention of records for longer than three years. If this study is regulated by the HIPAA privacy rule, retain the research records for at least 6 years.

Be aware that any future changes to the protocol must first be approved by the Committee on the Use of Human Subjects in Research (CUHSR) prior to implementation and that substantial changes may result in the need for further review. These changes include the addition of study personnel. Please submit a Request for Minor Modification of a Current Protocol form found at the CUHSR website at https://www.bradley.edu/academic/cio/osp/studies/cuhsr/forms/ should a need for a change arise. A list of the types of modifications can be found on this form.

While no untoward effects are anticipated, should they arise, please report any untoward effects to CUHSR immediately.

This email will serve as your written notice that the study is approved unless a more formal letter is needed. You can request a formal letter from the CUHSR secretary in the Office of Sponsored Programs.

Appendix Q

UICOMP CME Executive Committee Approval

Approved eCME proposal 20190084 Inbox x

ECME@listserv.uic.edu Mon, Sep 9, 2019, 11:08 AM

to me

Your eCME proposal **titled - HIV Prevention: PrEP Training for Implementation in Primary Care Practice** has been approved by central CME executive committee. You may now proceed with your CME activity.

Visit eCME system at the following URL -

https://ecme.medicine.uic.edu/

Grys, Stephen <sgrys@uic.edu> Mon, Sep 9, 2019, 11:20 AM

to me, Rahmat

Good morning,

I wanted to inform you that your program has been approved for CME by the executive committee. If you have any questions, feel free to ask, but no revisions were requested

Thanks,

Steve Grys
Program Coordinator
Office of Continuing Medical Education
University of Illinois College of Medicine at Peoria
PH: 309-671-8483
EM: sgrys@uic.edu

For information on the CME process as well as the most up to date templates and directions, please visit:
https:// peoria.medicine.uic.edu/education/cme/forms-and- materials/

THE UNIVERSITY OF ILLINOIS
COLLEGE OF MEDICINE
PEORIA CHICAGO ROCKFORD URBANA

Appendix R

Financial Disclosure Form

THE UNIVERSITY OF ILLINOIS
COLLEGE OF MEDICINE
CHICAGO PEORIA ROCKFORD URBANA

Office of Continuing Medical Education
University of Illinois College of Medicine

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS

As a provider of continuing medical education (CME) accredited by the Accreditation Council on Continuing Medical Education (ACCME), the University of Illinois College of Medicine must ensure balance, independence, objectivity, and scientific rigor in all CME activities it provides certification for. The College of Medicine prioritizes the health and well-being of the public above personal financial interests. Individuals in control of content for a CME activity, such as activity directors, planning committee members, and speakers, must disclose any relevant financial interest(s) and/or other relationships with the manufacturer(s) of commercial products. Any individual who fails to disclose will be disqualified from participating in a CME activity. Please also disclose any relevant financial relationships of your partner/spouse.

Name: _____ **Presentation Date:** October 8th & 9th, 2019

Conference Name & Presentation Title: HIV Prevention: PrEP Training for Implementation in Primary Care Practice

Role: ☐ Activity Director/Planner ☐ Speaker/Instructor ☐ Both

---

Within the past 12 months have you had a financial relationship with a commercial interest? *A commercial interest is any entity producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on, patients (see page two for glossary of terms). The ACCME does not consider providers of clinical service directly to patients to be commercial interests – unless the provider of clinical service is owned, or controlled by, an ACCME-defined commercial interest.*

☐ **NO, I have not had a financial relationship with a commercial interest within the past 12 months.** ***(Proceed to signature line.)***

☐ **YES, I have had a financial relationship with a commercial interest within the past 12 months.** ***(List the relationship(s) in the table below. These will be disclosed to the audience.)***

Financial Relationship	Companies	Role
Speakers Bureau		
Consultant		
Grant/Research Support		
Stock Ownership (not 401k)		
Other (explain)		

_____ _____
Signature of Person Disclosing **Date**

After disclosing, please return this form to:

Name: Sokonie S. Reed, MSN, RN **E-mail/FAX:** sfreeman@fsmail.bradley.edu

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FOR OFFICE USE ONLY

Instructions for Conflict of Interest Reviewer

1) If this person has nothing to disclose, simply sign and date below.
2) If this person does have disclosures, complete the Conflict of Interest Resolution Form.
3) Return all completed forms to your coordinator in the CME Office.

Rev. 06/2018

Appendix R continued

Reviewer Name: _____ Date: _____

Note: For additional information and/or questions concerning disclosures, please contact the UICOM CME Office at 312-996-1621.

Glossary of Terms

Commercial Interest

The ACCME defines a "commercial interest" as any entity producing, marketing, re-selling, or distributing health care goods or services, consumed by, or used on, patients. The ACCME does not consider providers of clinical service directly to patients to be commercial interests. For more information, see www.accme.org.

Financial relationships

Financial relationships are those relationships in which the individual benefits by receiving a salary, royalty, intellectual property rights, consulting fee, honoraria, ownership interest (e.g., stocks, stock options or other ownership interest, excluding diversified mutual funds), or other financial benefit. Financial benefits are usually associated with roles such as employment, management position, independent contractor (including contracted research), consulting, speaking and teaching, membership on advisory committees or review panels, board membership, and other activities from which remuneration is received, or expected. ACCME considers relationships of the person involved in the CME activity to include financial relationships of a spouse or partner.

Relevant financial relationships

ACCME focuses on financial relationships with commercial interests in the 12-month period preceding the time that the individual is being asked to assume a role controlling content of the CME activity. ACCME has not set a minimal dollar amount for relationships to be significant. Inherent in any amount is the incentive to maintain or increase the value of the relationship. The ACCME defines "'relevant' financial relationships" as financial relationships in any amount occurring within the past 12 months that create a conflict of interest.

Conflict of Interest

Circumstances create a conflict of interest when an individual has an opportunity to affect CME content about products or services of a commercial interest with which he/she has a financial relationship.

Appendix S

Project's Budget and Cost

CME PROJECT BUDGET PLAN

NUMBER OF ATTENDEES	100
PROJECT EXPENSES	$4,015.00
TOTAL BUDGET	**$4,015.00**

Primary Category

Audio/Visu... | Communic... | Facility | Food Servi... | Giveaways | Miscellane... | Personnel

Primary Category	Secondary Category	Estimated Quantity	Estimated Cost per Unit	Estimated Subtotal	Notes
Personnel	Salary & Wages	2	$100.00	$200.00	Wages paid at $20/hr for staff to sign-in attendants and assist with managing the event
Personnel	Consultant Honoraria	5	$100.00	$500.00	A token of appreciation for the speakers and facilitators to be given in a form of a resturant gift card.
Communications	Advertising	300	$2.00	$600.00	Brochures
Communications	Mailings	300	$0.25	$75.00	Postage for mailing brochures
Communications	Photocopying	0	$0.00	$0.00	Printing of sign-in sheets, agenda, and CME evaluation will be done at PCCHD at no cost
Facility	Rental	2	$0.00	$0.00	Provided by CME provider
Food Services	Catering	120	$20.00	$2,400.00	Food & beverage for 120 people (60 persons each day)
Audio/Visual Services	Basic PA system and podium	1	$0.00	$0.00	Provided by venue (usually)
Audio/Visual Services	Screen	1	$0.00	$0.00	Provided by venue (usually)
Audio/Visual Services	Power strips	1	$0.00	$0.00	Provided by venue (usually)
Audio/Visual Services	Extension cords	1	$0.00	$0.00	Provided by venue (usually)
Audio/Visual Services	Lavalier microphone	1	$0.00	$0.00	Provided by venue (usually)
Giveaways	Giveaway #1	55	$2.00	$110.00	"Prescribe PrEP" pens, PCCHD has 55 on hand
Giveaways	Giveaway #2	110	$0.50	$55.00	Notepads
Miscellaneous	Other	1	$75.00	$75.00	Unexpected costs

Appendix S continued

CME PROJECT COST

NUMBER OF ATTENDEES	22
PROJECT BUDGET	$4,015.00
TOTAL COST	**$1,174.88**

Primary Category

Audio/Visu... | Communic... | Facility
Food Servi... | Giveaways | Personnel

Primary Category	Secondary Category	Quantity	Cost per Unit	Subtotal	Notes
Personnel	Salary & Wages	3	$0.00	$0.00	Personnel opted to volunteer their time
Personnel	Consultant Honoraria	2	$40.00	$80.00	Gifts bought for two of the three speakers. Three could not accept personal gifts. (*not grant funded, used personal funds)
Communications	Photocopying	0	$0.00	$0.00	Printing of sign-in sheets, agenda, and CME evaluation was done at PCCHD at no cost
Facility	Rental	2	$0.00	$0.00	Provided by CME provider
Food Services	Catering	60	$18.00	$1,080.00	Food & beverage for 60 people (30 persons each day)
Audio/Visual Services	Basic PA system and podium	1	$0.00	$0.00	Provided by venue (usually)
Audio/Visual Services	Screen	1	$0.00	$0.00	Provided by venue (usually)
Audio/Visual Services	Power strips	1	$0.00	$0.00	Provided by venue (usually)
Audio/Visual Services	Extension cords	1	$0.00	$0.00	Provided by venue (usually)
Audio/Visual Services	Lavalier microphone	1	$0.00	$0.00	Provided by venue (usually)
Giveaways	Giveaway #1	22	$0.00	$0.00	"Prescribe PrEP" pens, used inventory on hand
Giveaways	Giveaway #2	24	$0.62	$14.88	Notepads * not grant funded used personal funds