Initiating PrEP in Primary Care: Addressing the Adolescent and Young Adult High Risk Populations

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Initiating PrEP in Primary Care:
Addressing the Adolescent and Young Adult High Risk Populations

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Abstract

**Problem:** Adolescents and young adults (AYA) ages 13 to 24 comprise a quarter of the new HIV diagnoses in the United States. Lack of access to HIV-preventive therapies such as pre-exposure prophylaxis (PrEP) reduces opportunities to prevent HIV infection in this population. Initiating PrEP in AYA significantly reduces the negative health outcomes of HIV, but it is evident that many clinicians are still reluctant to initiate PrEP in AYA patients based on perceived threats and barriers.

**Context:** Primary care clinics, including school-based clinics, have an opportunity to offer HIV prevention services including PrEP. This project, the Adolescent and Young Adult Comprehensive PrEP Education Project (AYA ComPrEP) is an HIV-prevention quality improvement project that is directed towards providing AYA high-risk populations with access to PrEP in the primary care setting. The project was supposed to be completed at the Balboa Teen Clinic of Balboa High School, a clinic serviced by the Community Health Programs for Youth (CHPY) of the San Francisco Department of Public Health (SFDPH). Due to the COVID-19 pandemic shelter-in-place policy, the training for clinicians and staff, and roll out of PrEP service for adolescent clients of Balboa Teen Clinic was deferred to an unknown date. An online training and simulation for the University of San Francisco clinicians (nurse practitioner students) was conducted instead.

**Interventions:** A site feasibility analysis was conducted, which include consultations with CHPY leadership and management, site assessment, conduct of face-to-face in-depth interviews among staff of Balboa Teen Clinic, and review of literature and best practices to develop recommendations for a pilot PrEP program for AYA. Some interventions were modified to focus on increasing the confidence of providers, nurse practitioners students of the
University of San Francisco (USF) to prescribe PrEP to AYA. The focus of this DNP project was shifted to designing modules, conducting and evaluating of an online simulation, a PrEP training workshop for providers. The simulation include didactic, role play, case studies covering information, best practice recommendations on HIV and AIDS, HIV counseling, reproductive health, sexual orientation and gender identity initiative, and PrEP for AYA.

**Measures:** A pre-assessment and post-simulation evaluation was utilized to determine the change in providers’ knowledge, enabling attitudes, confidence, and readiness to offer HIV prevention services, and prescribe PrEP in preparation for their integration in clinics that they will be working. Case studies in the form of simulated patients to measure how they would apply the knowledge and confidence gained towards real life practice scenarios.

**Results:** Nineteen clinicians attended the online PrEP simulation training workshop. The data analysis revealed a 17.11% increase in HIV/AIDS & PrEP knowledge mean score (average scores: 76% for pre-simulation versus 89% for post-simulation) among participants. Likewise, HIV and PrEP enabling or non-stigmatizing attitude scores has increased by 18.3% (average scores: 71% for pre-simulation versus 84% for post-simulation). All the 19 clinicians revealed that their knowledge and confidence to prescribe PrEP to adolescents and young adults in their practice has increased as a result of attending the simulation (13 strongly agreed; 6 agreed) as compared to 2 clinicians prior to the simulation.

**Conclusions:** PrEP targeted for at-risk AYA is necessary to reduce HIV rates. This is possible by breaking barriers to PrEP prescription through education and training of clinicians. PrEP should be included in the training and preparation of clinicians to address the adolescent and young adult populations. Online simulation training workshop for PrEP is an effective alternative means if face-to-face training is not possible.
Section II—Introduction

Background and Problem Description

Human immunodeficiency virus (HIV) infection has claimed millions of lives across the world (UNAIDS, 2019). The Joint United Nations Program on HIV & AIDS (UNAIDS) and the World Health Organization (WHO) estimates that 36.9 million people worldwide were living with HIV in 2017 (UNAIDS, 2019). In the United States in 2017, the Centers for Disease Control and Prevention (CDC) reported 38,739 new HIV diagnoses, with an estimate of 1,100,000 people of all ages currently living with HIV in the U.S. (CDC, 2018). Around 15% (one out of seven) people living with HIV in the country are not aware that they are infected (CDC, 2018). More than half of the new HIV infections were from the southern part of the country. The annual rate of new HIV diagnoses in the U.S. has decreased compared to a decade ago, but for the last several years (2012-2016) has remained stable rather than decreasing. The CDC has indicated that this is due to inadequate outreach to those who could most benefit, primarily disproportionately affected populations in the south such as African Americans and Latinos/Hispanics (CDC, 2018).

Adolescents and young adults aged 13 to 24 represent approximately 15% of the U.S. population according to U.S. Census Bureau (2017). In 2015, at least 22% of new HIV diagnoses in the U.S. were among adolescents and young adults (AYA) between the ages of 13 and 24 (CDC, 2018). Men having sex with men (MSM) constituted the gender group with the most substantial number of new HIV infections (81%) among young people. Lack of access to PrEP prophylaxis reduces the opportunity to prevent HIV infection in this population (Hosek et al., 2016). Approximately half of AYA, particularly adolescents and young men having sex with men (AYMSM), have poor health outcomes with low retention in care, and low viral-load
suppression (CDC, 2018). Acquiring HIV at a young age means lifelong management of chronic HIV infection. This has economic and psychosocial implications for every individual infected by HIV, for society, and for public health practice worldwide. The lifetime cost per patient for HIV care in 2018 in the U.S. was $485,000 (CDC, 2020).

HIV is a virus that weakens the immune system by destroying certain types of white blood cells called CD4-T cells (also known as CD4 cells). These lymphocytes help to coordinate an immune response by invoking B cells (which produce antibodies), as well as macrophages, and other types of T cells that also fight infection (U.S. HHS, 2019). The virus is spread through certain body fluids including semen, vaginal fluids, blood, and breast milk. When HIV enters the body, it takes three weeks to three months for the body to develop HIV antibodies that can be detected through an HIV antibody test (HAT). It takes around 3-4 weeks for a newly infected person to seroconvert from HIV negative to HIV positive, a condition which the person may or may not experience an acute viral illness. When a person is infected with HIV, the virus destroys CD4 cells, reducing them to low levels, inhibiting immune protection, and increasing viral load levels. As a result, the infected person is more susceptible to opportunistic infections such as tuberculosis, toxoplasmosis, pneumonia and certain types of cancers such as Kaposi’s sarcoma (CDC, 2018). HIV infection is primarily spread through anal and vaginal sex, as well as shared needles or syringes, a common practice among people who inject drugs (CDC, 2018). Other modes of transmission such as mother-to-child and needle stick injury are less common in the U.S., and while there is a risk, it is extremely rare cases to contract HIV through oral sex or blood transfusion (CDC, 2018). Improved health care, including access to HIV services, harm reduction programs such as needle exchange services, and PrEP play a role in the reduction of HIV transmission in western countries including the U.S. (CDC, 2018).
In the three decades since the first wave of the epidemic, various interventions have emerged to improve strategies for preventing HIV, including the use of pharmaceuticals for pre-exposure prophylaxis (PrEP). Among adolescents, HIV infections still continue at a high rate (CDC, 2018) despite increased programs targeting key populations through HIV education and the availability of preventive medications (PrEP), as well as post-exposure prophylaxis (PEP) and other effective antiviral treatment for people living with HIV.

What is PrEP?

Pre-exposure prophylaxis (PrEP) for HIV includes medications and other delivery devices that prevent HIV transmission. Currently, Truvada™ and Descovy™ are the only two pharmaceutical interventions in oral form that shown in clinical trials to prevent HIV transmission that has approval by the FDA (CDC, 2019). Other methods of PrEP include other delivery devices such as injections, implants, and vaginal rings. They are still under clinical trials. This medication, Truvada™, is a combination tenofovir disoproxil fumarate (TDF) and emtricitabine (FTC). These drugs have been used effectively to manage HIV infection since 1996 and are known for their safety profile together and in combination with other forms of anti-retroviral drugs (e.g. efavirenz) as treatment for HIV infection. In 2012, Truvada™ was found through clinical trials to be more than 90% effective in preventing sexual transmission of HIV among high-risk HIV-negative populations such as men who have sex with men, and 70% effective for those who inject drugs. PrEP is relatively safe and the CDC (2019) reports that no significant side effects have been seen in HIV-negative persons who have been taking PrEP for up to 5 years. However, potentially serious side effects of Truvada that warrant monitoring include kidney problems, lactic acidosis, severe liver problems, and bone loss (Gilead Sciences, 2019). It is recommended that HIV-negative persons be tested for kidney and liver function and
that healthcare providers rule out hepatitis infection and bone problems before prescribing continuous Truvada.

PrEP as a pharmacologic intervention, became available for adult men who have sex with men (MSM) was initiated in July 2012 when the U.S. Federal Drug Administration (FDA) approved Truvada® taken once daily to prevent the sexual transmission of HIV. Though the U.S. is the first country to implement PrEP, data reveals that from 2012 to 2015, a meager percentage of PrEP prescriptions (7.6%) were provided for youth under the age of 25 (Bush et al., 2016). Limited clinician knowledge and comfort in the use of PrEP, along with the absence of FDA indications for PrEP use in this population prior to 2018 have contributed to the low rate of new PrEP prescriptions in young people (Hosek et al., 2016). Likewise, some providers lack awareness of statutes allowing treatment of adolescents for sexually transmitted infections (STI) prevention without parental notifications, and limited adolescence-focused healthcare services reduce the use of PrEP among this group.

The patent for Truvada expired in December 2017 and other countries have ruled against the extension of patency rights of Truvada, making it available for overseas pharmaceutical companies to create generic versions of Truvada (TDF/FTC) to be used as pre-exposure prophylaxis. This reduces the cost of Truvada to approximately $10 per bottle in countries such as Australia, significantly lower than the cost in the U.S., where the medication has been priced at $2,000 per bottle. Currently, the original manufacturer, Gilead has a program to waive co-pays to those who are taking anti-retroviral medications both for non-positive patients (PrEP) and those living with HIV (in treatment).

**New PrEP Formulation.** In October 2019, the FDA approved a safer version of tenofovir, the tenofovir alafenamide or TAF in combination with emtricitabine or FTC known as
Descovy™ for cisgender males (men who have sex with men and transgender women). It is found to be equally effective to Truvada but less toxic and has fewer side effects, particularly in kidney functions and bone demineralization (Krakower, Daskalakis, Feinberg, Marcus, 2020). The result from the study of 5,300 cisgender men who have sex with men and transgender women in North America and Europe revealed that HIV pre-exposure prophylaxis regimen utilizing Descovy™ was found to be superior to the traditional regimen with Truvada™ with more than 90% effectiveness (Schoen, J., 2019).

**Alternative PrEP Dosing.** Daily adherence to PrEP remains a challenge to some patients and consequently to providers. PrEP providers face issues prescribing PrEP and at the same time ensuring adherence and avoiding viral resistance to Truvada. In other parts of the world such as France, the UK, Canada, and Australia, alternative dosing to daily PrEP is available. Some of the alternative PrEP dosing evaluated in various studies (Appendix A) across the world includes on-demand PrEP, event-driven PrEP, time-driven PrEP, and intermittent PrEP. While this may not yet be widely practiced in the United States and is limited to studies, alternative PrEP dosing may become more available in later years. In a Kenyan study, Mutua et al (2012) suggested that adherence to intermittent dosing may be more difficult than adherence to daily dosing, but still may be effective in preventing HIV infection if minimum effective concentrations of the drug are attained. In the latest Paris study of Molina et al (2018), intermittent dosing has shown similar, successful profiles in comparison with daily dosing. The Prevenir ANRS study in Paris has high retention rates with good safety profiles for both intermittent and daily PrEP groups (Molina et al., 2018). Alternative dosing of PrEP has the potential to minimize costs, decrease toxicity or adverse events, improve adherence, and increase HIV prevention in populations with alternative
lifestyles such as those working in the sex trade, recreational drug users, and the homeless (Volk et al., 2012).

It is important that clinicians are up to date with new information, research, and practices provided by the guidelines. Insight into maintaining effectiveness of HIV prevention using a daily dosing regimen of PrEP or alternative dosing will facilitate understanding of what constitutes a safe and acceptable PrEP intake. This could lead to change and stronger policies and protocols that support alternative dosing of Truvada, particularly in settings with limited resources and in populations for whom daily PrEP pill intake remains an issue.

**Clinical Practice Guidelines on PrEP**

The CDC released the first interim guidance for the use of preventive medication (PrEP), in 2012, in sexually active adult MSM who are at substantial risk of acquiring HIV infection (CDC, 2014). The risk for HIV is based on patterns of anal sex, use of condoms, multiple partners, monogamous relationships, HIV status of a partner, and positive diagnosis of sexually transmitted infection (CDC). In May 2014, the United States Public Health Service released the first clinical practice guidelines for daily oral pre-exposure prophylaxis (PrEP) (CDC). This was updated in 2016 and 2017, which included revisions to several sections of the guidelines. The latest 2017 updates did not change the recommendation for the use of PrEP in the U.S; rather it included a call for the development of evidence-based studies and clarification on specific points in clinical care (CDC, 2018). For example, a preference for antigen/antibody testing whenever available, rather than antibody-only tests, is now recommended. Also, the use of a 3,000 copies/mL cut-off for suspected false-positive viral load tests was set (CDC, 2018). The CDC (2018) added information on hepatitis C screening in relation to PrEP to be consistent with the
guidance of the 2017 American Association for the Study of Liver Diseases (AASLD) and the Infectious Disease Society of America (IDSA).

The current CDC guidelines for men who have sex with men (MSM) were found to reduce the incidence and prevalence of HIV infection in the U.S. Projecting the data forward, based on the study by Jennesse et al. (2016), a 40% coverage of PrEP for MSM in the U.S. could potentially prevent 1,162 new infections per 100,000 persons (33% of infections). In the study of Goodreau et al. (2017), initiating PrEP for adolescent sexual minority males six months after their first anal sex at 40% coverage among this group is projected to prevent 27.8% of HIV infections. Despite the effectiveness of PrEP in preventing the transmission of HIV, the U.S. registers low utilization of Truvada (CDC, 2018). Local health departments and public health clinics across the U.S. were the main source of prescriptions for Truvada, however, PrEP implementation remains at very low rates (Weiss, Smith, Newman, Wiener, Kitlas, Hoover, 2018).

Low utilization or the lack of taking Truvada for those who are at risk is seen by those who are significantly impacted by recent HIV infections, African Americans and Latinos, the populations that account for the highest proportions of new HIV infections in the U.S (CDC, 2019). Despite accounting for 13% of the total population in the U.S., African Americans had a 43% (16,694) of the 38,739 new HIV diagnoses in 2017 (CDC). The majority (60%) of the new infections among African Americans were gay and bisexual men, while a quarter (26%) were among women. Yet of the 78,360 persons who filled prescriptions for Truvada™ in the U.S. in 2016, only 11.2% were African American while and only 13.1% were Hispanic, compared to 68.7% white. Although there was a 5% decrease in new HIV infections in African Americans
from 2010 to 2016 among gay and bisexual men ages 13-24, there was an increase of 40% in new HIV infections among African Americans ages 25-34 (CDC, 2019).

**Problem Description**

**PrEP in San Francisco**

The San Francisco Department of Public Health first implemented a PrEP program in 2012, when Truvada™ was approved as an HIV-prevention pill. Young people in San Francisco have had access to PrEP since 2016, as an off-label medication through the clinics of the Community Health Programs for Youth (CHPY). Cole Street Clinic and Larkin Street Clinic, two CHPY facilities, have been providing PrEP as an off-label prescription to its most-at-risk AYA patients based on the judgment of the clinician and the circumstances of the patients. Factors in prescribing PrEP typically include insurance coverage for Truvada and ease of PrEP delivery, but not necessarily the emerging risks of the patient. As of 2018, in a landmark achievement, the FDA increased access to PrEP for patients under age 18. This new guideline aims to provide opportunities for clinicians to prescribe PrEP for at risk AYA (CDC 2014).

**HIV Prevalence in San Francisco**

In San Francisco, aggressive collective efforts are paying off with record-low number of new HIV cases. The SFDPH is a major partaker in the ‘Getting to Zero’ initiative of the World Health Organization and the United Nations and will benefit from this project. This ambitious initiative aims to achieve zero new HIV infections, zero HIV deaths, and zero HIV-related stigma by 2020. It is San Francisco’s vision to reduce HIV transmission and HIV-related deaths by 90% in 2020 as part of this initiative. The City and County of San Francisco have been performing well in recent years to meet the target, outpacing national efforts to reduce HIV
infection with only about 221 reported cases in 2017, reported by SFDPH Population Health Division (2018). This was achieved by providing access to HIV medications for people living with HIV and PrEP for high-risk persons. The latest 2017 HIV data records the lowest number of new HIV cases for San Francisco since the HIV epidemic in the 1980s (SFDPH Population Health Division, 2018). The face of San Francisco’s HIV epidemic reflects more Caucasian whites in higher numbers as compared to African Americans and Latinos, which is reflective of the national epidemic.

**Risk Among Youth and Young Adults.** Since 2014, San Francisco public health efforts have been directed toward reducing HIV transmission among young people who are most at risk (SFDPH Population Health Division, 2018). In 2017, of the 221 new HIV infections in San Francisco, more than 60% are younger than 40 years old (SFDPH Population Health Division, 2018). Over 100 of the people living with HIV who reside in the city are ages 13-24 as of December 2017 (SFDPH Population Health Division, 2018).

**HIV in the African American Community.** Despite low numbers of new HIV infections within San Francisco, the annual rate of new HIV shows an increase among African Americans in 2017, with African American men reaching triple times higher rates of HIV than of white men. Rates were also eight times higher for African American women than Caucasian women (SFDPH Population Health Division, 2018). Public health efforts to engage African American men in prevention programs hopes to curb these increases and bring rates to a lower level in this group.

**Needs within the Homeless Population.** While PrEP and HIV treatment for people living with HIV in San Francisco is available, there is the need for better services and outreach programs for homeless people; many are adolescents and young adults. Currently, less than a
third of homeless people living with HIV are virally suppressed (SFDPH Population Health Division). Issues of safe storage of medications and mental health or substance abuse disorders that affect treatment play a role in reaching the city goal for zero new HIV infection by 2020 (SFDPH Population Health Division). Our best opportunity at this time is to make PrEP accessible to everyone, with emphasis on the needs of vulnerable populations, which include young people, African Americans, Hispanic, and the homeless.

Adolescent and Young Adult Access to PrEP in San Francisco

The Community Health Programs for Youth (CHPY) is part of the San Francisco Health Network (SFHN) in the San Francisco Department of Public Health (SFDPH). Comprised of more than eight major and satellite specialty clinics across San Francisco, CHPY provides comprehensive clinical services for adolescents and young adults (AYA) age 12-25, including those who are transgender and homeless (SFHN, 2018).

An estimated 15,952 are people living with HIV in San Francisco with 221 new cases in 2017. Around 11% of new HIV infections in 2017 occurred in ages 13-24, with 18% in ages 25-29 years old, and 33% in ages 30-39 years old (SFDPH Population Health Division, 2018). CHPY provides medical services to young people living with HIV in the city, particularly the homeless, through its Larkin Street Clinic and Cole Street Clinic. CHPY works in partnership with the Larkin Youth Services to give medical care through its ACAC (Assisted Care-After Care Program) HIV Specialty Clinic to young people living with HIV, housed in a residential program facility on Hyde Street.

Currently, there is no standard assessment template in the electronic record that CHPY clinicians can use to do risk assessment and identify PrEP candidates. Sexual history and other risk behavior assessments are being performed inconsistently based on the observation of this
Enrollment in PrEP is merely based on the clinician’s individual judgment or preference or at the patient’s request (although we know from the literature that a significant percentage of young people are unaware of the availability of PrEP). There is a significant need to make PrEP available to more at-risk AYA patients of CHPY utilizing a standardized approach. Assessment of the perceived roles of CHPY nurses in PrEP education for youth is also needed to understand the challenges of PrEP delivery and to improve clinical and nursing practices with regard to PrEP.

The adolescent group at CHPY is a diverse population. Some adolescents are men having sex with men, others are sexually active transgender, or adolescents who engage in sex work and/or drug use. The complexity of this age group for PrEP delivery is worth understanding. Protocols should exist to inform primary care providers and to support these at-risk populations in navigating the healthcare system to better address their HIV prevention needs. Adoption of the CDC guidelines for AYA MSM (Goodreau et al., 2017) could reduce the high rate of HIV infections in this age group. Based on the consultations and interviews, not all staff and primary care team members at CHPY are aware of the updated CDC PrEP guidelines and protocol. The current CDC guidelines could be adopted and modified to address the relevance of PrEP for at-risk adolescents, highlighting the role of clinicians and other members of the healthcare team, including nurse practitioners and nurses.

Available Knowledge: Barriers to PrEP as a Preventive Service for AYA

Literature Search. A comprehensive literature search on barriers to PrEP utilization was performed using CINAHL Complete, PubMed, Fusion, EBSCO, and Cochrane with the date range January 1, 2012, to June 1, 2019. The author chose these dates because Truvada® and the PrEP intervention protocol became available in 2012. The initial search using the terms
“nursing” and “HIV prevention” yielded around 145 articles. Further inclusion criteria provided access to studies in the biomedical sciences on preventing HIV. The author applied the following search terms across all databases: PrEP, pre-exposure prophylaxis, barriers, adolescents, nursing, and clinicians, which yielded approximately 65 published papers. Barriers were classified as either prescriber-associated barriers, or AYA patient-associated barriers. Although only U.S. studies were included in the review, studies from other countries and those involving different age groups were used as a basis of reference to verify the findings of this evaluation.

**Evaluation of the Evidence.** Nine articles met the inclusion criteria and were selected for final review. The evidence was rated using the John Hopkins Nursing Evidence-Based Practice Appraisal Tool. The table in the Appendix B present the evidence assessed in this review, categorized according to provider-associated and patient-associated barriers in AYA PrEP use. All of the examined evidence provided explicit aims, findings on barriers to AYA PrEP use, and recommendations for application in clinical practice and for future research. Due to the limited number of studies available specifically on barriers to AYA PrEP use, the author included articles with both high quality (Rating A) as well as those of with good quality (Rating B). The appraisal rating of B was given to study results that do not appear to be generalizable, due to the small sample size or other limitations (Refer to Appendix B).

The articles on PrEP services that were selected for review included four studies emphasizing the attitudes of PrEP prescribers (i.e. physicians or nurse practitioners). Despite the small sample size of the clinician studies, they provide an in-depth understanding of providers’ viewpoint, intentions, practices, and response to the CDC PrEP guidelines.

**Clinician Barriers to PrEP as Preventive Service for AYA**
PrEP IN ADOLESCENTS AND YOUNG ADULTS

Drawing on research experience and data, recommendations for the modification of existing PrEP guidelines can be developed to benefit adolescents and young adults at risk of HIV infection. Tables in the Appendix A provide a synopsis on barriers to PrEP use in adolescents and young adults, categorized according to 1) provider-associated barriers in AYA PrEP use and; 2) AYA patient-associated barriers. Studies involving clinicians included a total of 233 providers who had experience with medications used for PrEP. Mullins et al looked at the attitudes of clinicians toward the CDC PrEP guidelines (Mullins, Lally, Zimet, & Kahn, 2015), attitudes of providers towards PrEP (Mullins, Zimet, Lally, & Kahn, 2016), the relationship between intention to prescribe PrEP and actual prescription (Mullins, Zimet, Lally, Xu, Thornton et al, 2017), and youth access to PrEP in relation to providers willingness to prescribe PrEP to youth (Hart-Cooper, Allen, Erwin, & Scott, 2018).

Clinicians’ attitudes toward AYA using PrEP. Study findings reveal that clinicians reported greater intention to prescribe PrEP to adults as compared with adolescents (Mullins et al, 2015). Providers faced challenges in prescribing PrEP to AYA, particularly those below 18 years of age, due to lack of clarity that PrEP falls under protected confidential care for adolescents, which does not require parental consent (Mullins et al, 2016). Concern about maintaining confidentiality and involvement of parents of AYA is common among providers. The majority of clinicians are not concerned about the off-label use of PrEP for those below 18. However, clinicians have differing views about adolescence patients’ ability to understand PrEP benefits and risks and give true informed consent (Mullins et al). Issues on maintaining confidentiality and parental involvement were common among providers. A significant number of providers expressed a lack of clarity that PrEP falls under protected confidential care for adolescents, which does not require parental consent (Mullins et al, 2016).
Providers are concerned about patient adherence to the PrEP daily medication schedule, attendance at monitoring visits, the development of viral resistance due to incomplete adherence, participation in behavioral interventions such as counseling or group work, side effects of the medication, toxicity (e.g. effects on bone density and renal function), and financial difficulties (Mullins et al, 2015). These concerns were identified as common barriers to PrEP prescription. Perceived high cost of insurance was associated with reduced intention to prescribe PrEP to AYA (Mullins et al, 2016). There is also a concern about risk compensation: the possibility that patients might participate in riskier behaviors since they felt protected from HIV infection because they utilize PrEP (Mullins et al, 2016). Some prescribers are concerned about negative publicity and the negative attitudes of colleagues toward PrEP, particularly in prescribing PrEP to patients who are below 18 years of age (Mullins et al).

**Willingness to Prescribe PrEP.** The CDC guidelines recommend PrEP for those who have ongoing high risk of HIV acquisition and are able to metabolize prophylactic medications, (indicated by a creatinine clearance greater than or equal to 60 mL per minute) (CDC, 2012). Women at high risk for HIV are considered appropriate for the drug if they are not breastfeeding. Those who are at high risk such as men having sex with men (MSM), having multiple sex partners, or not using condoms are good candidates for PrEP. Clinicians in general were aware of the CDC interim guidelines on PrEP; however, some practices diverged from the guidelines, and clinicians attempted to construct their own operational definition of who qualify for PrEP based on the patients that they encounter in their practice (Mullins et al, 2015).

Mullins et al (2015), found that almost all clinicians (80%) were willing to prescribe PrEP for those who are long-term partners of persons living with HIV. Among clinicians, at least 60% were also willing to prescribe PrEP for those engaged as sex workers. Of the 162 providers
across the U.S. who participated in the study willingness to prescribe PrEP was strongly associated with the belief that providers had enough knowledge to safely provide PrEP to adolescents and young adults (Hart-Cooper, et al, 2018). Although almost all providers agreed that PrEP prevents HIV, not all were willing to prescribe PrEP to young adults (77.8%) and even fewer willing to prescribe to adolescents (64.8%). A history of prescribing non-occupational post-exposure prophylaxis (nPEP) was associated with actual prescription of PrEP (Mullins et al, 2017). Post-exposure prophylaxis is HIV preventive medication given within 72 hours after HIV exposure such as sexual contact.

Clinicians felt that engaging in unsafe sexual behaviors (MSM, transgender, and high-risk heterosexuals) does not automatically warrant PrEP prescription, although these factors do trigger an assessment for PrEP. Providers described characteristics of people who would not be appropriate for PrEP, including those with: 1) the presence of a mental health diagnosis, and/or 2) substance abuse issues (Mullins et al, 2017). These presentations are also perceived as indicators of a person engaging in higher risk sexual behavior, but with major issues likely to negatively impact adherence to PrEP.

**Barriers in Adolescents and Young Adults to PrEP Preventive Services**

A summary of the barriers to AYA PrEP use from the AYA patient perspective is demonstrated in Table 2 (Appendix B). The five studies included in the review looked at the awareness of PrEP among AYA, their attitudes toward PrEP, social behavioral influences, likelihood to participate in a PrEP adherence study, willingness to take PrEP, safety and implementation issues, and adherence. More than 500 participants were included in these studies, which include AYMSM, and transgender male and female adolescents.
Lack of PrEP awareness. In a study of male adolescents and young males who have sex with men by Perez-Figueroa et al (2015) revealed that approximately 50% have an awareness of PrEP. Some compared taking PrEP to taking birth control (a form of medication that prevents an unwanted outcome with just a pill a day). For others, the consistency required by a PrEP regimen could be problematic. Consequently, despite of the awareness of PrEP, study participants expressed hesitation about PrEP use. AYMSM desired more information about PrEP including side effects, various types of drug regimens, active ingredients in the medications, and the odds of contracting HIV while on PrEP (Perez-Figueroa et al). In transgender male and female AYA, half of the study respondents indicated they would probably participate in a PrEP adherence study (Fisher et al, 2017). In the study of Holloway et al (2017), the willingness to take PrEP among AYMSM is significantly associated with the time since their last HIV test, their level of concern about becoming infected with HIV, recent receptive condomless anal sex, the use of illicit drugs in the past six months, and their HIV risk index score.

Negative attitudes toward PrEP. For some AYMSM, PrEP is one of several strategies to protect themselves from acquiring HIV other than condoms. However, they viewed taking daily medication as harder to remember than using condoms (Perez-Figueroa et al, 2015). In a transgender study (Fisher et al, 2017), a quarter (23%) did not want to add another medication to their health regime. Regardless of age and gender, about half of participants were extremely worried about the negative side effects of PrEP. One-third were concerned about getting to quarterly appointments (Fisher et al). Likewise, increased medical mistrust was associated with decreased willingness to take PrEP among AYMSM (Holloway et al, 2017). However, not all adolescents and young males who have sex with men are concern about getting HIV. YMSM less concerned about the risk of getting HIV were twice as unlikely to be willing to take PrEP as
compared to YMSM who had medium or high concern of acquiring the infection (Holloway et al).

**Economics.** Taking PrEP medications entails financial burden, particularly for those who have no insurance or have no access to PrEP subsidy programs. Young men of color often voiced concerns about the cost of PrEP (Holloway et al, 2017).

**Adherence and retention.** For some, the consistency required by a PrEP regimen could be problematic. They viewed taking daily medication as harder to remember than using condoms (Perez-Figueroa et al, 2015). One-third were concerned about getting to quarterly appointments (Fisher et al). Adherence to PrEP is viewed by AYMSM as difficult in the long term. AYA were concerned about missing pills, developing resistance to PrEP, and contracting HIV, as well as side effects (Perez-Figueroa et al, 2015). Greater concern about adherence was associated with decreased willingness to take PrEP in AYMSM (Holloway et al, 2017). In a measure of adherence study among youth in PrEP by Koss et al (2018), adherence to PrEP use waned over time in AYA, particularly after week 12. Self-reporting in a PrEP protocol overestimates actual adherence by young people (Koss et al). The most common reasons for missing doses of PrEP were: 1) being away from home; 2) being too busy; 3) forgetting; and 4) changes in routine (Hosek et al, 2017).

**The stigma of PrEP.** In general, stigma towards HIV is a barrier to HIV prevention and PrEP is not an exception. Some AYMSM viewed PrEP negatively as a preventive strategy for those who engage in high-risk sexual behaviors or more frequent casual encounters (Perez-Figueroa et al, 2015). Use of PrEP was viewed as a trust and fidelity issue, i.e. taking PrEP could mean the likelihood that the individual will have sex outside the primary relationship (Perez-Figueroa et al, 2015). However, some reasoned that if their partners were having sex outside of
the relationship, PrEP could serve as a protection (Perez-Figueroa et al). Holloway et al (2017) reveals that YMSM who were unwilling to take PrEP had concerns about stigma, in addition to questions about drug effects, risk compensation, medical mistrust, adherence, access, and affordability. Increased medical mistrust was associated with decreased willingness to take PrEP in AYMSM (Holloway et al, 2017). Other participants questioned the necessity of taking PrEP.

**Other barriers.** Not all adolescents and young males who have sex with men show concern about getting HIV. YMSM less concerned about the risk of getting HIV were twice as unlikely to be willing to take PrEP as compared to YMSM who had medium or high concern that they might acquiring the infection (Holloway et al, 2017). Other participants questioned the necessity of taking PrEP. The willingness to take PrEP among AYMSM is significantly associated with the time since their last HIV test, their level of concern about becoming infected with HIV, recent receptive condomless anal sex, the use of illicit drugs in the past six months, and their HIV risk index score Holloway et al, 2017).

**Rationale**

The focus of this project was preventative health services, specifically in community and public health organizations targeting underserved populations. Creating an adolescent-friendly primary care environment that makes PrEP available to adolescents and young adults at risk can reduce barriers to effective HIV prevention. The goal is to minimize, if not eliminate, new HIV infections in this cohort in San Francisco through a comprehensive educational package of PrEP and HIV prevention.

Working with the Community Health Programs for Youth in the SFDPH, the AYA ComPrEP was designed to create a PrEP program for Balboa Teen Clinic by enhancing and standardizing CHPY’s PrEP provision practices, existing PrEP guidelines, and
adopting them for Balboa. To support clinician services, the project includes a needs assessment and training workshop on recent HIV research and guidelines, the development of an HIV-risk screening tool, templates for the electronic health record (EHR), and PrEP management protocol, as well as web-based and hard copy resources for providers and staff. The objective was to conduct an education and training session to increase confidence for medication prescription and counseling for PrEP/HIV in clinicians and staff to increase PrEP utilization and uptake in the appropriate at risk patients.

**Conceptual Framework**

Two models, one the Diffusion of Innovation theory and the other, Awareness Adherence model, were applied to increase PrEP initiation and prescription at CHPY. The theory of diffusion of innovation by Everett Rogers originated in the field of communication to explain how an idea or product gains momentum and diffuses through a specific population or social system (Kaminski, 2011). The Awareness to Adherence Model (AAM) also focuses on change, positing that any shift in mindset is dependent on the following steps: awareness, agreement, adoption, and adherence (Freed, Pathman, Konrad, Freeman, & Clark, 1998).

These two models, when applied to the AYA ComPrEP Project, represented various processes that aided in implementing this protocol. The awareness adherence model was useful in identifying ways to improve clinicians and staff members’ adherence to PrEP guidelines by demonstrating where clinicians and staff fell off the path to adherence, and when they were at greatest risk for not attaining each step in the clinical protocols. An initial gap assessment looked at factors associated with a greater likelihood of attaining the steps
toward guideline adherence. The adherence model was also used to describe how the AYA ComPrEP would increase awareness of PrEP clinical practice guidelines through education and training for clinicians. Training reviewed HIV-risk identification and the specifics of the HIV-risk screening protocol. Understanding the rationale and benefits of making robust PrEP services available to adolescents and young adults, clinicians and staff would more likely to follow the new HIV-risk screening protocol. Over time, the goal was that this program, AYA ComPrEP, would be disseminated among clinicians, staff members and its patients (adolescent and young adults) until a saturation point is reached, and the majority of staff and patients adopted the new practice as status quo.

One of the goals of AYA ComPrEP was to provide effective, standardized services and then document what was most successful in this model so it could be scaled and applied in other communities, initially in the San Francisco Bay Area. The AYA ComPrEP would be a well-timed initiative if State of California funding is secured for PrEP provision.

**Specific Aims**

The overall goal of the AYA ComPrEP Project was to improve HIV prevention in adolescents and young adults (AYA) by preparing clinicians and/or clinic staff to confidently provide PrEP services to this populations (Appendix C). The interventions were designed to increase clinician and clinic staff identification of AYA with substantial HIV risk and create an education platform on PrEP targeting the needs of AYA. Specifically, it was projected that by April 2020, clinicians and clinic staff who participated in the training workshops would have increased knowledge and comfort to prescribe PrEP demonstrated by at least 80% of the clinicians with increased knowledge score in post-
training and verbalization of comfort and readiness to provide PrEP and HIV preventions services to at-risk adolescents and young adults.

**Stakeholders**

Stakeholders for the AYA ComPrEP Project included the leadership, providers, staff, and patients of CHPY, their partner agencies including non-government organizations, and other clinicians and primary care providers and staff who maybe interested about PrEP services for AYA. The partner agency of Balboa Teen Clinic includes the Balboa High School of the San Francisco Unified School District (SFUSD), which the clinic is located. A complete list of CHPY clinics is shown in Appendix D. Through partnership and collaboration, CHPY is tasked to take the lead in providing HIV prevention services for AYA in San Francisco and contribute to the achievement of the SFDPH’s mission in the ‘Getting to Zero’ initiative. Other stakeholders are the public health and local health clinics, as well as public and private organizations working for the health of adolescents and young adults. Pharmaceutical companies, particularly Gilead (the maker of Truvada™ and Descovy™), may also be interested in this project, since they have a history of support for projects related to PrEP.
Section III--Methods

Gap Analysis & Needs Assessment Results

Upon consultation with CHPY leadership, the author received permission to conduct this project at CHPY (Appendix E). After the development of the project proposal, the author performed a gap analysis by observing clinical practice, reviewing existing clinical data on PrEP, and staff interviews. Within San Francisco, PrEP is currently offered in two clinics of CHPY: 1) Cole Street Clinic, and 2) Larkin Street Clinic. It is not offered at Balboa Teen Health Center where the project was implemented. Based on clinical observations at both Cole and Larkin, standardization for HIV prevention is lacking, particularly in the identification of at-risk PrEP candidates. Based on an initial review of the CHPY intake form in the electronic health record and staff interviews, it appears that there are currently no patient inquiries related to PrEP use or PrEP prescription during initial intake.

While the STI screening template is available in the electronic health record (e.g. a series of screening questions asking for the number of sexual partners of patients, use of condoms, and STI symptoms), there is no standardized template that specifically prompts clinicians to analyze HIV risk and initiate PrEP counseling or intervention. To increase PrEP prescription, a standard assessment template is needed in the electronic record that CHPY clinicians use to do risk assessment and identify PrEP candidates. Sexual history and other risk behavior assessments are also being performed inconsistently. Currently, initiation and prescription of PrEP is merely based on the clinician’s individual judgment or preference, or whether the patient requests PrEP. There are times when clinicians feel so uncertain of the guidelines and policy they call other clinicians assigned at other clinics to consult on whether to prescribe PrEP. This is a time-
consuming process that can be avoided if training for clinicians and staff is regularly done, and more standardized screening tools, templates, and protocol are implemented.

While data on PrEP prescriptions at CHPY clinics was generated through the electronic health record and followed by the SFDPH PrEP monitoring group, the majority of clinic staff and providers at CHPY have not seen the specific research findings and data on PrEP reduction of HIV infection. There is also the need for clinic staff to understand the data and analyses of PrEP prescription at CHPY to track and improve its clinical practices on HIV prevention for AYA. It is estimated by CHPY that of all its patients who are started on PrEP, around 30% of them discontinue taking PrEP without follow-up. Based on chart reviews of some CHPY patients, not all patients who tested for sexually transmitted infections such as gonorrhea and chlamydia are screened for PrEP, particularly heterosexual AYA patients. A significant gap exists between the number of at-risk patients who qualify for PrEP and the number of these patients who were actually offered PrEP. The initial gap assessment revealed lack of continuation of PrEP after implementation, lack of follow-up for those who discontinued PrEP, and in specific cases, conversion of adolescents to HIV positive.

Upon consultations with CHPY Leadership and PrEP Champion, it was decided that rolling out PrEP at the 3rd biggest clinic of CHPY, The Balboa Teen Clinic, would be more beneficial for CHPY and the adolescents of San Francisco who may benefit from PrEP. A needs assessment through in-depth interviews was suggested and carried out. Tools such as the Project Information for In-Depth Interview Participant (Appendix F) and the In-Depth Interview Questionnaire (Appendix G) were developed for the needs assessment.

According to the results of in-depth interviews (Appendix H) and gap analysis, it was determined that CHPY would benefit from the implementation of the AYA ComPrEP Project,
which focused on education or training of clinicians and staff on PrEP. In-deep interviews among nine staff of the Balboa Teen Center were conducted from December 12, 2019 to January 30, 2020. The result of the in-depth interviews revealed the following themes or issues related to making PrEP services available in the clinic:

1. All participants want to have PrEP services available at Balboa Teen Health Center. Everyone is excited about it. The thought that this will be the first school-based PrEP in California (one of the firsts in the United States and countries in the world) excites the team;

2. Each team member has a role to take in this initiative. There is a need to clarify or communicate roles. Everyone is willing to participate;

3. Staff members need education, training, and workshop both for first timer and as a refresher for those who had a PrEP training previously before seeing patients in the clinic for PrEP outreach, education/counseling and PrEP prescription;

4. Clinic members voiced the need for materials on PrEP, including presentation materials about PrEP for AYA for teachers, staff, students, and patients.

5. All interviewees pointed that the clinic need good outreach and dissemination strategies to reach communities and potential patients of PrEP services in Balboa.

GAANT

The AYA ComPrEP Project implementation took place from September 2019 to April 2020 (Appendix I). Since 2018, the author had planned the project with DNP Chair, Dr. Prabjot Sandhu and DNP committee member Dr. Stefan Rowniak. Approval for the project with the CHPY leadership: Dr. Lori Kohler (Medical Director), Carol Tanuguchi, NP (Clinical Nurse Lead), and Adam Leonard, NP (PrEP Champion at CHPY) was given in September 2019.
Earlier, starting May 2018, the author initiated this project topic after researching the evidence-based literature on barriers to PrEP in AYA. A brief gap analysis of CHPY’s PrEP implementation practice has been done followed by needs assessment. Conducting the needs assessment revalidated the gap analysis. February through November 2019 have been spent on the initial planning for AYA ComPrEP, which has included consultation with experts and staff, review of literature, and exploration of guidelines, screening tools and templates. The second milestone, in-depth interviews with Balboa Teen Health Center was completed on December to January 2020. PrEP manual and binder were created, and modules for training workshops on AYA and PrEP were developed from December to March 2020.

Subsequently, in a third phase, the education piece, the training and workshop was conducted in April 2020. However, in light of COVID-19, with the closing of the Balboa Teen Health Center, an online simulation for clinicians (NP students) of the University of San Francisco. The scheduled training and workshop for Balboa clinicians and staff on March 13, 2020 was cancelled due to the closure of the clinic related to the ‘shelter in place’ policy in placed as a measure against the COVID-19 pandemic. The fourth and final milestone, evaluation of the intervention and its measurable outcomes was completed by the end of April 2020. Dissemination of the results took place by May 2020 and onwards.

**Responsibility/communication plan.** Planning for the AYA ComPrEP Project required interdisciplinary responsibility and continuous communication (see Appendix J for the work breakdown and Appendix K for the communication plan).

The interprofessional collaboration for this project had occurred primarily among the author, Adam Leonard, NP, Carol Taniguchi, NP, and Dr. Lori Kohler of CHPY, and the author’s DNP committee advisers, Dr. Sandhu and Dr. Rowniak. Working directly with Carol
and Lori, the author was responsible for the development, implementation, management, and evaluation of the project. Carol and Lori lead the CHPY program, serving as clinical experts on CHPY’s patient population, and on HIV prevention. As CHPY’s lead director and nurse practitioner, they have provided authorization for the AYA ComPrEP project and potential changes to clinical practice on site. Adam Leonard, NP was CHPY’s Champion on PrEP having had experiences on PrEP prescribing and being the clinician who initiated PrEP services at Cole Street Clinic and Larkin Street Clinic. He met with the project author multiple times, provided gaps, information, guidance of the project within CHPY, and recommended Balboa Clinic as the implementing site. Dr. Sandhua and Dr. Rowniak provided feedback and guidance all throughout the planning, implementation, and evaluation phases of the project, including the approval of the online simulation training for clinicians of USF.

**SWOT Analysis**

The following SWOT analysis describes the project’s strengths, weaknesses, opportunities, and threats in relation to CHPY that have the potential to affect its implementation (Appendix L).

**Strengths.** CHPY is the youth arm of the San Francisco Department of Public Health, serving adolescents and young adults. It is a smaller program in a bigger public health organization that has three team leaders, which makes managing the bureaucracy easier. CHPY is comprised of more than ten major and satellite specialty clinics across San Francisco. It provides comprehensive clinical services for adolescents and young adults (AYA) ages 12-25, including those who are transgender and homeless (SFHN, 2018). CHPY nurtures an environment that is compassionate and sensitive to its patients’ culture and beliefs. It provides primary care and reproductive health services to all AYA regardless of their socio-economic
status. Both the patient population and CHPY staff members share similar backgrounds as LGBTQ community members and/or people of color, producing a trusting environment that is open to change for improvement. The Family Planning program (FPACT) of the State of California reimburses CHPY clinics for family planning services, which could cover PrEP. CHPY also has an emergency fund for patients who have no insurance, which could additionally cover PrEP medication. This funding would address a vital need, given that CHPY’s patients represent an at-risk AYA population that qualifies for PrEP. Given the magnitude of this need, a DNP project focused on youth and young adults at risk of HIV infection is appropriate and relevant. The agency’s strengths support the project’s potential to improve PrEP clinical implementation for AYA patients.

**Weaknesses.** CHPY has been through a great many changes in the past two years, including disruptive events such as staff resignation and transfers to other departments. CHPY recently lost two of its three nurses, who were well trained in screening for PrEP. Towards the last quarter of 2020, one of the clinicians of CHPY who started PrEP at Larkin and Cole clinics also resigned. Despite being a part of the wider SF Health network, some clinicians of CHPY are not clear of the protocol on PrEP specifically for AYA. There is also a need for clinicians to update about the specifics of the PrEP medications available and when to use them. The new EHR system represents another challenge, because of the new transition from eCW to Epic, it was expected that there would be limitation to capture clinical data. Difficulty navigating the former EHR (eCW) posed problems in this DNP project during the baseline assessment and evaluation. Therefore, project implementation could face difficulties with technology and adherence to change in practice.

**Opportunities.** CHPY is part of the broader SFDPH, which could provide access to
PrEP IN ADOLESCENTS AND YOUNG ADULTS

funding and opportunities for additional support. SFDPH is known for its competency in providing quality HIV prevention and management interventions, particularly to key populations. CHPY is also a part of the recent Getting to Zero initiative for San Francisco, focusing on young people. Currently, one-third of new HIV infections are among young people ages 12 to 24, making it strategic for CHPY to strengthen its PrEP program in order to be proactive in HIV prevention in San Francisco. The announcement of FDA approval for Truvada use as PrEP for young people below 18 years of age will make the medication more acceptable to clinicians.

**Threats.** Obstacles to PrEP use include patient refusal of the medication due to lack of awareness of its effectiveness, negative attitudes toward PrEP, economics, lower adherence and retention rates, relationship status, and stigma. Taking PrEP medications entails financial burden, particularly for those who have no insurance or have no access to PrEP subsidy programs. In a study of AYMSM by Holloway et al (2017), young men of color often voiced concerns about the cost of PrEP. While some health insurance plans such as Medi-Cal cover the entire cost of PrEP, others do not. Adherence to PrEP is viewed by AYMSM as difficult in the long term. AYA were concerned about missing pills, developing resistance to PrEP, and contracting HIV (Perez-Figueroa et al, 2015). Regardless of age or gender, about half of participants interviewed in one study were extremely worried about the negative side effects of PrEP (Fisher et al, 2017).

Another of the barriers to PrEP uptake is cultural stigma, which stems from pre-existing attitudes toward HIV, and specifically depicts patients taking PrEP as “Truvada whores.” Yet the perception of low HIV-risk is the primary reasons AYA decline PrEP, representing an individual-level barrier to PrEP uptake. For these reasons an identified at-risk patient may refuse PrEP evaluation, and an eligible patient may refuse to initiate PrEP. Such threats could affect the PrEP implementation cascade, and subsequently, this project’s measurable outcomes.
Budget and Cost Benefit Analysis

This project was implemented without financial cost to CHPY by utilizing available resources within SFDPH, its networks, and partner agencies. The author absorbed the majority of the project’s cost as an unpaid resource responsible for project development and management. Some cost of this project was taken from the Jonas Scholarship fund that was received by the author. The cost of implementing the project was $660 (Appendix M), which consists of materials developed and used for AYA ComPrEP folders and binders. Going forward, for Balboa Teen Clinic, one staff member such as a nurse, medical assistant, or a person from the partner non-profit organization should function as a PrEP coordinator, comparable to a vaccine coordinator, such as a nurse or medical assistant. This work is already part of staff duties, and would simply be more clearly defined. Consequently, this role would not entail increased salary costs, so it is not included in the project budget.

By preventing HIV infection, this DNP project produces a significant benefit of cost-avoidance and savings in HIV management (Appendix N). HIV antiretroviral treatment costs approximately $20,000 and upwards per patient per year (CDC, 2015). The cost of PrEP pharmacotherapy is $13,000 per patient per year. If all of CHPY’s suspected at-risk patients acquired HIV and required antiretroviral treatment, that would entail significant resources, minimally $20,000 annually per person. When patients are started on PrEP and HIV infection is prevented, an estimated $7,000 in costs per patient are avoided each year. By expanding PrEP implementation, this project also produces a return on investment (ROI) unique to CHPY in the form of increased health insurance reimbursements. CHPY qualifies for Medi-Cal and Family Planning reimbursement. It is important to clarify that initiating PrEP for established Medi-Cal patients does not create additional reimbursement. However, PrEP treatment does require
frequent follow-up, which would keep patients in care, contributing to patient retention, and thus reimbursement (Appendix I). Other than the financial benefits, there are benefits related to quality of life, decreased stigma, decreased suicide rates in this population, and increased access to prevention services for most-at-risk populations. HIV prevention strategies that include PrEP are beneficial for most at-risk populations than allowing them to get infected and then later have them on HIV disease management.

**Pre-Implementation Intervention**

**Screening Tool Development.** Prior to the implementation of the project, the development of screening tools was done. This initial phase of the project included the revision and adoption of existing STI screening tools of CHPY to include screening for risk of HIV infection. The screening tool was based on available risk assessments such as the Clinical Practice Guidelines of the CDC, guidelines from the WHO, the California Department of Public Health (CDPH), the SFDPH, and the PrEP Education for Youth-Serving Primary Care Providers Toolkit developed by the Sexuality Information and Education Council of the United States (SIECUS). They are available online but have to be reviewed and tailored to the needs of the AYA populations.

- **Performance of a gap analysis.** An assessment was performed to determine what type of screening tools are currently used for PrEP, HIV, and STI assessments.
- **Selection of optimal screening tool.** The most appropriate tool was selected after the need was clearly established. Tools that were used in this project included the Quick Clinical Guide: HIV PrEP developed by the AIDS Education & Training Center (Appendix O), and the Ask about PrEP (Appendix P) of the San Francisco Department of Public Health.
- **Development of a screening tool, if necessary.** The tools recommended by the CDC, the WHO, CDPH, SFFDPH, and SIECUS meet the needs of health care delivery to adolescents at Balboa Teen Clinic. The WHO tool was adopted for screening of risk (Appendix Q).

- **Establishing the screening protocol.** A model screening protocol and algorithm for offering PrEP to patients was adopted and developed by reviewing current policy and clinical nursing algorithms, evidence-based practice, and the recommendations of PrEP experts, clinicians, and staff. The algorithm of the SFDPH was adopted.

- **Integrating risk assessment into existing STI screening.** These inquiries could be integrated into the electronic health record (EHR) but was not done due to the limitation as a result of the COVID-19 pandemic. However, a one-page laminated Clinical PrEP essentials developed by SFDPH for providers is available for use (Appendix P). Relevant questions relate to sexual preference and practices, potential HIV exposure, and STI status is also developed.

In a setting such as the Balboa Teen Clinic, as adolescent patients are roomed, clinic staff (nurses, medical assistants, and health workers) are expected to competently use the AYA ComPrEP screening tools to assess for HIV risk. This provides an opportunity to offer information to each new patient on sexually transmitted infections including HIV and AIDS, as well as STI testing, and prevention strategies including PrEP. Clinic staff should be able to identify at-risk AYA and communicate that risk to the clinician.

**Implementation**

The AYA ComPrEP was designed as a HIV-prevention program utilizing PrEP, developed for the San Francisco agency, Community Health Programs for Youth. The program integrated
the biomedical and AIDS risk-reduction models to optimize PrEP intake among adolescents and young adults. The project was implemented in three phases:

1) Education of staff or clinicians
2) The use of the screening tools and protocol integrated into the workflow or the EHR system
3) Evaluation of the AYA ComPrEP Project

Part 1. Clinicians and Clinic Staff Training and Seminar

The education piece for clinicians was done online via Zoom conference. The author with the guidance of Dr. Sandhu created a training agenda (Appendix R) and four modules for the online training presentation.

1.1 Providing vital updates on HIV and PrEP. Clinical content were drawn from public health information of the WHO, CDC, CDPH, SFDPH, and SIECUS.

- Module 1 covered the basic of sexually transmitted infections and HIV & AIDS (Appendix S), while module 2 discussed about the key elements of HIV counseling (Appendix T).
- Discussion included a series of relevant facts about adolescents motivating providers to provide youth-friendly services, which include a review and understanding the realities of young people, their reproductive health, and the SOGI initiative for module 3 (Appendix U).
- FDA recommendations for PrEP, summaries on the safety of the newest PrEP drugs, which have reduced toxicity and therefore less risk to liver and kidney health, and alternate dosing protocol, which also reduce the amount of drug required and
therefore the level of toxicity and potential side effects were covered on Module 4: Pre-Exposure Prophylaxis Appendix V).

1.2 Switching the focus of the training. Two separate training workshops were first suggested for the clinician and staff of Balboa Clinic but then later changed to be a joint-seminar. The face-to-face seminar at Balboa Teen Clinic was scheduled but was cancelled due to the COVID-19 pandemic. As an alternate, an online simulation was done for clinician trainees of USF. This online seminar aimed to increase the comfort level and ease with which providers initiate and prescribe PrEP to AYA who are at high-risk of HIV infection.

1.3 Developing additional professional materials. In addition to the seminars, the author created information packets in a pocket folder, complete with index tabs, so clinicians can quickly access Q & A summaries from the literature on effectiveness rates, alternate dosing protocol, side effects, insurance, financial support, and other potential concerns.

Part 2. Patient Education and Motivation. This intervention has not happened yet due to the closure of the school and clinic related to the COVID-19 pandemic.

2.1 Supporting patient self-care. The decision to take PrEP may be attributed to patients’ recognition of their risks, making a commitment to reduce high-risk sexual contacts, and to increase low-risk activities. Those at high risk for HIV will be offered the option of enrolling in a PrEP program, and staying in contact with a health care environment where they have access to reproductive and sexual health services.

2.2 Providing patients with the most current information.
• Regarding permission to prescribe, many adolescent patients are unaware that they are now legally empowered to obtain PrEP with total confidentiality, and without their parent’s consent or knowledge.

• Concern over toxicity is another reasonable objection raised by young patients, so relevant information will be included on the most recent form of PrEP with lower toxicity, as well as alternate dosing schedules that reduce the amount of the drug required.

2.3 Engaging patients with age-appropriate materials. The author has observed how motivating the use of Quit Smoking kits have been in the CHPY clinics. Using this program as a model, ComPrEP kits will be designed especially with youth in mind. These are bags that contain freebies, condoms, and educational materials on PrEP and HIV prevention similar to the Quit Smoking Kits currently distributed by the San Francisco Department of Public Health.


Implementation of the HIV screening tools and PrEP protocol will be integrated into the electronic health records of CHPY and demonstrated in the seminars. Use of the screening tool and protocols can begin immediately, on completion of the training. Following the seminars, personnel will receive an assessment of the training, which will include open-ended questions on possible improvements. A follow-up assessment will also be performed 6-8 weeks after the training and seminars.

Study of the Methods

After launching the education piece of the AYA ComPrEP, which methods statistical, analytical, qualitative? Etc. for evaluating the effectiveness of the online training and workshop
and simulation to implement the use of PrEP guidelines and screening protocol were performed. In the arm of the intervention for clinicians, post-training competency a survey aimed at assessing increased knowledge were evaluated using baseline and post-test scores. Evaluation of clinicians’ comprehension and comfort to initiate dialogue and prescribe PrEP was performed through the post-training evaluation. Each participant was asked to submit a plan for changes in practice were asked at the end of the training. This data can be used to re-assess the impact of the project in the routine utilization of the HIV PrEP screening tool and the established screening process in their practice.

**Outcome Measures**

**Primary outcomes.** Initially, the primary intent of the project was that by the end of April 2020, the Balboa Teen Clinic will have integrated the AYA ComPrEP program into their practice, offering PrEP services to its patients looking at the percentages in knowledge increase, the use of guidelines, and satisfaction with the implementation of the new risk assessment and the PrEP protocol by clinicians and staff in their practice. However, due to closure of the school and the clinic, the primary outcomes were limited to conduct of the online training and workshop for the clinicians of the University of San Francisco. These outcomes can be used as a basis for recommendations for training and seminar on PrEP for AYA for other clinic and for Balboa Clinic when it opens in the future. The following modified primary outcomes were used to evaluate the effectiveness of AYA ComPrEP Project, based on improvement from baseline clinical practice and outcomes (Appendix G):

- Clinicians at CHPY and the University of San Francisco are well recognized for their training, expertise, and willingness to learn. In this context, it is projected that as many as 80% of the clinicians who attended the training
workshop will have increased knowledge on HIV and PrEP demonstrated by achieving at least 80% passing rate on the training knowledge competency evaluation;

- At least 80% of the clinicians who attend the training workshop will have increased in enabling or non-stigmatizing attitudes on HIV and PrEP;

- At least 80% of the providers will use the guidelines (e.g. risk assessment tool and protocol) in practice demonstrated in the case studies simulation; and

- At least 80% of the clinicians will state increased comfort in prescribing PrEP to AYA patients after the simulation.

**Analysis**

Quantitative and qualitative analytical methods were used for the evaluation of the AYA ComPrEP Project such as descriptive statistics that provide the demographics of clinicians and staff who participated in the intervention. Evaluation tools were developed to gather data for analysis of outcomes using the Likert Scale, a psychometric measure widely applied in survey research. Evaluation tools included pre- and post-training survey questionnaires consisting of knowledge and attitude statements, and structured and close-ended questions.

**Data Instruments and Measurement.**

The questionnaires (Appendix M) used for in-depth interviews and simulation training-workshop consisted of structured mixed multiple choices, true or false, and close-ended questions. The development of the instruments was based on review of literature and inputs from the CHPY leadership, CHPY PrEP Champion, and the DNP committee of the investigator who have expertise on developing survey questionnaires for analysis. Instruments used were designed
specifically for this project. The participants of the in-depth interviews and pre-and post-simulation surveys were encouraged to ask questions to clarify any instructions. Data from the in-depths interviews were used to identify gaps, challenges, and recommendations by Balboa Teen Clinic staff on PrEP program implementation (the author planned to write a separate manuscript on the results of the in-depth interviews). The results of the pre-and post-training workshop were used as the intended outcome of this project, which focused on education of the clinician trainees of USF (nurse practitioners). The pre- and post-simulation questionnaires asked for information about:

**Socio-demographic and Background Information.** This short section asked about the DNP track, year of birth, gender, and sexual orientation of the clinician participants.

**HIV and PrEP Knowledge.** This section was used to analyze the change in knowledge scores of clinicians after attending the training workshop in compared to the baseline. The 22-item true or false knowledge questionnaire asked mainly about HIV transmission, prevention, and the use of pre-exposure prophylaxis (PrEP). Each item was given equal weight in scoring. Correct answer were scored one point while incorrect response scored zero. The possible range of knowledge scores is 0-19.

**Enabling and Non-stigmatizing Attitudes.** This section was used to analyze the change in enabling or non-stigmatizing attitude scores of providers before and after attending the training workshop. There were 22 statements included to measure the attitude scores. Positive statements were considered enabling or non-stigmatizing attitudes, the scores for responses were as follows: Strongly agree = 3; Agree = 2; Neither agree nor disagree = 1, Disagree = 0; Strongly disagree = 0. Others were negative statements and reverse scoring were applied to these items
when scores allotted. The higher the score, the better the enabling or non-stigmatizing attitudes of the providers. Attitude item score below 2 is considered stigmatizing attitudes.

**Data Analysis**

The author of this project collected and summarized the data using the SurveyMonkey and Excel spreadsheet. Descriptive analysis was done using the SurveyMonkey analysis built-in program. Likewise, some data were inputted on Excel. Microsoft Excel, a long-standing software program widely used in accounting, statistics, and the sciences, was used to analyze both the baseline and post-intervention clinical data that were not generated or run by the SurveyMonkey. Through SurveyMonkey and Excel, the results for each measure were calculated as percentages, from which graphs were generated. Graphs comparing baseline and post-intervention results revealed the effects of the educational training and seminars, and other interventions of the project.

**Ethical Considerations**

Ethical considerations directly involved in the AYA ComPrEP Project include patient privacy and potential conflicts of interest. Patient privacy was protected by strict adherence to the guidelines of the Health Insurance Portability and Accountability Act (HIPAA). While this is not a research project, per Institutional Review Board (IRB) guidelines, a waiver was filed. Capturing clinical data from the electronic health records were conducted onsite at CHPY clinics within a secure network. Patient names and personal information were excluded from the data captured and from the analysis of the intervention.

Implications for the ethical practice of PrEP implementation in AYA in primary care are recognized by this project. In accordance with the American Nurses Association Ethical Standards and the Jesuit values of the University of San Francisco, the responsibilities of the
clinician and the healthcare site were examined. Providers must educate patients and weigh the risks versus benefits of taking PrEP to practice beneficence and non-maleficence. To practice justice, providers must also serve as diligent patient advocates by connecting disenfranchised, at-risk AYA patients to social and medical services necessary to access PrEP. Despite well-intentioned attempts, providers must acknowledge that their efforts to provide the best HIV prevention methods may still be blocked by forces outside of their control, such as patient autonomy and limited access to necessary resources.
Section IV- Results

PrEP Online Training Workshop and Simulation

Nineteen clinicians (Nurse practitioner trainees or students) from the University of San Francisco participated in the PrEP online simulation training-workshop. Fifteen of the clinicians were first time to attend a training-workshop on PrEP and four of them have attended a PrEP-related activity before (Figure 1) through the San Francisco City Clinic, the San Francisco Department of Public Health, and the California Association of Nurse Practitioner.

![Figure 1. Have you attended a PrEP training or workshop before](chart.png)

**Knowledge on HIV and PrEP**

Table 1 shows the differences in knowledge measured by the knowledge scores obtained from the pre-test training workshop and post-training workshop. There were 22 knowledge-based questions answerable by True or False marked 1 point for each, a total of 22 points for knowledge score.
Table 1. Changes in HIV and PrEP Knowledge Score, Pre & Post-Training

<table>
<thead>
<tr>
<th></th>
<th>Lowest Knowledge Score</th>
<th>Median Knowledge Score</th>
<th>Highest Knowledge Score</th>
<th>Mean Knowledge Score</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Training Workshop</td>
<td>13 (59%)</td>
<td>16 (73%)</td>
<td>18 (82%)</td>
<td>16 (73%)</td>
<td>1.54 (7%)</td>
</tr>
<tr>
<td>Post-Training Workshop</td>
<td>15 (68%)</td>
<td>20 (91%)</td>
<td>21 (95%)</td>
<td>19 (86%)</td>
<td>1.76 (8%)</td>
</tr>
</tbody>
</table>

Knowledge-based questions on HIV and PrEP answerable by True or False.
Each question is marked as 1 point with total knowledge score = 22

The overall results for HIV and PrEP knowledge in Figure 2 shows that clinicians had an increased in knowledge after the training workshop compared to the baseline. There is a 17.8% increase in overall mean knowledge score post-training workshop (mean KS = 19 or 86%) compared to that of the pre-training workshop (mean KS = 16 or 73%).

Figure 2. Changes in HIV and PrEP Knowledge Score, Pre & Post-Training
All clinicians had some knowledge on HIV and AIDS prevention prior to the online training-workshop and simulation. Table 2 shows that clinicians are aware that HIV infection is preventable (n=19). Likewise, all are aware that daily PrEP can prevent the sexual transmission of HIV by up to 90%, and that providing condoms is essential in HIV prevention and should be promoted even with PrEP.

Table 2. Providers’ Pre and Post-Test Knowledge Score Difference on HIV Prevention & Condom Use

<table>
<thead>
<tr>
<th>Knowledge Items</th>
<th>Correct Responses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prevention of HIV Infection</strong></td>
<td></td>
</tr>
<tr>
<td>There is a vaccine available to prevent HIV infection. (F)</td>
<td>18 (95)</td>
</tr>
<tr>
<td>HIV infection is curable. A person infected with HIV can access cure at treatment clinics or hospitals. (F)</td>
<td>17 (89)</td>
</tr>
<tr>
<td>HIV is preventable. (T)</td>
<td>19 (100)</td>
</tr>
<tr>
<td><strong>Condom Use</strong></td>
<td></td>
</tr>
<tr>
<td>Using condoms can prevent HIV transmission and other STIs. (T)</td>
<td>16 (84)</td>
</tr>
<tr>
<td>The use of condoms should be promoted to prevent HIV infection. (T)</td>
<td>19 (100)</td>
</tr>
<tr>
<td>The use of condoms should not be promoted if a person is on PrEP. (F)</td>
<td>19 (100)</td>
</tr>
</tbody>
</table>

However, the pre- and post-training surveys reveals that clinicians have lack of knowledge about the effectiveness of PrEP to prevent HIV through vaginal sexual exposure and injecting drug use. About 64% of the clinicians (n=12) incorrectly believe that PrEP can reduce the risk of acquiring HIV among people who inject drugs by 30%, the same number of clinicians that incorrectly agreed that for PrEP to be effective against HIV infection through vaginal transmission, it should be taken continuously once daily for 7 days before engaging in vaginal sex. PrEP is 70% effective to prevent HIV transmission through injecting drug use while PrEP to offer protection through vaginal sex; PrEP should be taken for at least 21 days.
Table 3. Providers’ Pre and Post-Test Knowledge Score Difference on PrEP

<table>
<thead>
<tr>
<th>Knowledge Items</th>
<th>Correct Responses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PrEP</strong></td>
<td></td>
</tr>
<tr>
<td>For PrEP to be effective against HIV infection should be taken once daily and should be taken continuously for 7 days before engaging in vaginal sex. (F)</td>
<td>4 (21) to 7 (37)</td>
</tr>
<tr>
<td>Daily PrEP can reduce the risk of acquiring HIV among people who inject drugs by 30%. (F)</td>
<td>4 (21) to 7 (37)</td>
</tr>
<tr>
<td>There is no alternative to daily dosing of PrEP. Other PrEP dosing is ineffective to prevent HIV transmission. (F)</td>
<td>10 (53) to 19 (100)</td>
</tr>
<tr>
<td>Truvada is the only PrEP regimen available in the market to prevent HIV infection so it is easy to prescribe PrEP. (F)</td>
<td>11 (58) to 19 (100)</td>
</tr>
<tr>
<td>Heterosexual men and women are not at risk for HIV infection and are not recommended for PrEP. (F)</td>
<td>18 (95) to 19 (100)</td>
</tr>
<tr>
<td>Daily PrEP can prevent HIV transmission through sex for up to more than 90%. (T)</td>
<td>19 (100) to 19 (100)</td>
</tr>
</tbody>
</table>

Also, another knowledge item that revealed poor understanding is the HIV transmission related to needle stick injury. This is similar to participant’s understanding of the evidence-based principle of U=U (Undetectable = Untransmittable), meaning people living with HIV with undetectable viral load are considered non-infectious based on clinical studies. They are unlikely to transfer HIV. This is a victory in the HIV response that clinicians should be highly aware of and should be used to empower communities of people living with HIV to take their HIV medications so not to transfer the virus to their sexual partners. Achieving and maintaining an undetectable HIV viral load is an evidence-based practice to prevent HIV transmission.

Table 3. Providers’ Pre and Post-Test Knowledge Score Difference on HIV Prevention (Needle Stick Injury and Undetectable = Untransmittable)

<table>
<thead>
<tr>
<th>Knowledge Items</th>
<th>Correct Responses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIV Transmission: Needle Prick</strong></td>
<td></td>
</tr>
<tr>
<td>After needle prick injury with a needle from an HIV-infected patient, immediately gently expressing blood from the puncture site reduces the risk of contracting HIV infection. (T)</td>
<td>9 (47) to 11 (58)</td>
</tr>
</tbody>
</table>
After needle prick injury with a needle from an HIV-infected person, the chance of contracting HIV is less than 1%. (T)  

After a needle prick injury with a needle from an HIV-infected person, a health worker may take HIV medications to reduce the chance of contracting HIV infection. (T)  

**HIV Transmission: Undetectable = Untransmittable**

A person with HIV who is undetectable is considered infectious. He/she is likely to transmit the virus to his/her partners through sexual intercourse.  

A person will automatically get infected with HIV once he/she has sexual intercourse with a person living with HIV. (F)

Other knowledge items that were incorrectly answered by clinicians include the frequency of HIV testing for very high-risk patients. It should not be once a year per CDC and SFDPH but every 3 months guidelines. Likewise, children born to HIV-positive women does not equate to HIV-positive newborn or children.

Table 4. Providers’ Pre and Post-Test Knowledge Score Difference on STI, Risk, and HIV Testing

<table>
<thead>
<tr>
<th>Knowledge Items</th>
<th>Correct Responses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STI, Risk, and HIV Testing</strong></td>
<td>Pre-Test</td>
</tr>
<tr>
<td>A person who is at very high risk for HIV and other STIs should be tested once a year for HIV. (F)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>One can be identified as HIV-positive by the way the person looks (e.g. signs and symptoms like skin ulcers, weight loss). (F)</td>
<td>17 (89)</td>
</tr>
<tr>
<td>If a person has a sexually transmitted infection (STI), his/her chance of getting HIV is higher. (T)</td>
<td>18 (95)</td>
</tr>
<tr>
<td>A person who has no sexual partner is not at risk for HIV. He/she should never be tested for HIV. (F)</td>
<td>17 (89)</td>
</tr>
<tr>
<td><strong>Mother-to-Child HIV Transmission</strong></td>
<td></td>
</tr>
<tr>
<td>Children born to HIV-positive women are infected with HIV at birth. (F)</td>
<td>15 (79)</td>
</tr>
</tbody>
</table>
Enabling and Non-Stigmatizing Attitudes

Table 5 provides the difference in enabling or non-stigmatizing attitudes of providers who participated in the online training-workshop. The mean enabling attitude score was 47 (78%) for the pre-training and workshop survey while the mean enabling attitude score post training was 53 (88%). Figure 1 shows a 23.4% increase in enabling attitude score (11 points increased).

<table>
<thead>
<tr>
<th></th>
<th>Lowest Enabling Attitude Score</th>
<th>Median Enabling Attitude Score</th>
<th>Highest Enabling Attitude Score</th>
<th>Mean Enabling Attitude Score</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Training Workshop</td>
<td>31 (52%)</td>
<td>49 (82%)</td>
<td>55 (92%)</td>
<td>47 (78%)</td>
<td>6 (10%)</td>
</tr>
<tr>
<td>Post-Training Workshop</td>
<td>36 (60%)</td>
<td>55 (92%)</td>
<td>60 (100%)</td>
<td>53 (88%)</td>
<td>7.2 (12%)</td>
</tr>
</tbody>
</table>

20 Statements on HIV and PrEP issues, Total EA score = 60
Highly enabling response (strongly agree for positive statement or strongly disagree for negative statement) was marked for 3 points

Enabling response (agree for positive statement or disagree for negative statement) was marked for 2 points

Neither agree nor disagree = 1 point
Figure 2. Changes in Enabling or Non-Stigmatizing Attitudes, Pre & Post-Training

Table 6 and 7 reveals the breakdown of items describing the providers’ enabling or non-stigmatizing attitudes before and after the online training workshop. Prior to the training working, providers have stigmatizing (non-enabling) attitudes on 1) mandating disclosure to their partners of people living with HIV (mean attitude score 0.3, SD=0.58), 2) not allowing homosexuals to donate blood (mean attitude score 1.5, SD=1.31), 3) always involving parents for those on PrEP (mean attitude score 1.5, SD=1.31), and 4) believing they have the right to know the HIV status of patients in their practice including those that are not under their care mean attitude score 1.8, SD=1.21).
<table>
<thead>
<tr>
<th>Attitude Item</th>
<th>Proportion (%) of Respondents</th>
<th>Mean Attitude Score</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neither Agree nor Disagree</td>
</tr>
<tr>
<td><strong>Attitude of Blame &amp; Disclosure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In my opinion, persons living with HIV deserve their illness.</td>
<td>6 (32%)</td>
<td>4 (21%)</td>
<td>2 (11%)</td>
</tr>
<tr>
<td>Homosexual men should be allowed to donate blood.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People who are HIV positive should be encouraged to keep their diagnosis to themselves.</td>
<td>1 (5%)</td>
<td>-</td>
<td>3 (16%)</td>
</tr>
<tr>
<td>A person who is HIV-positive should be mandated to tell their partners about their HIV status.</td>
<td>7 (37%)</td>
<td>7 (37%)</td>
<td>4 (21%)</td>
</tr>
<tr>
<td>People who test positive for HIV should not engage in any sexual activity.</td>
<td>-</td>
<td>-</td>
<td>1 (5%)</td>
</tr>
<tr>
<td><strong>Attitude Toward Person Living with HIV and the workplace</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am uncomfortable providing care for an HIV infected person.</td>
<td>1 (5%)</td>
<td>2 (11%)</td>
<td>1 (5%)</td>
</tr>
<tr>
<td>A person who is HIV positive should not be allowed to work as a health worker.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>I have the right to know the HIV status of the patients/clients in our practice/unit/department, including those who are not under my care.</td>
<td>4 (21%)</td>
<td>1 (5%)</td>
<td>-</td>
</tr>
<tr>
<td>I am willing to work in the same unit/office with a colleague who is HIV-</td>
<td>16 (84%)</td>
<td>2 (11%)</td>
<td>-</td>
</tr>
<tr>
<td>Positive</td>
<td>-</td>
<td>-</td>
<td>4 (21%)</td>
</tr>
<tr>
<td>Health care workers should be required for an HIV antibody test before engaging in any hospital or clinical practice.</td>
<td>-</td>
<td>-</td>
<td>1 (5%)</td>
</tr>
<tr>
<td>I have the right to know if someone in our workplace is HIV-positive.</td>
<td>-</td>
<td>-</td>
<td>1 (5%)</td>
</tr>
</tbody>
</table>

### Attitude toward PrEP and role in HIV prevention

| As a professional health worker, I have the duty to educate the public on HIV and PrEP. | 13 (68%) | 5 (26%) | - | 1 (5%) | - | 2.6 (86%) | 0.77 |
| Adolescents and young adults, including those below 18 years of age, who are at high-risk of HIV infection should be offered PrEP. | 14 (74%) | 5 (26%) | - | - | - | 2.7 (91%) | 0.45 |
| Counseling should be a part of any PrEP program. | 15 (79%) | 4 (21%) | - | - | - | 2.8 (93%) | 0.42 |
| Non-clinician staff (nurses, medical assistants, health workers) should take an active role in adolescents PrEP follow-up and monitoring. | 17 (89%) | 2 (11%) | - | - | - | 2.9 (96%) | 0.32 |
| Same-Day PrEP should be made available and offered to adolescents at-risk for HIV. | 14 (74%) | 5 (26%) | - | - | - | 2.7 (93%) | 0.45 |
| It is embarrassing to talk about sex and condom use with patients, therefore, I should not initiate to talk about it with them. | - | - | - | 6 (32%) | 13 (68%) | 2.7 (89%) | 0.48 |
| Alternative PrEP dosing such as event-based dosing should be made available to adolescents. | 9 (47%) | 8 (42%) | 2 (11%) | - | - | 2.4 (79%) | 0.68 |
| Condoms are for married | - | - | - | 2 | 17 | 2.9 | 0.32 |
people only. Adolescents should be prohibited from using condoms.

Parents of adolescents, particularly those below 18 years of age, who are on PrEP should always be involved in their care.

Note: Positive statements were considered enabling or non-stigmatizing attitudes, the scores for responses were as follows: Strongly agree = 3; Agree = 2; Neither agree nor disagree = 1, Disagree = 0; Strongly disagree = 0.

Others were negative statements, reverse scoring were applied to these items when scores allotted. Attitude item score below 2 is considered stigmatizing attitudes.

The result on Table 6 revealed that despite the model of online training versus in person training, there was an increase in enabling attitude scores, some providers remain to have stigmatizing or non-enabling attitudes on HIV issues such as mandating a person who is HIV positive to tell their partners about their HIV status, lowest attitude score of 1.3, SD=1.38.

Likewise, attitude towards allowing homosexual to donate blood received the second lowest average attitude score, 2.1, SD=1.13.

Table 6. Post-Training Workshop Attitude Scores by Attitude Items

<table>
<thead>
<tr>
<th>Attitude Item</th>
<th>Proportion (% of Respondents)</th>
<th>Mean Attitude Score</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>In my opinion, persons living with HIV deserve their illness.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neither Agree nor Disagree</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Homosexual men should be allowed to donate blood.</td>
<td>9 (47%)</td>
<td>5 (26%)</td>
<td>2 (11%)</td>
</tr>
<tr>
<td>People who are HIV positive should be encouraged to</td>
<td>-</td>
<td>-</td>
<td>1 (5%)</td>
</tr>
</tbody>
</table>
keep their diagnosis to themselves.

<table>
<thead>
<tr>
<th></th>
<th>3 (16%)</th>
<th>5 (26%)</th>
<th>4 (21%)</th>
<th>-</th>
<th>7 (37%)</th>
<th>1.3 (44%)</th>
<th>1.38</th>
</tr>
</thead>
</table>

A person who is HIV-positive should be mandated to tell their partners about their HIV status.

People who test positive for HIV should not engage in any sexual activity.

Attitude Toward Person Living with HIV and the workplace

<table>
<thead>
<tr>
<th></th>
<th>1 (5%)</th>
<th>-</th>
<th>-</th>
<th>3 (16%)</th>
<th>15 (79%)</th>
<th>2.7 (89%)</th>
<th>0.75</th>
</tr>
</thead>
</table>

I am uncomfortable providing care for an HIV infected person.

<table>
<thead>
<tr>
<th></th>
<th>-</th>
<th>-</th>
<th>-</th>
<th>1 (5%)</th>
<th>18 (95%)</th>
<th>2.9 (98%)</th>
<th>0.23</th>
</tr>
</thead>
</table>

A person who is HIV positive should not be allowed to work as a health worker.

<table>
<thead>
<tr>
<th></th>
<th>-</th>
<th>1 (5%)</th>
<th>1 (5%)</th>
<th>6 (32%)</th>
<th>11 (58%)</th>
<th>2.4 (81%)</th>
<th>0.84</th>
</tr>
</thead>
</table>

I have the right to know the HIV status of the patients/clients in our practice/unit/department, including those who are not under my care.

<table>
<thead>
<tr>
<th></th>
<th>17 (89%)</th>
<th>2 (11%)</th>
<th>-</th>
<th>-</th>
<th>-</th>
<th>2.9 (96%)</th>
<th>0.32</th>
</tr>
</thead>
</table>

I am willing to work in the same unit/office with a colleague who is HIV-positive. a

Health care workers should be required for an HIV antibody test before engaging in any hospital or clinical practice.

<table>
<thead>
<tr>
<th></th>
<th>-</th>
<th>2 (11%)</th>
<th>3 (16%)</th>
<th>14 (74%)</th>
<th>2.6 (88%)</th>
<th>0.68</th>
</tr>
</thead>
</table>

I have the right to know if someone in our workplace is HIV-positive.

Attitude toward PrEP and role in HIV prevention

<table>
<thead>
<tr>
<th></th>
<th>16 (84%)</th>
<th>3 (16%)</th>
<th>-</th>
<th>-</th>
<th>-</th>
<th>2.8 (95%)</th>
<th>0.42</th>
</tr>
</thead>
</table>

As a professional health worker, I have the duty to educate the public on HIV and PrEP. a

Adolescents and young adults, including those below 18 years of age, who are at
high-risk of HIV infection should be offered PrEP. *a*  

<table>
<thead>
<tr>
<th>Counseling should be a part of any PrEP program. <em>a</em></th>
<th>17 (89%)</th>
<th>2 (11%)</th>
<th>-</th>
<th>-</th>
<th>-</th>
<th>2.9 (96%)</th>
<th>0.32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-clinician staff (nurses, medical assistants, health workers) should take an active role in adolescents PrEP follow-up and monitoring. <em>a</em></td>
<td>17 (89%)</td>
<td>2 (11%)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2.9 (96%)</td>
<td>0.32</td>
</tr>
<tr>
<td>Same-Day PrEP should be made available and offered to adolescents at-risk for HIV. <em>a</em></td>
<td>15 (79%)</td>
<td>4 (21%)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2.8 (93%)</td>
<td>0.42</td>
</tr>
<tr>
<td>It is embarrassing to talk about sex and condom use with patients, therefore, I should not initiate to talk about it with them</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4 (21%)</td>
<td>15 (79%)</td>
<td>2.8 (93%)</td>
<td>0.42</td>
</tr>
<tr>
<td>Alternative PrEP dosing such as event-based dosing should be made available to adolescents. <em>a</em></td>
<td>12 (63%)</td>
<td>5 (26%)</td>
<td>1 (5%)</td>
<td>1 (5%)</td>
<td>-</td>
<td>2.5 (82%)</td>
<td>0.84</td>
</tr>
<tr>
<td>Condoms are for married people only. Adolescents should be prohibited from using condoms.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2 (11%)</td>
<td>17 (89%)</td>
<td>2.9 (96%)</td>
<td>0.32</td>
</tr>
<tr>
<td>Parents of adolescents, particularly those below 18 years of age, who are on PrEP should always be involved in their care.</td>
<td>-</td>
<td>1 (5%)</td>
<td>2 (11%)</td>
<td>6 (32%)</td>
<td>10 (53%)</td>
<td>2.3 (77%)</td>
<td>0.89</td>
</tr>
</tbody>
</table>

Note: *a* Positive statements were considered enabling or non-stigmatizing attitudes, the scores for responses were as follows: Strongly agree = 3; Agree = 2; Neither agree nor disagree = 1, Disagree = 0; Strongly disagree = 0.

Others were negative statements, reverse scoring were applied to these items when scores allotted. Attitude item score below 2 is considered stigmatizing attitudes.

SD = Standard Deviation
Training Workshop Evaluation

Post-training, the participants’ feedback on the online training-workshop and simulation reveals that providers believed they achieved the objectives set for each module. More than 88% agreed that they achieved almost all the objectives set for each module at the beginning of the training.

Figure 3. Post-Training Workshop Evaluation Result on Module 1

As a result of participating in the session "Module 1: The Basic of STI, HIV and AIDS," I am able to:

- Define and differentiate STI, HIV, and AIDS
- Understand how HIV is transmitted from one person to another
- Correct misconceptions about HIV transmission
- Understand how HIV affects the body
- Learn how HIV and AIDS can be prevented as well as treated and managed
Figure 4. Post-Training Workshop Evaluation Result on Module 2

As a result of participating in the session "Module 2: Key Elements for Ethical and Effective HIV Prevention Counseling Practices," I am able to:

- Describe the importance of HIV counseling
- Identify the DOs and DONTs of HIV prevention counseling
- Describe key points in PrEP counseling
- Describe what is provider-initiated counseling and Testing (PICT)
- Describe what is client-initiated counseling and Testing (CICT)

Figure 5. Post-Training Workshop Evaluation Result on Module 3

As a result of participating in the session "Module 3: AYA and The SOGI Initiative," I am better able to:

- Describe the characteristics of adolescents and young adults (AYA), and transgender AYA
- Identify the health risks and solutions for AYA
- Describe the difference of sex, sexual orientation, and gender identity.
- Assess, plan, and intervene for an AYA client who may visit to our clinic for primary care
As a result of participating in the session "Module 4: Pre-Exposure Prophylaxis for AYA," I am able to:

- Describe what PrEP is, medication available, and its indication.
- Describe PrEP effectiveness, side effects, and benefits.
- Identify the barriers of PrEP use in adolescents and young adults.
- Understand resources, guidelines, and algorithm.
- Develop confidence to prescribe PrEP in our practice.

Responses:

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe what PrEP</td>
<td>97.00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>is, medication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>available, and its</td>
<td></td>
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<td>indication.</td>
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<tr>
<td>Describe PrEP</td>
<td>98.00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>effectiveness, side</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>effects, and benefits.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Identify the barriers</td>
<td>97.00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of PrEP use in</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>adolescents and young</td>
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<td></td>
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<tr>
<td>adults.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understand resources,</td>
<td>99.00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>guidelines, and</td>
<td></td>
<td></td>
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<tr>
<td>algorithm.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Develop confidence</td>
<td>98.00%</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>to prescribe PrEP</td>
<td></td>
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<tr>
<td>in our practice</td>
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</tbody>
</table>

Figure 6. Post-Training Workshop Evaluation of the Presenter

Presenter: Igor Mocorro, MPH, RN, PHN. This speaker's presentation skills were effective for the content presented.
Participants Plan of Change

Providers were also asked to give at least three changes that they would do in their practice as a result of participating in the online training workshop (Table 7).

Table 7. Providers’ Plan Change in Practice

<table>
<thead>
<tr>
<th>Provider Number</th>
<th>Change in Practice</th>
<th>Change Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1) Being more comfortable with offering Prep.</td>
<td>Use of PrEP Guidelines, Protocols, and Algorithms</td>
</tr>
<tr>
<td></td>
<td>2) Being more open with discussing prep with patients.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1) I feel more prepared to prescribe PrEP.</td>
<td>Assessment and Risk Identification</td>
</tr>
<tr>
<td></td>
<td>2) I learned more about counseling prior to testing and will use that when</td>
<td>Use of PrEP Guidelines, Protocols, and Algorithms</td>
</tr>
<tr>
<td></td>
<td>discussing testing.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3) I will open a bigger discussion into sexual activity</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1) I will approach the young adolescent/adult population in a more sensitive</td>
<td>Prevention and Counseling</td>
</tr>
<tr>
<td></td>
<td>fashion when doing a health and social history.</td>
<td>Use of PrEP Guidelines, Protocols, and Algorithms</td>
</tr>
<tr>
<td></td>
<td>2) I will able to consider some of the barriers to treatment and knowledge of this</td>
<td></td>
</tr>
<tr>
<td></td>
<td>age population.</td>
<td></td>
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<td></td>
<td>3) I will know how to provide resources to their learning needs</td>
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<tr>
<td>4</td>
<td>1) Inquire about sexual history and practice as apart of primary care visits to</td>
<td>Assessment and Risk Identification,</td>
</tr>
<tr>
<td></td>
<td>Identify health risks</td>
<td>Prevention Education and Counseling</td>
</tr>
<tr>
<td></td>
<td>2) Education on importance of safe sex practices</td>
<td>Use of PrEP Guidelines, Protocols, and Algorithms</td>
</tr>
<tr>
<td></td>
<td>3) Review the use of PrEP for those who are involved in high risk sexual behaviors</td>
<td></td>
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<tr>
<td>5</td>
<td>1) Understand and follow the PrEP guidelines. It is easy for me to understand it</td>
<td>Assessment and Risk Identification,</td>
</tr>
<tr>
<td></td>
<td>since we went over it in this simulation training date. I also did not know as</td>
<td>Prevention Education and Counseling</td>
</tr>
<tr>
<td></td>
<td>NPs we could prescribe PrEP, I thought that only women’s health NP or other</td>
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<tr>
<td></td>
<td>specialists could prescribe the medication.</td>
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<tr>
<td></td>
<td>2) Be more mindful and aware of my nonverbal expressions</td>
<td></td>
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<tr>
<td></td>
<td>3) Develop confidence to discuss PrEP and sexual histories</td>
<td></td>
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<tr>
<td>6</td>
<td>1) Balance empathy with professionalism, not being overly reassuring</td>
<td>Assessment and Risk Identification</td>
</tr>
<tr>
<td></td>
<td>2) Implement harm reduction tactics versus full</td>
<td></td>
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<tr>
<td>6</td>
<td>Prevention framework regarding high-risk behaviors</td>
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<tr>
<td>7</td>
<td>3) Demonstrate confidence and confidentiality while taking a sexual history to promote trust and disclosure</td>
<td></td>
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<tr>
<td>7</td>
<td>Prevention Education and Counseling</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>1) I will feel more comfortable talking to this age group about sex. I will be able to initiate difficult conversations about sex.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Assessment and Risk Identification</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>2) I will be able to adequately gather a health history that includes details about sexual health. I will use the information I gained about confidentiality for adolescents and young adults that use their parents' insurance to ensure that patients get the treatment they need and are able to maintain confidentiality.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Plan of Care and Evaluation</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>1) Ask questions to open up dialogue about STI/HIV/AIDS in addition to safe sex &amp; protection</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Use of PrEP Guidelines, Protocols, and Algorithms</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>2) Reassurance &amp; support about patient options and choices.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Assessment and Risk Identification</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>3) Provide all pertinent info needed on STI/HIV/AIDS to make educated decision</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Prevention Education and Counseling</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>4) Be confident in using PEP &amp; PrEP in clinical setting</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Plan of Care and Evaluation</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>5) Report as mandated per CDC</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>1) Prepare and have ready handouts related to physical anatomy and STIs and prevention</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Assessment and Risk Identification</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>2) Be aware of ways to help AYA access PrEP and PEP through community resources/LGBTQ support services</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Prevention Education and Counseling</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>3) Routinely screen AYA regarding sexual health and drug use.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Plan of Care and Evaluation</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>1) Initiate HIV/AIDS/STI discussion without fear</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Assessment and Risk Identification</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>2) Use CDC guidelines for management of STIs and to understand required reporting responsibilities</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Prevention Education and Counseling</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>3) Determine appropriate HIV/AIDS interventions by using the Primary Care HIV/AIDS algorithm and proper use of PEP and PrEP</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Use of PrEP Guidelines, Protocols, and Algorithms</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>1) STD counseling</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Assessment and Risk Identification</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>2) HIV risk assessments</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Prevention Education and Counseling</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Use of PrEP Guidelines, Protocols, and Algorithms</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>1) Parents involvement not necessary to protect patients confidentiality for minors</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Assessment and Risk Identification</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>2) Be more open in sex education teaching</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>---</td>
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<td></td>
</tr>
<tr>
<td>3) Identifying their concerns and addressing them regarding sexuality</td>
<td>Prevention Education and Counseling</td>
<td></td>
</tr>
</tbody>
</table>
| 13 | 1) I don't work with AYA very much but I will certainly remember this material for when/if I am working with this population and will apply it to my adult practice.  
2) It is so important to always talk about sexual health with AYA but also with the adult and elderly populations. | Prevention and Counseling |
| 14 | 1) Thorough questioning of sexual practices and preferences  
2) Addressing questions and lack of knowledge early  
3) Encouraging patient confidence by providing resources | Assessment and Risk Identification  
Prevention Education and Counseling  
Plan of Care and Evaluation |
| 15 | 1) Learn to identify premature or unsafe sexual expression.  
2) Gained confidence in furnishing PrEP to this population.  
3) Learned how to educate this population on PrEP. | Assessment and Risk Identification  
Prevention Education and Counseling |
| 16 | 1) Assessing the physical, mental, and social determinants of health for AYA  
2) Offering PEP and PrEP, and connecting them with a PrEP navigator to assist with financial and housing assistance  
3) Encouraging safe sex practices- prevention, screening, prophylaxis | Assessment and Risk Identification  
Prevention and Counseling  
Use of PrEP Guidelines, Protocols, and Algorithms |
| 17 | 1) More information gained, therefore, more information shared  
2) Introduce AYA about the availability of PrEP and PEP in preventing HIV  
3) Help prevention of spread of HIV among all population actually not just AYA. | Assessment and Risk Identification  
Prevention Education and Counseling |
| 18 | In primary, I would  
1) Advocate for youth health  
2) STD screening for LGBT youth  
3) Educate about PrEP | Assessment and Risk Identification  
Prevention Education and Counseling |
| 19 | 1) Asking about sexual encounters.  
2) Offer PrEP  
3) Offer more PrEP counseling. | Assessment and Risk Identification  
Prevention Education and Counseling |
Section V. Discussion

Summary

The purpose of the AYA ComPrEP Project is to standardize PrEP screening tools, guidelines, and protocols to increase PrEP services provision for adolescents and young adults. In particular, the project aimed at integrating PrEP into the practice of Balboa Teen Health Center. However, due to closure of the school and the clinic, the primary outcomes were limited to conduct of the online training and workshop for the clinicians of the University of San Francisco. The goals of the online training workshops were achieved. Clinicians of the University of San Francisco who participated in the online training workshop had increased knowledge on HIV and PrEP (mean post training knowledge score of 86%). At least 80% of the clinicians who attended the training workshop have had increased in enabling or non-stigmatizing attitudes on HIV and PrEP (mean post training attitude score of 88%). Also, during the simulation, 100% of the providers used the guidelines (e.g. risk assessment tool and protocol) in case studies provided to them, demonstrating their ability to decide the plan of care of patients who need PrEP. Likewise, 100% (n=19) of the clinicians have stated increased comfort in prescribing PrEP to AYA patients after the simulation.

At CHPY, fortunately, the leadership is interested to having this project implemented and there is an on-going support for the author to train providers and clinic staff to provide PrEP services and integrate the PrEP protocol at Balboa Teen Health Center. While PrEP is currently a part of the services offered by CHPY clinics, there is the need to solidify protocols and procedures and to roll out PrEP services at Balboa Teen Health Center. Although it is intended that the project will effectively increase PrEP offering and prescription to patients of Balboa Teen Health Center, there were some setbacks or delays.
The author at the start anticipated possible challenges related to the implementation of the project such as push back from some clinic staff, particularly medical assistants who maybe not interested in doing interventions beyond drawing labs and providing counseling. This however was not evident for Balboa Teen Health Center based on the results of the in-depth interviews. Staff were supportive to bring PrEP services in the clinic although the results of the roll out of the actual PrEP services is yet to be seen. The shelter-in-place policy for San Francisco due to COVID-19 pandemic has delayed the actual implementation of the PrEP services at Balboa Teen Health Center. If it will push through, the author anticipates that the time required to effectively screen AYA for PrEP services may be seen as a barrier, reducing time from other clinic activities. In that context, it could be perceived as an added burden impeding clinic flow.

Another challenge that the project may face is the transition to a new electronic health record for the entire SFDPH. The eCW software is now replaced by EPIC software. The author planned to be in consultation with the SFDPH IT team, which manages the software and electronic medical system of SFDPH to ensure that the screening tools or templates will be fully integrated into EPIC. However, based on the consultation, this maybe easy said than done. It was suggested though that the template for risk assessment or screening could be written on a Microsoft Word and then copied pasted to EHR if a built-in template is not possible to create right away. It is important that all clinic team members realize the value of the project and that everyone takes ownership. The continuation and sustainability of the project would be most successful if it is experienced not as a burden or extra work, but as an integral piece of the services CHPY provides for key populations most affected by HIV. The community clinics of
CHPY were developed specifically to mitigate the impact of the epidemics and health disparities on young people.

**Interpretation**

This project expected to improve the knowledge, enabling attitudes, and confidence of providers to provide PrEP services to adolescents and young adults. Results from the in-depth interviews of Balboa Teen Health center providers and staff show showed a great interest and enthusiasm to make PrEP services available in the clinic. The results from the interviews indicated the need for improvement in the clinic workflow and determination of roles and responsibilities in the roll out of PrEP services for AYA such as improving communication among staff, understanding the role of the PrEP navigator and staff from the San Francisco Unified School District (SFUSD) who are part of the Balboa Team Health Center team.

The training workshop, which was modified to implement online and to target USF NP students, showed the lack of knowledge on PrEP for some providers such as knowledge on PrEP protection for vaginal sex, protection for people who inject drugs, HIV transmission by needle stick injury, and the frequency of testing for most-at-risk patients. Likewise, despite of the training workshop, some providers still showed stigmatizing or non-enabling attitudes on the areas of blood donation from homosexuals, and mandated disclosure for those who have HIV-positive status to their partners.

**Limitations**

The AYA ComPrEP had some limitations; some of the interventions were not implemented or were modified due to the ‘shelter-in-place’ policy in the San Francisco Bay Area related to the COVID-19 pandemic. The PrEP training workshop for providers and staff of Balboa Teen Clinic scheduled on March 13, 2020 was canceled due to the school and clinic closure. While it was agreed
between the author and the clinic management to continue the training intervention for staff of Balboa Clinic, the date is unknown and it would not happen until the resume of classes at Balboa High School and the re-opening of the health center. While the training workshop piece was modified to involve nurse practitioner students of USF through an online training workshop and simulation, the project only measured the increase in knowledge, enabling attitudes, and confidence of clinicians post-training.

The participants were asked to identify three changes that they plan to implement in their practice. This plan may not necessarily lead to actual change in practice. Providers who completed the online training workshop are unable to immediately offer PrEP services and depending on the type of their work, not everyone may necessarily be prescribing PrEP. Since time from the training to the actual provision of PrEP services may take longer for the participants, their confidence may regress and additional follow-up PrEP training maybe needed. Despite of the above-mentioned limitations, practice tools for offering services and prescribing PrEP were provided to the participants so that providers have resources to use if they need them. Likewise, they were connected to Lyric (non-profit organization that provides PrEP navigation support and other services for young people) and the PrEP navigator who expressed his support for continuous networking and collaboration.

In terms of the training workshop, though the online training workshop for USF nurse practitioner students was a success based on the feedback on how it was done and the achievement of the objectives by the participants for each module, doing it online revealed some limitations such as the time allocated for online simulation. Follow-up discussions related to the results of the surveys were not done. If follow-up is possible,
this can create space for continuous discussions, identify emerging issues, and improve practices. There is a need for more time to discuss further the cases, questions, and concerns about PrEP for the adolescents and young adults.

While the project measured the increased in knowledge and enabling or non-stigmatizing attitudes of the providers who participated in the online training workshop, no statistical inference can be done between variables. We cannot associate the change in attitudes with knowledge scores. Likewise, scoring the enabling attitudes brought challenging ethical issues. While they are based on human rights approaches, interpretation can varies by situations, state laws. For example, the human rights based approach uphold confidentiality of HIV test result and a patient who is diagnosed of HIV should not be forced to disclose their status to their partners, there maybe an ethical dilemma for some providers on how to deal with such situation. Findings cannot be generalized to all the nurse practitioner students in the San Francisco Bay Area or in California in general because neither a random sample was used nor was the sample reflective of the entire population. However, the results showed interesting findings and support theories that the conduct of training workshops on any health topics improve knowledge and attitudes.

**Conclusion**

The Community Health Program for Youth (CHPY) of the San Francisco Department of Public Health has the mission to keep adolescents and young adults in San Francisco healthy. Focusing on PrEP and other protective measures provides an opportunity for San Francisco to take leadership in HIV prevention. Given the complexity of adolescents and young adults, without comprehensive interventions, we could slip back into epidemic status. PrEP access by AYA is possible by breaking the barriers to PrEP prescription through education and training of
providers and clinic staff. This project demonstrated the needs for providers and clinic staff to go through PrEP education and training workshop to be able to provide quality PrEP services to AYA. Nurse practitioner students of the University of San Francisco who participated in the online training workshop were interested to learn and achieve competency in providing PrEP services and prescription to AYA. Training on PrEP for AYA (not only for adults) in primary care setting should be provided to all NP students across the nation. They need more discussions about issues of blood donations by key populations, HIV disclosure, and prevention of needle stick injuries. Stigmatizing attitudes should be addressed in PrEP and HIV education and training clinicians. Evidence-based research such as U=U (undetectable viral load = untransmittable HIV) should be discussed to eliminate stigmatizing attitudes and promote enabling environment for our most-at-risk populations. At times of COVID-19 pandemic, online simulation training workshop on PrEP was an effective alternative means if face-to-face training is not possible.

The American Nurses Association (ANA) provides guidance on HIV and AIDS Nursing Scope of Practice and also addresses these infections in the more general Standards Scope for Nurses. Promoting effective HIV prevention with PrEP and empowering adolescents to reduce the risk of HIV transmission is within the nursing scope of practice, which includes assessing patient risk, creating plans for adherence, continuity of treatment, and evaluating patient response. While primary care clinicians, including nurse practitioners, physicians and physician assistants, play an important role in prescribing PrEP, registered and vocational nurses, health workers, and medical assistants have the capabilities needed to close the gap between the prescriber and the patient through PrEP education and counseling, conducting PrEP follow-up, and adherence support.
PrEP is a vital component of a robust HIV-prevention program in high-risk communities. This medication has proven to be safe and effective and is easy to prescribe and monitor. Currently, it is the only effective pharmaceutical interventions available to prevent HIV infections in key populations who engage in high-risk behaviors. PrEP can be prescribed by primary care clinicians, including advanced practice nurses and should be made accessible to AYA patients at risk of HIV infection, regardless of their socio-economic status or other background factors. If PrEP becomes widely accessible, including to high-risk adolescents and young adults, new HIV infections and the burden of lifelong HIV infection will be averted. Key populations such as young men who have sex with men will live healthier lives free from HIV and associated illnesses and co-infections.
Section VI. Other Information

Funding Full Disclosure

The author has received a scholarship grant as a Jonas Nurse Scholar to assist with this project. Most of the scholarship received was used to pay part of the author’s tuition fees while $660 was spent for the project materials. There are no other conflicts or disclosures.
Section VII. References


PrEP IN ADOLESCENTS AND YOUNG ADULTS


### Appendix A. Types of PrEP Dosing

<table>
<thead>
<tr>
<th>Types of PrEP Dosing</th>
<th>Dosing Description</th>
<th>Number of tablets per week</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Daily PrEP</strong></td>
<td>TDF/FTC taken the same time daily.</td>
<td>7 tabs</td>
</tr>
<tr>
<td><strong>Alternative PrEP dosing</strong>&lt;br&gt;(non-daily PrEP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-demand PrEP</td>
<td>TDF/FTC before and after sexual activity: taking a loading dose of two tablets of TDF-FTC or placebo with food 2 to 24 hours before sex. A third pill followed this dosage 24 hours after the first drug intake and a fourth pill 24 hours later (Molina et al, 2015).</td>
<td>4 tabs</td>
</tr>
<tr>
<td>Event-Driven PrEP</td>
<td>Similar to on-demand PrEP; take 1 tablet before and after sex a total of 2 tablets and not 4 tablets as compared to the on-demand PrEP (Grant et al, 2018).</td>
<td>2 tabs</td>
</tr>
<tr>
<td>Time-Driven PrEP</td>
<td>Taking 1 tablet of TDF/FTC (Truvada) twice weekly with a post-sex dose, which 59 participants were given in the study of Grant et al (2018)</td>
<td>2 tabs + 1 tab after sex</td>
</tr>
<tr>
<td>Intermittent PrEP</td>
<td>Taking a pill of TDF/FTC on Monday and Friday, and 1 pill within 2 hours after sex, not to exceed 1 dose per day (Mutua et al, 2012).</td>
<td>2 tabs + 1 tab after sex</td>
</tr>
</tbody>
</table>
# Appendix B. Evidence Tables

## Table 1. Provider-Associated Barriers in AYA PrEP Use

<table>
<thead>
<tr>
<th>Author</th>
<th>Type of Evidence and Statistical Tools Utilized</th>
<th>Study Findings</th>
<th>Limitations</th>
</tr>
</thead>
</table>
| 1) Hart-Cooper et al, 2018 | Non-experimental Quantitative Study Cross-sectional online survey Descriptive analyses used to examine independent variables and outcomes (willingness to prescribe PrEP):  
  - Means and SD (continuous variables)  
  - Frequencies or Percentages (categorical and ordinal variables)  
  Inferential statistics used using Stata IC 13.2:  
  - Univariate and multivariate binary logistic models – to predict willingness to prescribe PrEP | Nearly all providers had heard of PrEP (93.2%) and a third (35.2%) had prescribed PrEP.  
Almost all providers agreed that PrEP prevents HIV but fewer were willing to prescribe PrEP to young adults (77.8%) or adolescents (64.8%)  
Willingness to prescribe PrEP strongly associated with belief that:  
1) Providers had enough knowledge to safely provide PrEP to adolescents (OR 2.11, CI: 1.18-3.76, p≤.01 and young adults (OR 5.19, CI: 2.15-12.50m P.001)  
2) Adolescents would be adherent (OR 3, CI: 1.30-6.90, p=0.01) | Low response rate and therefore possible sample bias.  
More respondents were adolescent-medicine trained; therefore might be more willing to prescribe PrEP compared to most adolescents’ providers |
<table>
<thead>
<tr>
<th>Evidence Rating:</th>
<th>Patient-level barriers:</th>
<th>Evidence Rating:</th>
<th>Patient-level barriers:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level III, Quality B</td>
<td>1) General lack of awareness of PrEP among AYA patients, especially those who might benefit from taking it 2) Lack of clarity among AYA on policies about PrEP, parental permission, and confidentiality;</td>
<td>Level</td>
<td>Small sample size but high response rate; findings provided the basis for pilot data Recruitment of participants through a single research network No assessment of the composition of clinicians’ practices concerning patient risk categories (e.g. clinicians may not have had many homosexual or bisexual patients)</td>
</tr>
<tr>
<td>Sample Size: 56 clinicians</td>
<td>Clinicians had greater intention to prescribe PrEP to adults compared with adolescents Decreasing perceived provider-level barriers and barriers related to PrEP use in patients younger than 18 was associated with improving access to PrEP for adolescents Cost of insurance was associated with decreased intention of PrEP prescription to youth More experience in non-occupational post-exposure prophylaxis (nPEP) was associated with actual prescription of PrEP Perceiving that multi-disciplinary teams and behavioral interventions are not necessary for PrEP delivery were associated with prescription intention and actual PrEP prescription</td>
<td>Date: Between January and April 2014</td>
<td>Small sample size but high response rate; findings provided the basis for pilot data Recruitment of participants through a single research network No assessment of the composition of clinicians’ practices concerning patient risk categories (e.g. clinicians may not have had many homosexual or bisexual patients)</td>
</tr>
<tr>
<td>Mullins et al, 2017</td>
<td>Non-experimental Quantitative Study (Internet-based Survey through SurveyMonkey) Descriptive analyses used to examine independent variables and outcomes (clinicians’ PrEP prescription intention and actual PrEP prescribing) Statistical analyses: *Sign test for paired data used to compare intention to prescribe to adults versus adolescents *McNemar’s test used to compare actual prescription of PrEP to adults versus adolescents *Univariate and multivariate logistic regression models were used to examine independent variables associated with intention and actual prescription of PrEP</td>
<td>Non-experimental Qualitative Mixed-methods Study (Face-to-face and semi-structured phone interviews, open-ended questions) Clinicians’ perception of patient-level barriers: 1) General lack of awareness of PrEP among AYA patients, especially those who might benefit from taking it 2) Lack of clarity among AYA on policies about PrEP, parental permission, and confidentiality;</td>
<td>Non-experimental Qualitative Mixed-methods Study (Face-to-face and semi-structured phone interviews, open-ended questions) Clinicians’ perception of patient-level barriers: 1) General lack of awareness of PrEP among AYA patients, especially those who might benefit from taking it 2) Lack of clarity among AYA on policies about PrEP, parental permission, and confidentiality;</td>
</tr>
<tr>
<td>Sample Size: 15 clinicians</td>
<td>Descriptive analyses using five-step framework analysis approach (familiarization, identification of thematic frameworks, indexing, charting, mapping, or interpretation) and employing NVivo (version 10)</td>
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<td></td>
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</tr>
<tr>
<td>Date: Between October 2, 2012 and April 23, 2012</td>
<td>Data analyses of barriers categorized in four levels: patients, providers, organizations or systems, and community-level.</td>
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<tr>
<td></td>
<td>patients were unaware that PrEP is classified as protected confidential care for adolescents</td>
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<tr>
<td></td>
<td><strong>Provider-level barriers include:</strong></td>
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</tr>
<tr>
<td></td>
<td>1) Concerns about PrEP adherence by patients, and PrEP monitoring visits, including viral resistance development due to incomplete adherence</td>
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<tr>
<td></td>
<td>2) Concerns about risk compensation; for example, the concern that patients might participate in riskier behaviors such as unprotected sex because they felt protected from HIV infection</td>
<td></td>
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</tr>
<tr>
<td></td>
<td><strong>Concerns of prescribing to youth under 18:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) Maintaining confidentiality</td>
<td></td>
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<tr>
<td></td>
<td>2) PrEP as a controversial therapy and possible negative publicity when prescribing PrEP in a pediatric practice</td>
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<tr>
<td></td>
<td>3) Side effects and toxicity (e.g. negative effects of PrEP on bone density, accrual in cells and tissues, and renal function)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Organizational and system-level barriers:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) High cost of PrEP, inadequate or lack of medical insurance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) Negative attitudes of colleagues</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3) Systems limitations</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>4) Lack of resources including clinic space, providers’ time, and adequate support staff</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>5) Access in the community: for example, clinicians through a single research network</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sample size relatively small</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evidence Rating: Level III, Quality B</td>
<td></td>
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<td>-------------------------------------</td>
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<td></td>
</tr>
<tr>
<td><strong>Sample Size:</strong> 15 clinicians</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Date:</strong> Between October 2, 2012 and April 23, 2012</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mullins, Lally, Zimet, Kahn, 2015</th>
</tr>
</thead>
</table>

Clinicians were somewhat or very familiar with the guidance on prescribing PrEP in heterosexual adults (9/15), and adult MSM (13/15). Clinicians described characteristics of people who would and would not be appropriate for PrEP, including:

1) presence of mental health illnesses or diagnoses, and/or 2) substance abuse issues. These are indicators of a person engaging in higher risk sexual behavior, with issues that could also negatively impact adherence to PrEP.

Use of PrEP thought to be appropriate for serodiscordant couples attempting pregnancy.

There were concerns about the period of potential infection during PrEP initiation.

Most clinicians reported that behavioral interventions such as counseling on sexual practices should be a necessary part of PrEP interventions.

Suggestions for PrEP delivery included: 1) condom use and safer sexual behaviors; 2) education on PrEP risks and benefit, adherence to PrEP; 3) substance

Recruitment of participants through a single research network but practicing in different clinical sites.

Limitation of results: Understanding of clinician attitudes, intentions, and practices were based on small sample size.

Study sample included those with experience prescribing PrEP. Clinicians who had
use avoidance, and 4) building or developing self-esteem not prescribed PrEP were not part of the study.
<table>
<thead>
<tr>
<th>Author</th>
<th>Type of Evidence and Statistical Tools Utilized</th>
<th>Study Findings</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perez-Figueroa, Farzana, Staci, Eddy, and Perry, 2015</td>
<td>Non-experimental Qualitative Interview followed by a Survey A semi-structured interview, included open-ended questions Participants recruited from the P18 study (parent study) Data interviews transcribed, coded, and analyzed using NVivo 10 (Welsh, 2002)</td>
<td>Three primary concepts: 1) Awareness of PrEP: • 50% were aware of PrEP • Some compared PrEP to birth control. • Despite awareness, participants (i.e. potential patients) expressed hesitation about PrEP use. • The majority expressed a desire for more information about PrEP. Questions include side effects, types of medications, active ingredients, odds of contracting HIV, and whether medication causes HIV. 2) Attitudes toward PrEP • PrEP is one of several strategies, another source of protection other than condoms • Condoms would be easier to remember than taking daily medication • Consistent condom use equally effective, if not more effective, than PrEP. • Adherence could be difficult in the long term. Concern about missing pills and getting HIV, developing immunity to PrEP, and side effects.</td>
<td>Not all the YMSM in the sample were at high risk for HIV. At the time of the interview, participants were enrolled in the parent cohort study for two years; these young men may have a better understanding of HIV prevention, affecting their views towards PrEP. Potential for (skewed) socially desirable responses because the assessment was administered by interviewers</td>
</tr>
</tbody>
</table>
| 2012 | • Cost of PrEP often voiced by YMSM of color.  
3) Social behavioral influences:  
• PrEP would provide a means of avoiding successful condom negotiation  
• Use of PrEP could justify not using condoms  
• The desire to engage in sex without a condom as a motivator for the adoption of PrEP.  
• The stigma of PrEP: a prevention strategy for those who engage in high-risk sexual behaviors or more frequent casual encounters  
• Relationship status: PrEP being seen as a trust and fidelity issue, taking PrEP could mean likely to have sex outside the main relationship.  
PrEP is protective if the partner is having sex outside of the relationship. |
|---|---|
| 6) Fisher, Fried, Desmond, Macapagal, Mustanski (2017) | Non-experimental qualitative surveys  
Descriptive analyses using frequencies, means, SD, and proportions were used for all survey responses.  
Chi-square and multivariate analyses of variance were performed to compare responses across gender identity and age  
Assessed the relationship between likelihood of PrEP adherence with  
• Half of the respondents said they would participate in a PrEP adherence study  
• Likelihood of PrEP adherence study participation significantly increased with the number of sexual partners, prior HIV or STI testing, prescription of HRT, the comfort of youth asking their MD about HIV prevention.  
• Interest in participation significantly decreased when the risk of HIV lessened.  
Regardless of age and gender identity:  
• About half of the participants were extremely or somewhat worried about the negative side  
The study was conducted anonymously, which may have affected the certainty of the inclusion criteria  
Sample predominantly non-Hispanic white  
The study may not have included youth from family-
from a national online survey of transgender youth; 90 TM and 60 TF, 45% under age 18

**Date:** Spring 2016

<table>
<thead>
<tr>
<th>Evidence Rating: Level III, Quality B</th>
<th>Sample Size: 78 participants were included in the analyses among 260 eligible</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Evidence</strong></td>
<td><strong>Sample Size:</strong> 78 participants were included in the analyses among 260 eligible</td>
</tr>
<tr>
<td><strong>Rating:</strong></td>
<td><strong>Date:</strong> Between August 2013 and September 2014</td>
</tr>
<tr>
<td><strong>Hosek et al. (2017)</strong></td>
<td><strong>Quasi-experimental</strong></td>
</tr>
<tr>
<td><strong>Participants were recruited through the clinical sites affiliated with ATN in person and online</strong></td>
<td><strong>Quasi-experimental</strong></td>
</tr>
<tr>
<td><strong>Demographic and risk characteristics of the study population were examined using descriptive analyses</strong></td>
<td><strong>Quasi-experimental</strong></td>
</tr>
<tr>
<td><strong>All analyses conducted using SAS, version 9.4.</strong></td>
<td><strong>Quasi-experimental</strong></td>
</tr>
<tr>
<td><strong>Fisher Exact Test used to examine bivariable relationships between study outcomes and categorical characteristics</strong></td>
<td><strong>Quasi-experimental</strong></td>
</tr>
<tr>
<td><strong>Wilcoxon rank sum test used to examine bivariable relationships between study outcomes and continuous characteristics</strong></td>
<td><strong>Quasi-experimental</strong></td>
</tr>
</tbody>
</table>

**Date:** Spring 2016

<table>
<thead>
<tr>
<th><strong>Effects of PrEP</strong></th>
<th><strong>The first study on the safety and implementation of PrEP among adolescents MSM</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>One-third of participants did not want to additional medication to their health regime</td>
<td><strong>The first study on the safety and implementation of PrEP among adolescents MSM</strong></td>
</tr>
<tr>
<td>One-third were concerned about getting to quarterly appointments</td>
<td><strong>The first study on the safety and implementation of PrEP among adolescents MSM</strong></td>
</tr>
</tbody>
</table>

| **Generalizability of the findings maybe limited due to small sample size and lack of participation from some ATN sites Pharyngeal swab testing and samples were not collected. Urine and rectal swabs were only obtained at 24 and 48 weeks. May have underestimated rates of STIs in the sample** | **Generalizability of the findings maybe limited due to small sample size and lack of participation from some ATN sites Pharyngeal swab testing and samples were not collected. Urine and rectal swabs were only obtained at 24 and 48 weeks. May have underestimated rates of STIs in the sample** |
| **Time and resources needed to conduct this study were** | **Time and resources needed to conduct this study were** |

| **One-quarter of participants did not want to additional medication to their health regime** | **One-quarter of participants did not want to additional medication to their health regime** |
| **One-third were concerned about getting to quarterly appointments** | **One-third were concerned about getting to quarterly appointments** |

| **One-third were concerned about getting to quarterly appointments** | **One-third were concerned about getting to quarterly appointments** |
| **The first study on the safety and implementation of PrEP among adolescents MSM** | **The first study on the safety and implementation of PrEP among adolescents MSM** |

| **Detectable TFV-DP drugs level in most participants throughout the study, 95% in first 12 weeks but declining levels of drugs thereafter** | **Detectable TFV-DP drugs level in most participants throughout the study, 95% in first 12 weeks but declining levels of drugs thereafter** |
| **No statistically significant associations between sex without condom use or receptive anal intercourse without condom use with last partner and TFV-DP levels over time** | **No statistically significant associations between sex without condom use or receptive anal intercourse without condom use with last partner and TFV-DP levels over time** |
| **In comparison with respondents with protective levels of TFV-DP, those without protective levels were more likely to endorse the statement, “I worry others will see me taking pills and think I am HIV-positive.”** | **In comparison with respondents with protective levels of TFV-DP, those without protective levels were more likely to endorse the statement, “I worry others will see me taking pills and think I am HIV-positive.”** |
| **Most common reasons for missing doses of PrEP were: 1) being away from home; 2) being too busy; 3) forgetting; 4) changes in routine** | **Most common reasons for missing doses of PrEP were: 1) being away from home; 2) being too busy; 3) forgetting; 4) changes in routine** |
| **There was a decreased in acceptability of pill size and taste from 12 weeks to 48 weeks among** | **There was a decreased in acceptability of pill size and taste from 12 weeks to 48 weeks among** |

Generalizability of the findings maybe limited due to small sample size and lack of participation from some ATN sites Pharyngeal swab testing and samples were not collected. Urine and rectal swabs were only obtained at 24 and 48 weeks. May have underestimated rates of STIs in the sample Time and resources needed to conduct this study were
<table>
<thead>
<tr>
<th>Study</th>
<th>Evidence</th>
<th>Sample Size</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8) Koss et al. (2018)</td>
<td>Non-Experimental</td>
<td>254 to 993 samples depending on criteria used</td>
<td>Between August 2013 and September 2014</td>
<td>McNemar test used when comparing binary measures between time points among participants. Study population substantial, may limit the ability to replicate findings in future clinical trials. Non-Experimental Demographic and risk characteristics of the study population were examined using descriptive analyses. Spearman correlation used to assess between pharmacologic (hair and DBS) and non-pharmacologic (self-report and Wisepill) measures. Adherence to PrEP waned over time among youth, particularly after week 12. Self-report of YMSM about using PrEP overestimates their actual adherence. Wisepill devices were provided to all study participants. Reasons for Wisepill non-openings (e.g., pocketed doses) were not collected. Participating YMSM were not asked their likelihood to use Wisepill in the future. Recall of pill-taking over preceding 30 days were measured based on self-report.</td>
</tr>
<tr>
<td>9) Holloway et al., 2017</td>
<td>Anonymous survey data analysis</td>
<td></td>
<td></td>
<td>Willingness to take PrEP was significantly associated with: 1) Time since last HIV test 2) Level of concern about becoming infected with Convenience sampling and the use of willingness as a primary outcome.</td>
</tr>
<tr>
<td>PrEP IN ADOLESCENTS AND YOUNG ADULTS</td>
<td>88</td>
<td></td>
<td></td>
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<td>--------------------------------------</td>
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</table>

**Rating:** Level III, Quality B

**Sample Size:**
762 participants included in the analyses
18-29 assigned male at birth, sexually active with other men in the last five years., HIV negative, and California residents

**Date:** Survey data collected online from July 9 to August 20, 2015

<table>
<thead>
<tr>
<th>population were examined using descriptive analyses</th>
<th>HIV</th>
<th>measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multivariate regression 3) Recent receptive condomless anal sex</td>
<td>4) Use of illicit drugs in the past six months</td>
<td>Participants were a self-selected group, may represent a bias towards those who are more interested in PrEP</td>
</tr>
<tr>
<td>5) HIV risk index score</td>
<td></td>
<td>Self-reported data may mean over or under reporting of willingness to take PrEP</td>
</tr>
<tr>
<td>YMSM unwilling to take PrEP had more concerns about stigma, drug effects, risk compensation, necessity, medical mistrust, adherence, and access/affordability.</td>
<td></td>
<td>The study may have missed essential issues for YMSM that influence willingness to take PrEP</td>
</tr>
<tr>
<td>Hispanic/Latino patients more likely than white to take PrEP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YMSM with medium and high concern for getting HIV were nearly twice as likely to be willing to take PrEP compared to YMSM reporting a low concern</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased medical mistrust associated with decreased willingness to take PrEP</td>
<td></td>
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<tr>
<td>Greater concern about adherence associated with lower willingness of PrEP intake. Higher scores on perceived benefits associated with higher likelihood of desire to take PrEP.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix C. Statement of Non-Research Determination Form

DNP Statement of Non-Research Determination Form
Student Name: IGOR G. MOCORRO, MPH, BSN, RN, PHN

**Title of Project:** Adolescents and Young Adults Comprehensive PrEP Education Project (AYA ComPrEP)

**Brief Description of Project:**

**A) Aim Statement:**

Goal: To improve HIV prevention in adolescents and young adults (AYA) by preparing clinicians and/or clinic staff to confidently provide PrEP services to this population

Aim: By April 2020, clinicians who participated in the training workshops will demonstrate increased knowledge and comfort to provide HIV prevention education services via a post training evaluation, and at least 80% will be ready to prescribe PrEP to at-risk AYA as demonstrated by actual prescriptions.

**B) Description of Intervention:**

Interventions of the AYA ComPrEP will include the creation of a comprehensive PrEP educational program with emphasis on PrEP and condom use initiation and prescription and condom use. An analysis of what constitutes an effective HIV and STI prevention program acceptable to AYA in the San Francisco Bay Area has been done in the previous year. The project interventions be divided in four major phases:

- **Screening Tools Development**

  1.1 Develop by January 2020 the risk assessment and screening tool for clinical staff to improve identification of AYA patients at substantial risk for HIV and increase provider offer of PrEP at CHPY clinics. This can be done by revising the existing STI screening tools of CHPY to include screening on risk of HIV infection based on available risk assessments such as the Clinical Practice Guideline of the CDC, and the PrEP Education for Youth-Serving Primary Care Providers Toolkit developed by the Sexuality Information and Education Council of the United States (SIECUS).

  1.2 Develop a model algorithm and screening protocol for implementing PrEP by January
by looking at policy in nursing algorithm, evidence-based practice and the recommendations of PrEP experts, clinicians, and staff.

1.3 Produce the AYA ComPrEP kits. These are bags that contain freebies and educational materials on PrEP and HIV prevention similar to the Quit Smoking Kit being distributed by the San Francisco Department of Public Health.

- **CHPY Staff and Providers Trainings and Seminars.**

2.1 Conduct the AYA ComPrEP training seminar for CHPY clinicians and staff by March 2020.

2.2 Implement the risk assessment and screening tool in at least 2 CHPY clinics by April 2020.

2.3 Create an online platform on PrEP, HIV and STI prevention that is accessible and user friendly for AYA patients March 2020.

- **Screening Tools and PrEP Protocol Implementation**

3.1 Implement the model algorithm (use of risk assessment and screening tool) in at least one CHPY clinic for 6-8 weeks by April 2020

- **Project Evaluation**

4.1 Evaluate the clinical staff and providers’ comprehension and comfort to initiate and prescribe PrEP

4.2 Evaluate the ‘AY ComPrEP’ by April/May 2020.

**C) How will this intervention change practice?**

This intervention will change practice by standardizing practice in CHPY clinics to improve clinicians and staff PrEP initiation and prescription to most-at-risk AYA patients, increase awareness and access of AYA patients to PrEP, and maintain 0% HIV infection rate among AYA patients on PrEP and condom use.

**D) Outcome measurements:**
Post-training evaluation for clinicians and staff by April 2020:
- At least 80% of the clinicians have increased knowledge and comfort to prescribe PrEP to its AYA patients
- At least 80% of the clinicians who attended the training workshop have will have:
  - Increased knowledge on HIV and PrEP
  - Increased in enabling or non-stigmatizing attitudes on HIV and PrEP
  - Used the guidelines (e.g. risk assessment tool and protocol) in practice or demonstrated in the case studies simulation; and
  - Stated increased comfort in prescribing PrEP to AYA patients after the implementation/simulation.

Post-AYA ComPrEP evaluation by April 2020:
- 100% of the providers or staff were using the risk assessment in every patient screening over the 6-8 weeks period. Clinicians were able to decide how to measure risk.
- 80% of the providers are satisfied with the implementation of the risk assessment and implementation of PrEP protocol (Feasibility of the risk assessment algorithm)

To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used:
(http://answers.hhs.gov/ohrp/categories/1569)

☐ This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Student may proceed with implementation.

☐ This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

Comments:

**EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST** *

**Instructions:** Answer YES or NO to each of the following statements:

<table>
<thead>
<tr>
<th>Project Title:</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>The aim of the project is to improve the process or delivery of care with established/accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>The specific aim is to improve performance on a specific service or program and <strong>is a part of usual care</strong>. ALL participants will receive standard of care.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>The project is <strong>NOT</strong> designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups,</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
cross-sectional, case control). The project does **NOT** follow a protocol that overrides clinical decision-making.

| The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does **NOT** develop paradigms or untested methods or new untested standards. | ✓ |
| The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does **NOT** seek to test an intervention that is beyond current science and experience. | ✓ |
| The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP. | ✓ |
| The project has **NO** funding from federal agencies or research-focused organizations and is not receiving funding for implementation research. | ✓ |
| The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., **not** a personal research project that is dependent upon the voluntary participation of colleagues, students and/or patients. | ✓ |
| If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: “This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board.” | ✓ |

**ANSWER KEY**: If the answer to **ALL** of these items is yes, the project can be considered an Evidence-based activity that does **NOT** meet the definition of research.

**IRB review is not required. Keep a copy of this checklist in your files.** If the answer to **ANY** of these questions is **NO**, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

**STUDENT NAME (Please print):**

**IGOR. MOCORRO, MPH, PHN, BSN, RN**

Signature of Student: ________________________________ DATE _02/15/2019_

**SUPERVISING FACULTY MEMBER (CHAIR) NAME (Please print):**

**PRABJOT SANDHU, DNP, FNP-C, PA-C, CNL**

Signature of Supervising Faculty Member (Chair): ________________________________ DATE ___________
### Appendix D. List of CHPY Clinics and Health Centers

<table>
<thead>
<tr>
<th>Community Clinics</th>
<th>Location</th>
<th>Services Offered Other Than Family Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Cole Street Clinic <em>Currently offering PrEP</em></td>
<td>Haight-Ashbury District</td>
<td>Primary, Urgent Care</td>
</tr>
<tr>
<td>2) Larkin Clinic <em>Currently offering PrEP</em></td>
<td>Tenderloin</td>
<td>Primary, Urgent Care</td>
</tr>
<tr>
<td>3) Dimensions Clinic</td>
<td>Castro-Mission</td>
<td>Primary Care</td>
</tr>
<tr>
<td>4) Hawkins Clinic</td>
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<td>5) ACAC HIV Specialty Clinic</td>
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<td>6) Third Street Clinic</td>
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<td>7) Special Program for Youth</td>
<td>Juvenile Justice Center</td>
<td>Primary, Acute</td>
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<td>8) New Generation Health Center</td>
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<td></td>
<td>Women’s Health</td>
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<tr>
<td><strong>School-based Clinics</strong></td>
<td></td>
<td></td>
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<tr>
<td>9) Balboa Teen Center</td>
<td>Balboa High School</td>
<td>Primary Care</td>
</tr>
<tr>
<td>10) Burton Teen Clinic</td>
<td>Burton High School</td>
<td></td>
</tr>
<tr>
<td>11) Willie Brown Middle School</td>
<td>Willie Brown Middle School</td>
<td></td>
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</tbody>
</table>
Appendix E. Letter of Support

September 2019

University of San Francisco
School of Nursing and Health Profession

To Whom It May Concern:

Community Health Program for the Youth (CHPY) of the San Francisco Department of Public Health is happy to approve the AYA COM PrEP Project from University of San Francisco, DNP-FNP student, Igor Mocorro. This project will include the following at Balboa Teen Health Center:

- Conducting consultations with CHPY management and staff, and doing in-depth one-on-one interviews to staff of the Balboa Teen Clinic regarding PrEP program/services.
- Using the electronic health record system of CHPY to perform a clinical data assessment and gap analysis for PrEP.
- Implement change in practice interventions for PrEP program at Balboa Teen Clinic
- Use the electronic health record system to evaluate the PrEP program.

The program will commence September 2019 and conclude by May 2020. We look forward to collaborating with you.

Sincerely,

Carol Taniguchi, PNP, MPH
Clinical Lead, CHPY

cc: Lori Kohler, MD – Medical Director, CHPY
Hi Balboa Teen Clinic folks!

I hope you are well and enjoyed the holiday. As you may know, former CHPY RN and current USF DNP student Igor Mocorro is working with CHPY on his doctoral project. His project aims to support school based health centers to increase PrEP services as a vital PrEP access point for youth.

As part of his project, he would like to briefly interview you all to learn more about opportunities and possible barriers to increasing PrEP services in a SBHC, like Bal.

I'll let Igor connect with you all directly to find a time that is least disruptive for him to come by.

thanks again!

adam

Adam Leonard NP, MPH, AAHIVS
San Francisco Department of Public Health
Nurse Practitioner | Youth HIV Prevention and Care Services Coordinator
Community Health Programs For Youth | San Francisco Health Network
Assistant Clinical Professor of Nursing, UCSF
he/him/his

Michael Baxter Larkin Street Youth Clinic (M/Tu/Th)
p: 415-673-0911 x 259 | f: 415-749-1032
Coe Street Youth Clinic (F)
p: 415-751-8181 | f: 415-831-4524
## Appendix F. Project Information for In-Depth Interview Participant

| Doctor of Nursing Practice – Family Nurse Practitioner |
| School of Nursing and Health Profession | University of San Francisco |

In partnership with the Community Health Program for Youth
San Francisco Department of Public Health

Adolescent and Young Adult Comprehensive PrEP Education Project (AYA ComPrEP)
By: Igor Mocorro, MPH, BSN, RN, PHN | USF DNP-FNP Cohort 2020

### PROJECT INFORMATION

#### A. Purpose and Nature of the Assessment

Under the supervision of Jodie Sandhu, DNP, FNP-BC, PA-C, and Stefan Rowniak, PhD, FNP-BC, Professors of the Doctor in Nursing Program of the University of San Francisco, and in partnership with the Community Health Program for Youth (CHPY) of the San Francisco Department of Public Health through its leadership Lori Kohler, MD, Carol Taniguchi, MSN, PNP-BC, and CHPY PrEP Champion/Coordinator Adam Leonard, MSN, PNP-BC, Igor Mocorro, MPH, RN, PHN, a student of the DNP-FNP of USF is conducting a needs assessment on the barriers and opportunities to support the creation of a school-based PrEP program for adolescents in San Francisco, particularly at Balboa Teen Clinic.

Ultimately, the main aim of this project is to increase our understanding of the needs of the clinic to support a successful school-based PrEP program to prevent HIV infections among adolescents/teens or students of Balboa High School and the clinic’s patients. The Community Health Program for Youth (CHPY) intends to use the information as a foundation for future endeavor in programmatic interventions on PrEP for adolescents. They will use data collected to design a PrEP educational program that will address the PrEP needs of AYA. There are a number of organizations campaigning for PrEP for adolescents and young adults; however, barriers to PrEP in school-based setting in particular have not been a primary focus.

You have been invited to participate because you are a member of the staff of a CHPY clinic who has expertise and knowledge about the current condition of the clinic for which you work. Also, you have connections with the patients whom we believe will benefit from the needs assessment and the AYA ComPrEP Project.

#### B. Procedures and Processes Involved in Participating

I would like to make it clear that your participation in this project is entirely voluntary. It is your choice whether to participate in it or not. If you choose to participate, you are also free not to answer any of the questions, and you can also decide to stop participating in the one-on-one interview at any time if you wish. However, we would greatly appreciate you letting us know the reason for not answering any question, or for withdrawing your participation, so that we can
improve our project methods.

In terms of the process, if you choose to participate in this study, I will set up an interview. I will be recording the interview discussion with your permission. The interview will include questions about barriers and opportunities to PrEP implementation in your clinic such as ones about existing protocols and algorithms. The interview will take no more than one hour and half.

By May 10, 2019, the report of my findings from this assessment will be complete. If you are interested, I am glad to send you the output of the project. You can also coordinate with the leadership of the Community Health Program for Youth for information on any future studies, projects, or programs that may come out of this assessment.

C. Confidentiality and Potential Risks of Participating in the Study

This project is taking every possible step to ensure confidentiality of any and all personal information on participants. I know that breaches of confidentiality could lead to problems for participants, so I have taken the following measures to avoid this from happening. 1) I do not write the name of the participant or his/her place of work (i.e. the in-depth who is providing us with information about his/her PrEP experiences in the clinic) on any paper that would allow someone to link the gathered information to him/her. 2) Names of participants and other identifying information will not appear in any published reports or presentations about this assessment. All forms used in this project will be stored in a locked cabinet or cupboard to which only the project team/committee has access. These data will be destroyed as soon as they are no longer needed.

D. Discomfort that you might experience as a participant

The interview includes questions that may make you feel uncomfortable at times, and it may bring up topics that are difficult to talk about. It is not my intention to make you uncomfortable. I want you to know that you do not have to answer any question or take part in the interview at all if you feel the questions are overly personal or if talking about the topic makes you uncomfortable.

E. Potential Benefits for you and the community in relation to your Participation

There will be no direct benefit to you for participating in this study. However, I hope that your involvement will be interesting for you, as it might shed some light on some issues/concerns you may have, and also on rewards that you experience in working at this clinic. I also hope that you will learn from the interview process and from any discussions, which may arise as a result of doing it. Through these interviews with the staff members of the clinic, we hope to be able to gather rich and valuable information that will assist CHPY and other local and national efforts to understand the needs of adolescents and young adults in school-based setting to access PrEP services and HIV education for the prevention of HIV.

F. Cost and Compensation

There will be no cost for you to participate in this research. If you decide to participate in the
study, I will provide you with a gift card as an appreciation of your time and effort.

**G. Alternatives**

You are free to choose not to participate in this project without any effect on your future status with USF and CHPY.

**H. Questions**

You have spoken to me Igor Mocorro, a DNP-FNP student of USF. I would like to make sure that you are voluntarily willing to participate in this quality improvement project assessment and that you have obtained all the information that you need in order to make an informed choice about your participation. If this information sheet contains words that you do not understand please ask me and I will take time to explain. You do not have to decide today whether or not you will participate in the interview. Before you make a decision, you can talk to anyone you would like to about doing this interview.

If you have any further questions about this assessment that I cannot answer or you have comments or complaints about the interview, you may contact my professors Jodie Sandhu at pksandhu@usfca.edu, and Stefan Rowniak at srrowniak@usfca.edu.

**CONSENT**

You have been given a copy of the information sheet and participation form to keep.

**PARTICIPATION IN THIS QI PROJECT ASSESSMENT IS VOLUNTARY.** You are free to decline to participate in assessment, or to withdraw your participation at any point, without penalty. Your decision about whether or not to participate in this process will have no influence on your present or future status at the University of San Francisco, and the Community Health Program for the Youth.

I have read and understand the information on the information sheet, or it has been read to me. I have had the opportunity to ask questions related to this assessment, and any questions I have asked have been answered to my satisfaction. I voluntarily participate in this project and understand that I have the right to end the interview at any time.

Signature/initial of participant: ________________________________
Signature/initials of interviewer: ________________________________
Date of interview: ________________________________
Date of interview: ________________________________
Appendix G. In-Depth Interview Questionnaire

Doctor of Nursing Practice – Family Nurse Practitioner  
School of Nursing and Health Profession | University of San Francisco  

In partnership with the Community Health Program for Youth  
San Francisco Department of Public Health  

Adolescent and Young Adult Comprehensive PrEP Education Project (AYA ComPrEP)  
By: Igor Mocorro, MPH, BSN, RN, PHN | USF DNP-FNP Cohort 2020

| CODE: __________________________________________________ |
| Place/location: ___________________________________________ |
| Date and Time: ___________________________________________ |
| Survey Questionnaire Facilitator: ___________________________ |

Assessment Tool:
In-Depth Interview for CHPY Staff

Introduction

Good morning/afternoon. I would like to thank you for taking the time to meet with me and to share your opinions and expertise on this subject. My name is Igor Mocorro. I am a graduate student in the Doctor of Nursing Practice – Family Nurse Practitioner at the University of San Francisco. I am working with the Community Health Program for the Youth (CHPY) on this project.

I believe that you have received the information of this project ahead of time/before this meeting. If you have any questions, we can talk about them while we go through the Study Information and Participation forms. I will need to get your agreement before I start the interview and make sure that all of your questions and concerns are addressed.

Briefly discuss with the interviewee the Study Research Information/Participation Forms and obtain their agreement to proceed with the interview.

I understand that you may need to take a break from the interview. Please don't hesitate to let me know if you need that. Do you have any questions before I start?

I also just wanted to let you know that I look at PrEP as a pill to take daily; an effective preventive tool for HIV infection for people who are at risk of HIV infection. Currently, tenofovir disoproxil fumarate (TDF) and emtricitabine (FTC) also known as Truvada™ is the only pharmaceutical interventions in oral form that shown in clinical trials to prevent HIV transmission that has approval by the FDA, including to adolescents. Do you have any questions
before we start?

Questions:

I. Introduction

1. How long have you been working in this clinic or with CHPY?
2. How would you describe your overall experience working at CHPY?
3. Please describe how you feel about the care being provided at this clinic or at CHPY in general.
4. How do you feel about the PrEP services, resources and programs offered at CHPY?

II. General Attitude about HIV and PrEP

1. What do you think of HIV and AIDS?
2. In what way do you think HIV and AIDS affects the lives of adolescents and young adults?
3. What do you think about PrEP?
4. What are your views about adolescents taking PrEP?
5. To what extent do you feel comfortable discussing sexuality, sexual health, HIV, and HIV prevention services such as PrEP with your clients or patients? Why? Why not?
6. To what extent do you feel comfortable discussing HIV and PrEP in a school-based setting?

III. Experiences of PrEP

1. How do staff or clinicians here approach patient’s HIV risk?
   a. Please explain how important is it for you to screen every patient on HIV risk.

2. With regard to PrEP services, do you think adolescents are treated differently?
   a. And if so how?

3. What do you appreciate about the current HIV prevention services offered at CHPY?
   a. What, if any, policies/regulations/practices regarding HIV prevention and PrEP at CHPY seem to work well?

4. What challenges/problems if any have you found in providing HIV prevention services at CHPY? How about with PrEP?

IV. Programs and Services

1. If you identify a client who is at risk for HIV infection in this clinic, what do you usually do? What opportunities would you have to help the client reduce his/her risk?
   a. What sort of support from colleagues is available for you?
b. What might the barriers be in developing a PrEP Program in this clinic?

2. What information or educational programs have been provided to clients or patients in this clinic about HIV and AIDS? How about PrEP?
   a. Have you participated in any of these programs? Why or why not?
   b. Has the clinic informed clients about their risk?

3. How available are safer sex supplies such as condoms and lubrication here in this clinic?

4. What type of prevention materials such as pamphlets, flyers, posters, videos, or websites do you think you are allowed to provide to clients in this clinic?
   a. Would you feel comfortable having or using such things here in this clinic?

5. Would you know what to say to a client who experiences side effects from taking PrEP?

6. Would you know what to do if a client decided to stop his/her PrEP intake?

V. Moving Forward/ Conclusion

1. What general changes could be implemented in the facility to better support your knowledge and skills of HIV prevention, particularly on PrEP?
   1. What could the CHPY management or leadership do to better support your PrEP services in this clinic?
   2. What facility policies could be implemented to better support PrEP for adolescents in this clinic?

Closing
< Summary of interview outcomes >.

In the next few weeks, we will be analyzing the data from this and the other interviews we are conducting with other staff. Would it be alright for me to contact you if I have further questions? Likewise, if you are interested in getting a recording of this interview, we can send it to you. As an appreciation of your time and efforts participating in this study, I have some educational/informational materials for you (or other incentives, etc.).

I will be designing a program plan and implement by Spring 2020. The product of this assessment and project will be presented to USF by May 2020 and to CHPY as well. If you are interested in learning about the outcome of this assessment and the project, please let me know.

Thank you again for your participation in this project. The information you provided will be very useful as we move forward with PrEP implementation at Balboa Teen Clinic. If you need to contact me, please feel free to do so at any time. I wish you good health and a happy life.
### Appendix H. Results of In-Depth Interviews

| Demographics and Introduction | n= 9 staff participated in the in-depth interviews, all works at Balboa Teen Health Center  
6 participants were CHPY staff  
3 participants were SFUSD staff |
|-----------------------------|----------------------------------------------------------------------------------|
| Attitudes about HIV and PrEP | • All participants wanted to have PrEP services available at Balboa Teen Health Center.  
• Everyone was excited about the project. Everyone believed that bringing PrEP to Balboa will increase awareness  
“In high school, you want young people to have that sense of self care and be proactive about their health.”  
“I am concerned about students, we show them the AIDS quilt but young people do not understand.... Risky behaviors start to increase because some students, their education have gaps of this HIV information.”  
“We have a parent who called us asking about why we provide birth control to her daughter. It was hard. It could be the same problem with PrEP.”  
“The thought that this will be the first school-based PrEP in California, one of the firsts in the United States and countries in the world, excites me.” |
| Experiences about PrEP       | • 2 out of 9 clinic staff and team members attended a training on PrEP previously  
• Others learned about PrEP through TV ads, word of mouth, meetings |
| PrEP Program & Services at Balboa Clinic | • Each team member has a role to take in this initiative. There is a need to clarify or communicate roles.  
• There is a disconnect between PrEP navigator & clinic staff  
• HIV screening & confidentiality –Staff were aware of their roles in screening, education, counseling, monitoring/follow-up  
• Clinic members voiced out the need for materials on PrEP for AYA for teachers, staff, students, and patients.  
“We [CHPY & SFUSD] have a great partnership. I am glad that DPH is here.”  
“I feel I am in the outside but I am willing to learn and be a part of this initiative.” |
| Suggested Changes and Conclusions | • Staff members needed education, training, and workshop both for first timer and as a refresher for those who had a PrEP training previously before seeing patients in the clinic for PrEP outreach, education/counseling and PrEP prescription;  
• The clinic need good outreach and dissemination strategies to reach communities and potential patients of PrEP services in Balboa  

“We had resistant from some people. If somebody tested positive, what do we do with that? At what point can we educate the student enough to have safe communication to bring parents to the conversation.” |
## Appendix I. AYA ComPrEP Project Gantt Chart

<table>
<thead>
<tr>
<th>Activity</th>
<th>Activity Start</th>
<th>Activity Complete</th>
<th>% Complete</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
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<tr>
<td><strong>PROJECT DEVELOPMENT</strong></td>
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<tr>
<td>Evidence Research</td>
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<tr>
<td><strong>INTERVENTION DEVELOPMENT &amp; PLANNING</strong></td>
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<td>In-Depth Interviews</td>
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<td>Feb 2020</td>
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<td>Creation of AYA ComPrEP kits/binders</td>
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<td>Creation of PrEP training and workshop modules</td>
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<td>Evaluation of training and education</td>
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</table>
Appendix J. Work Breakdown Structure

1.0 Design
   1.1 Develop Project Scope
   1.2 Needs Assessment/Gap Analysis
   1.3 Develop Objectives
   1.4 Identify Key Stakeholders
   1.5 Develop Project Charter
   1.6 Submit Project Charter

2.0 Plan
   2.1 Identify Project Team
   2.2 Discussion of Roles
   2.3 Develop Project Plan
   2.4 Develop WBS
   2.5 Develop Surveys
   2.6 Prepare Staff Training Protocol

3.0 Intervention
   3.1 Feasibility Analysis
      3.1.1 Site Survey
      3.1.2 Review/Observation of Clinic Workflow
      3.1.3 In-depth interviews
   3.2 Review and Develop Screening Tools, Protocols, and Algorithms
   3.3 PrEP Training Workshop
      3.3.1 Module 1
      3.3.2 Module 2
      3.3.3 Module 3
      3.3.4 Module 4
   3.4 Identify Funding Sources

4.0 Results
   4.1 Present Results of Assessment to CHPY and Balboa Teen Health Center Staff
      4.1.1 Analyze Survey Findings
      4.1.2 Summarize Findings

5.0 Evaluation
   5.1 Identify Results of Knowledge, Attitudes, and Confidence to Prescribe PrEP
   5.2 Review Training Feedback
   5.3 Write Final Report
   5.4 Dissemination
      5.4.1 DNP Paper
      5.4.2 DNP Presentation
### Appendix K. Communication Matrix

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Project Role</th>
<th>Item/Event</th>
<th>Special Instructions</th>
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<tbody>
<tr>
<td>Lori Kohler, MD</td>
<td>Authorization</td>
<td>Change in practice approval</td>
<td>Review and approve project and screening tool intervention</td>
</tr>
<tr>
<td>Carol Taniguchi, NP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DNP Chairs: Dr. Prabjot Sandhu, DNP committee: Dr. Stefan Rowniak</td>
<td>Authorization, guidance, critique and assessment of implementation and evaluation.</td>
<td>DNP project approval</td>
<td>Assist and support with development and approval of DNP project.</td>
</tr>
<tr>
<td>DNP Committee</td>
<td>Supervision and guidance of project</td>
<td>Change in practice: HIV risk screening protocol</td>
<td>Provide supervision, assistance, and support for development of project.</td>
</tr>
<tr>
<td>DNP author/Project manager: Igor Mocorro</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EHR system consultant, clinical data specialist, and USF health informatics student intern</td>
<td>EHR system navigation</td>
<td>Baseline clinical data assessment, electronic screening tool</td>
<td>Assist with use of EHR system to conduct baseline clinical data assessment, and with integration of the screening tool into the EHR.</td>
</tr>
<tr>
<td>PrEP case manager</td>
<td>Intervention design</td>
<td>Change in practice</td>
<td>Provide input for designing appropriate HIV-risk screening protocol.</td>
</tr>
<tr>
<td>Gilead Sciences assistant director of medical sciences for the West Coast region, and local representative</td>
<td>Intervention design</td>
<td>Change in practice</td>
<td>Provide input for designing appropriate HIV-risk screening protocol.</td>
</tr>
<tr>
<td>San Francisco City Clinic</td>
<td>Intervention design</td>
<td>Change in practice</td>
<td>Provide input for designing appropriate HIV-risk screening protocol.</td>
</tr>
<tr>
<td>City Wide PrEP NP</td>
<td>Intervention design, clinical staff education, and potential dissemination</td>
<td>Change in practice</td>
<td>Provide input for designing appropriate HIV risk screening protocol, assist with clinical staff education, and potentially disseminate protocol to other primary care clinics in SF.</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Clinic providers and staff (MD, NPs, RNs, MAs, clinic operations manager, director of nursing)</td>
<td>Intervention recipients</td>
<td>Change in practice</td>
<td>Learn and follow HIV-risk screening protocol to increase identification of patients at risk for acquiring HIV and increase provider offer of PrEP.</td>
</tr>
</tbody>
</table>
## Appendix L. SWOT

<table>
<thead>
<tr>
<th><strong>Strengths</strong></th>
<th><strong>Weaknesses</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Compassionate and culturally sensitive environment</td>
<td>• No standardized protocols</td>
</tr>
<tr>
<td>• Small organizational size</td>
<td>• Many changes to clinic workflow</td>
</tr>
<tr>
<td>• FPACT reimbursement</td>
<td>• High rate of clinical staff turnover</td>
</tr>
<tr>
<td>• Patient population represents at-risk population eligible for PrEP</td>
<td></td>
</tr>
<tr>
<td>• Chief medical officer and lead provider support</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Opportunities</strong></th>
<th><strong>Threats</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• At-risk patient population</td>
<td>• Potential patient refusal of PrEP</td>
</tr>
<tr>
<td>• FDA approval of Truvada as PrEP for adolescents</td>
<td>• Cultural stigma</td>
</tr>
<tr>
<td>• EHR changing from eCW to Epic in 2019</td>
<td>• Financial cost of PrEP</td>
</tr>
<tr>
<td>• Mutual goal to improve patient outcomes in HIV prevention</td>
<td>• Low HIV risk perception</td>
</tr>
<tr>
<td>• Opportunity for CHPY and SFDPH leadership in conjunction with new initiative: <em>Getting to Zero San Francisco</em></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix M. AYA ComPrEP Budget Summary

### Cost to Implement the AYA ComPrEP

<table>
<thead>
<tr>
<th>Staff leader for implementation</th>
<th>Estimated hourly wage of project manager (FTE)</th>
<th>Number of hours anticipated to be spent on project implementation</th>
<th>Subtotal cost (FTE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager</td>
<td>$42.52</td>
<td>100</td>
<td>$4,252.00 (WAIVED)</td>
</tr>
<tr>
<td>In-Depth Interviews Gift Cards</td>
<td>$30</td>
<td>9 interviews</td>
<td>$270.00</td>
</tr>
<tr>
<td>PrEP Kits/Binder</td>
<td>$20.00 Cost per Kit</td>
<td>15 kits</td>
<td>$300.00</td>
</tr>
<tr>
<td>Evaluation Tools</td>
<td></td>
<td></td>
<td>$90.00</td>
</tr>
<tr>
<td><strong>Estimated cost</strong></td>
<td></td>
<td></td>
<td><strong>$660.00</strong>²</td>
</tr>
</tbody>
</table>

2. Fund taken from the scholarship received from Jonas.
Appendix N. Cost-Benefit Estimate

<table>
<thead>
<tr>
<th>HIV management costs</th>
<th>HIV PrEP (Benefits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated HIV management lifetime cost: $480,000</td>
<td>Estimated PrEP cost: $13,000 per patient per year</td>
</tr>
<tr>
<td>Annual: $20,000+ per year</td>
<td></td>
</tr>
<tr>
<td>Estimated total cost of HIV management for 5 years: $100,000</td>
<td>Estimated total cost of PrEP for 5 years: $65,000</td>
</tr>
</tbody>
</table>


3. Take a medical, sexual, substance use history and review of symptoms

Check for:
- HIV exposures in the prior 72 hours; if present, offer post-exposure prophylaxis (PEP): ebgtz.org/resource/pep-guide
- Recent symptoms of a mono-like illness (fever with sore throat, rash or headache); if present, test for acute HIV (order an HIV RNA PCR viral load and an HIV 4th generation Ag/Ab test) and consider deferring PrEP until test results are back.
- Any history of renal disease, liver disease, or osteoporosis, which impacts which PrEP agent is selected. Please see page 3.
- Willingness and ability to take a medication on a schedule and return for regular appointments and labs while taking PrEP.

4. Obtain baseline testing

**HIV test:**

- **HIV antibody test** (4th gen Ag/Ab recommended)
- +/- HIV RNA test

  All patients need a negative HIV antibody test (4th generation Ag/Ab recommended) prior to initiation of PrEP. In patients with acute HIV symptoms or who report a possible HIV exposure in the last month, test with both an HIV RNA PCR viral load and an HIV 4th generation Ag/Ab test. If the patient has confirmed positive result, disclose and start HIV treatment or refer to an HIV provider as soon as possible; Truvada® or Descovy® alone is inadequate therapy for HIV infection.

**Serum Creatinine**

  (e.g. as part of a basic or complete metabolic panel)

  Estimated GFR or CrCl by serum labs should be ≥60 ml/min (Cockcroft-Gault) to safely use Truvada® and ≥30 ml/min to safely use Descovy®. An [online calculator](https://tinyurl.com/CrClcalculator) can be found here.

**Hepatitis B surface antigen (HBsAg)**

  Truvada® and Descovy® are active against hepatitis B virus (HBV). Patients with chronic HBV can use either agent for PrEP but should have liver function tests monitored regularly during PrEP use and after discontinuing PrEP; hepatitis can flare if PrEP is discontinued. Patients who are HBsAg negative should be offered HBV vaccination if not previously infected or immunized.

**Hepatitis C antibody**

  Determine baseline hepatitis C infection status and obtain repeat testing at least yearly among MSM, PWID and others with ongoing exposures.

**STIs (based on sexual exposures)**

  Test patients on PrEP for syphilis and for urethral, rectal, and pharyngeal GC and CT based on reported exposure routes (not based on gender/sexuality) every 3 months. Consider using self-collected swabs for GC/CT testing. Consider offering the HPV and hepatitis A virus (HAV) vaccines if not previously vaccinated.

**Pregnancy test**

  (when appropriate)

  People who can become pregnant (reproductive-age cisgender women, some transgender men and non-binary people) should receive a pregnancy test and have contraception plans reviewed. In patients trying to conceive, PrEP should be coordinated with prenatal care with attention to the patient’s reproductive and breastfeeding plans. Descovy® is NOT approved for use as PrEP in this population. Perinatal HIV/AIDS consultation is available at 888-448-8765.

5. Initiate PrEP

If there are no contraindications and the patient wants to use PrEP, PrEP can be initiated:

- **Same-day PrEP prescriptions are encouraged when possible.** The California Office of AIDS and Pacific AIDS Education and Training Center strongly encourage writing a prescription and starting PrEP on the same day a patient comes in for consultation when:
  - the patient has a negative HIV test within the last 2 weeks and no HIV exposures since this test,
  - all laboratory testing is obtained that day, and
  - the patient has no symptoms of acute HIV infection.

  If it has been more than 2 weeks since baseline labs were obtained, repeat an HIV test and start PrEP the same-day while awaiting results of the repeat HIV test.

- **To transition from PEP to PrEP,** check an HIV 4th gen Ag/Ab test while on week 4 of PEP and prescribe PrEP so the patient can start PrEP the day after PEP is completed. Confirm that the HIV testing done during week 4 of PEP is negative.
### 6. Select PrEP Medication

There are two agents FDA-approved for PrEP, Truvada® and Descovy®, which are both safe and highly effective in clinical trials. There were no differences in adverse clinical outcomes such as broken bones or heart disease between people taking either drug. Choice may be limited by insurance coverage; Medi-Cal covers both.

<table>
<thead>
<tr>
<th>PrEP medication</th>
<th>Truvada®</th>
<th>Descovy®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenofovir disoproxil fumarate 300 mg + Emtricitabine 200 mg (F/TDF)</td>
<td>Tenofovir alafenamide 25 mg + Emtricitabine 200 mg (F/TAF)</td>
<td></td>
</tr>
</tbody>
</table>

| Indications | Truvada® is approved for use for all adults and adolescents ≥35 kg with indications for PrEP. | Descovy® is approved for use for adults and adolescents ≥35 kg at risk for sexually acquired HIV, **excluding** individuals at risk only from receptive vaginal/front hole sex or only from injection drug use. |
| Dosing | 1 pill once daily unless using a PrEP 2-1-1 schedule | 1 pill once daily |

**“On-Demand” PrEP: 2-1-1 dosing**

Note that while there is substantial published data supporting this strategy for MSM, it has not been reviewed by the FDA or recommended by the CDC. The International AIDS Society of the US (IAS-USA), World Health Organization (WHO), and European AIDS Clinical Society (EACS) all endorse the option of this dosing strategy.

- **2-1-1 for MSM with anal exposures only:**
  2 pills 2-24 hours before anal sex
  - then 1 pill 24 hours after first dose
  - then 1 pill 24 hours after second dose.
  - If there is another exposure within 7 days of the last dose, take 1 pill 2-24 hours before anal sex, then 1 pill 24 hours after first dose, then 1 pill 24 hours after second dose.
  - If there are continued daily sexual exposures, continue 1 pill daily until 48 hours has passed since last sexual encounter.

For a detailed 2-1-1 guide, go to: tinyurl.com/HIVPrEP211.

| Side effects | Generally safe and well tolerated
|--------------|----------------------------------|
|              | • Headache (7%) and abdominal discomfort (3%), which often resolve in a few weeks
|              | • Small decrease in eGFR, which improves upon discontinuation of Truvada®
|              | • Slightly decreased bone density, but no increased risk of fractures
| Other notes  | Generally safe and well tolerated
|--------------|----------------------------------|
|              | • Abdominal discomfort, nausea (5%) and headache (2%), which often resolve in a few weeks
|              | • Small increase in LDL cholesterol
|              | • Slight increase in body weight

| Other notes  | Estimated GFR or CrCl by serum labs should be ≥60 ml/min (Cockcroft-Gault) to safely use Truvada®.
|--------------|---------------------------------------------------------------|
|              | A generic form of Tenofovir disoproxil fumarate + Emtricitabine (F/TDF) is anticipated in October 2020.
|              | Estimated GFR or CrCl by serum labs should be ≥30 ml/min (Cockcroft-Gault) to safely use Descovy®. |

- Provide adherence counseling and anticipatory guidance about common side effects.
- Discuss patient strategies for daily adherence.
- Counsel patients on risk reduction using condoms with PrEP to decrease transmission of STIs.
7. Monitor and provide ongoing support for patients using PrEP

Monitoring recommendations are currently identical for Truvada® and Descovy® as well as for people using 2-1-1 dosing.

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 days after initiation</td>
<td>• Assess for:</td>
</tr>
<tr>
<td></td>
<td>» Side effects and patient interest in continuing.</td>
</tr>
<tr>
<td></td>
<td>» Adherence: link to regular habits, set reminders, reinforce importance of dosing schedule, and address any challenges the patient has faced.</td>
</tr>
<tr>
<td></td>
<td>» Ongoing risk: provide risk reduction counseling.</td>
</tr>
<tr>
<td></td>
<td>» Signs and symptoms of acute HIV infection.</td>
</tr>
<tr>
<td></td>
<td>• Prescribe an additional 60-day supply with no refills.</td>
</tr>
<tr>
<td>Every 3 months</td>
<td>• At visit: adherence and risk reduction counseling.</td>
</tr>
<tr>
<td></td>
<td>• HIV test: 4th generation antigen/antibody test preferred.</td>
</tr>
<tr>
<td></td>
<td>• Serum Creatinine: stop if eGFR declines.</td>
</tr>
<tr>
<td></td>
<td>• STI screening: syphilis and for urethral, rectal, and pharyngeal GC and CT based on reported exposure routes (not based on gender/sexuality). Consider using self-collected swabs for GC/CT testing.</td>
</tr>
<tr>
<td></td>
<td>• Pregnancy test for appropriate patients.</td>
</tr>
<tr>
<td></td>
<td>• Prescribe a 90-day supply if HIV test negative at each visit.</td>
</tr>
<tr>
<td>Every 12 months or more often based on exposures</td>
<td>• Hepatitis C antibody, particularly for MSM and PWID.</td>
</tr>
</tbody>
</table>

8. What if my patient tests positive for HIV while on PrEP?

a. Discontinue PrEP to avoid development of HIV resistance

b. Start patient on HIV antiretroviral treatment as soon as possible in accordance with [HIV Treatment Guidelines](https://tinyurl.com/HIVTreatmentGuidelines), and/or facilitate a warm hand-off referral to an HIV provider immediately.

c. For questions and support, call the [National HIV Clinicians Consultation Center](tel:800-933-4313): 800-933-4313.

d. Order HIV genotype and document results.

e. Report the test result to your local health department.

9. PrEP coverage options:

- **Insured patients**
  - Prior authorizations (PAs) for Truvada® are no longer allowed in California after January 2020.
  - Many [private insurers](https://www.gilead.com/medicare) cover PrEP.
  - Adolescents covered on their parents' plan can keep their info confidential by signing up at [myhealthmyinfo.org](https://myhealthmyinfo.org).
  - For Medi-Cal prescriptions, we recommend writing a note to the pharmacy to "bill the Medi-Cal HIV carve-out directly and not the managed-care plan" to ensure Medi-Cal coverage.
  - For adolescents, the Medi-Cal Minor Consent Program can help pay for PrEP/PEP and keep the services confidential.
  - ICD-10 codes for PrEP include:
    - Z20.6: Contact with and (suspected) exposure to human immunodeficiency virus [HIV]
    - Z20.2: Contact with and (suspected) exposure to infections with a predominantly sexual mode of transmission
    - Z71.7: Human Immunodeficiency Virus (HIV) counseling
  - If patient needs help with co-pays, the [Gilead co-pay assistance program](https://www.gilead.com/medicare) can provide co-pay assistance for up to $7,200 annually for either agent: [gileadadvancingaccess.com](https://gileadadvancingaccess.com) or 877-505-6986.
  - Other payment assistance programs are listed on the [Fair Pricing Coalition](https://www.gilead.com/medicare) website: [tinyurl.com/preppricingprogs](https://tinyurl.com/preppricingprogs)
  - The [California PrEP Assistance Program (PrEP-AP)](https://www.gilead.com/medicare) helps low income ≤500% Federal Poverty Line (FPL) insured patients pay for PrEP-related out-of-pocket costs, such as medical visits and labs, and also assists with Truvada® or Descovy® co-pays after the $7,200 Gilead benefit is exhausted: [tinyurl.com/prepap](https://tinyurl.com/prepap)
Uninsured patients

- The **Gilead Advancing Access** PrEP medication assistance program will provide monthly Truvada® or Descovy® deliveries to the patient or clinic at no cost for those without prescription coverage and who meet income guidelines (≤500% FPL).
  - Call 800-226-2056 for inquiries or to apply by phone, Monday-Friday, 6am-5pm PST
  - Fax the completed application and proof of income to 855-330-5478: tinyurl.com/GileadEnrollment
  - If approved, one bottle (30-day supply) will be available for pickup at any non-Kaiser pharmacy. For pickup, provide an ID, bin, group, or PCN number (provided by Gilead). Refills can be coordinated with the pharmacy.
  - Alternatively, medication bottles may also be shipped to a clinic in 3-14 days. A Gilead representative will call the provider before the 2nd bottle is sent to confirm refill if continuing to ship to clinic.
  - Patients must re-apply (i.e. resubmit proof of eligibility) every 12 months.
  - U.S. and undocumented residents are eligible. Social security numbers are not required. Proofs of income include: W2, 1040 tax return, 2 pay stubs from the last 90 days or letter stating monthly income. The letter stating monthly income should include the residence address and must be signed and dated but does not need to be notarized.
  - The **Ending the HIV Epidemic: Ready, Set, PrEP program** (getyourprep.com) will provide monthly Truvada® or Descovy® deliveries to the patient or clinic at no cost for those without prescription coverage regardless of income for up to 200,000 patients per year. Patients must provide proof of lack of prescription coverage, a recent negative HIV test result, and a current prescription for PrEP.
  - The **California PrEP-AP program** (tinyurl.com/prepap) serves uninsured low-income patients (≤500% FPL) as a payer of last resort for PrEP-related medical costs (e.g. labs, visits, STI treatment) and must be used in conjunction with the Gilead Patient Assistance Program. Patients are not required to use the Ready, Set PrEP program before enrolling in CA PrEP-AP.

**Have questions?**

The national HIV PrEPLine for clinicians provides guidance on PrEP: 855-448-7737

Go to PleasePrEMe for a location-responsive California PrEP provider directory, online chat navigation in English and Spanish, and many resource pages including for patients, providers, youth, trans and non-trans women: pleaseprepmo.org

Further information about PrEP can be found at:

- PleasePrEMe **PrEP Navigator Manual**: pleaseprepmo.org/prepnavigatormanual
- CDC website: cdc.gov/hiv/risk/prep/index.html
- **San Francisco City Clinic’s website**: sfcityclinic.org/services/prep.asp

**Authors:** Stephanie Cohen, MD, MPH; Samali Lubega, MD; Philip Peters, MD; Sophy S. Wong, MD

**Contributors:** Al Liu, MD, MPH, Karen Mark, MD, Eric Tang, MD, Christine Kibui, Alan McCord, Shannon Weber, Laura Lazar, Juliet Stoltey, MD, Juliana Grant, MD, Adrian Barraza, Betsy Cialino, Robert Grant, MD, Shrey Goel, David Gonzalez, Jessica Bloome, MD, Monica Hahn, MD

**Design:** Querido Galdo

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**Feedback/questions:** paetcmall@ucsf.edu
Appendix P. PrEP Tool – San Francisco Department of Public Health

What is PrEP?

- PrEP is a once-daily pill for HIV-negative individuals that can help prevent HIV transmission.
- PrEP is FDA approved as a combination, fixed-dose antiretroviral medication called Truvada®.
- No significant health effects have been observed among individuals who have taken PrEP for up to 5 years.

PrEP is safe and can reduce the risk of HIV by more than 90%.

Who may benefit from PrEP?

- Men who have sex with men (MSM)
- People who inject drugs
- Trans women
- Heterosexual men and women with partners with or at risk for HIV
- Anyone who self-identifies a need for PrEP

PrEP is an opportunity to reduce HIV disparities

African American and Latino males in San Francisco are at disproportionate risk for HIV.

<table>
<thead>
<tr>
<th>MALES</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>140</td>
<td></td>
</tr>
<tr>
<td>Latino</td>
<td>83</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>52</td>
<td></td>
</tr>
</tbody>
</table>

Rate of new HIV diagnoses per 100,000

Nationwide pharmacy data show that African Americans account for only ~10% of PrEP prescriptions.
Take home messages

1. Take a sexual history to identify patients who might benefit from PrEP.
2. Offer PrEP to patients identified as having risks for HIV.
3. Conduct an HIV test to confirm a patient is HIV negative before starting them on PrEP.
4. Follow-up with patients every 3 months for HIV/STD testing and 90-day PrEP refill.

Ask about PrEP

P: What is the gender of your sex partners?
   How many sex partners have you had in the last 6 months?

R: Receptive or insertive sex: Do you bottom or top?

E: Ever had STD: Have you ever had an STD?

P: Protection/PrEP: How often do you use condoms?
   Have you heard of PrEP?

Baseline assessment (within 7 days prior to PrEP initiation)

- Screen for symptoms of acute HIV infection (fever, rash, headache, sore throat, etc.)
- HIV test (4th generation Ag/Ab preferred)
- 3-site gonorrhea & chlamydia NAAT (urine, pharyngeal, rectal), syphilis screen
- Serum creatinine (contraindicated if CrCl < 60 ml/min)
- Pregnancy test*
- Hepatitis B Surface Antigen (HBsAg)*
- Hepatitis C Antibody*

* Not a contraindication, but follow up is indicated if positive.

Rare but potential risks:

- Decline in renal function:
  Consider more frequent monitoring in patients with risk factors for kidney disease.

- Decrease in bone-mineral density:
  Caution in those with osteoporosis or history of pathologic/fragility fractures.
  Consider baseline DXA for patients with history of or at high risk of osteoporosis.

A rectal swab can be self-collected.
**HIV assessment at PrEP initiation**

- HIV test

  - **4th Generation Ag/Ab** (preferred)
  - **OR**
  - **HIV 1/2 Ab**

  AND IF:
  - Potential HIV exposure < 72 hours:
    - Consider PEP
  - Potential HIV exposure within last 2 weeks:
    - Consider HIV viral load

  HIV test positive

  Do not start PrEP; Begin 3 ARV drug regimen

  HIV test negative

  Start PrEP

**Prescribing PrEP**

- **Truvada® 200/300 mg**
  - emtricitabine 200 mg/tenofovir disoproxil fumarate 300 mg
  - 1 tablet PO daily, 30-day supply with 2 refills
  - (after negative HIV test)

**Follow-up assessment every 3 months**

- Screen for symptoms of acute HIV infection
- HIV test
- 3-site testing for gonorrhea and chlamydia, syphilis screen
- Serum creatinine, every 6 months
- Hepatitis C Antibody, every 12 months
- Pregnancy test

**PATIENT COUNSELING** (See “PrEP Basics” handout for more tips.)

- Daily dosing is recommended, but imperfect yet regular adherence can still provide significant protection for men who have sex with men. Intermittent dosing is not currently recommended.
- Combining prevention strategies, like condoms plus PrEP, provides the greatest protection from HIV.
What if my patient has a positive HIV test on PrEP?

- Discontinue PrEP immediately to avoid development of HIV resistance.
- Determine the last time that they took PrEP and their PrEP taking pattern.
- Ensure linkage to HIV primary care for prompt initiation of a fully active ARV treatment regimen.

How will my patient pay PrEP?

Medi-Cal and most insurance plans pay for PrEP. Financial assistance is available:

- SFDPH Citywide PrEP navigation line: 415-634-PrEP (7737)
- Patient Advocate Foundation if <400% of FPL: www.copays.org
- PAN Foundation if <500% of FPL: www.panfoundation.org

Prescribing Post-exposure Prophylaxis (PEP)

Three antiretroviral drugs are recommended for PEP regimen: 4

- Tenofovir DF (300 mg)/Emtricitabine (200 mg) daily + Raltegravir 400 mg BID
- OR
- Tenofovir DF/Emtricitabine daily + Dolutegravir 50 mg daily

- Potential HIV exposure within 72 hours and patient has not taken PrEP for past 7 days
- Provide a 28-day supply of PEP, and then transition seamlessly to PrEP
- There is no evidence that PEP “masks” HIV seroconversion

Resources

- For questions regarding HIV PrEP and PEP:
  - Contact an SFDPH prevention consultant: 415-487-5514, or email prep@sfdph.org
  - Contact the National Clinician Consultation Center: 855-448-7737, nccc.ucsf.edu
- Getting to Zero: www.gettingtozerosf.org
- Provider directory: www.pleaseprepmc.org

Clinical PrEP Essentials

**Efficacy key messages:**
- PrEP is highly effective for preventing HIV infection when taken daily;
- Full protection after 7 daily doses for rectal sex and after 20 daily doses for vaginal sex;
- PrEP does not prevent GC/CT/syphilis/genital warts/HIV/HCV.

**Side Effects:**
- 1 in 10 may have GI side effects (N/V/abd pain); usually resolves by 1 month,
- 1 in 200 may have renal dysfunction (typically reversible if d/c PrEP),
- 1% average loss of bone mineral density; reversible if d/c PrEP; no increased risk of fx.

**Recommended Lab Screening & Visits:**

**Initial Labs:** HIV Ag/Ab (4th gen); HIV RNA (If possible); HBsAg (if non-immune); HCV Ab; ALT; Cr; 3 site GC/CT; RPR; **Consider:** Ureg, HAV, HBV, & HPV vaccines.

**Week 1:** Call, check if prescription was filled, adherence, and insurance copay.

**Month 1:** If no HIV RNA test at screening, check HIV Ag/Ab (4th gen), Adherence check.

**Q 3 Months:** HIV Ag/Ab, Cr, GC/CT (3 sites), RPR; check adherence & PrEP indications.

**Documentation:** ICD-10 Z20.6: HIV Exposure.

**Need Help?** U.S. PrEPline, 855-448-7737

*Created by: Lauren Wolchok & Robert Grant*

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Clinical PrEP Essentials

**Indications (by history in the past 6 months):**
Asking for PrEP, OR any sex partner with untreated HIV or HIV risk factors, OR injection drug use and sharing needles, OR used PEP > 1x in the past year, OR a man or trans woman reporting an STI or condomless anal sex with men.

**Caution:**
1. HBV infection and ALT >2 X ULN (continue HBV treatment if PrEP is stopped),
2. At risk for kidney disease, i.e. DM or uncontrolled HTN (consider monthly Cr),
3. Acute viral syndrome (send HIV RNA, consider FTC/TDF/INSTI or delay PrEP),
4. Osteoporosis or h/o non-traumatic fracture (consider Vit D, DXA, referral),
5. Pregnancy or breastfeeding (discuss risks/benefits).

**Contraindications:**
1. eGFR < 60, 2. HIV+, 3. HIV exposure < 72hrs (PEP, then consider PrEP)

**Rx:** Emtricitabine/tenofovir 200mg/300mg (Truvada®) dispense 30 tabs plus 2 refills.

**Counseling:** Link dosing to a daily habit; develop plans for STI prevention and contraception or safer conception; notify if PrEP is stopped more than 7 days.

*Last modified 11/15/2015*
Appendix Q. PrEP Screening Tool – World Health Organization

<table>
<thead>
<tr>
<th>RECORD FORM FOR PREP AND PEP SCREENING</th>
<th>Male</th>
<th>Female</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>What was your sex at birth?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is your current gender?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is your current age?</td>
<td></td>
<td></td>
<td>years</td>
</tr>
<tr>
<td>In the past 6 months:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With how many people did you have vaginal or anal sex?</td>
<td>0</td>
<td>1</td>
<td>2* + 3+* men</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>2* + 3+* women</td>
</tr>
<tr>
<td>Did you use a condom every time you had sex?</td>
<td>Yes</td>
<td>No*</td>
<td>Don’t Know*</td>
</tr>
<tr>
<td>Did you have a sexually transmitted infection?</td>
<td>Yes*</td>
<td>No</td>
<td>Don’t Know*</td>
</tr>
<tr>
<td>Do you have a sexual partner who has HIV?</td>
<td>Yes</td>
<td>No</td>
<td>Don’t Know*</td>
</tr>
<tr>
<td>If “Yes,” has he or she been on antiretroviral therapy for 6 or more months?</td>
<td>Yes</td>
<td>No*</td>
<td>Don’t Know*</td>
</tr>
<tr>
<td>If “Yes,” has the therapy suppressed viral load?</td>
<td>Yes</td>
<td>No*</td>
<td>Don’t Know*</td>
</tr>
<tr>
<td>In the past 3 days:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you had sex without a condom with someone with HIV who is not on treatment?</td>
<td>Yes**</td>
<td>No</td>
<td>Don’t Know**</td>
</tr>
<tr>
<td>Have you had a “cold” or “flu” such as sore throat, fevers, sweats, swollen glands, mouth ulcers, headache or rash?</td>
<td>Yes***</td>
<td>No</td>
<td>Don’t Know</td>
</tr>
</tbody>
</table>

*Consider offering PrEP; **Consider offering PEP; ***Consider acute HIV
## Appendix R. Agenda of PrEP Training

### PrEP Education Training Workshop for Nurse Practitioners

**April 18, 2020**

<table>
<thead>
<tr>
<th>Time</th>
<th>Agenda</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 AM – 9:15 AM</td>
<td>Introduction/Overview/Pre-Survey</td>
</tr>
<tr>
<td>9:15 AM – 10:00 AM</td>
<td>Module 1: STI and HIV Review</td>
</tr>
<tr>
<td>10:00 AM – 11:00 AM</td>
<td>Module 2: Key Elements for Ethical and Effective HIV Prevention Counseling Practices</td>
</tr>
<tr>
<td>11:00 AM – 11:15 AM</td>
<td>BREAK</td>
</tr>
<tr>
<td>11:15 AM – 12:30 PM</td>
<td>Module 3: Adolescents, Reproductive Health &amp; SOGI</td>
</tr>
<tr>
<td>12:30 PM – 1:00 PM</td>
<td>WORKING LUNCH BREAK</td>
</tr>
<tr>
<td>1:00 PM – 1:45 PM</td>
<td>Module 4: Pre-Exposure Prophylaxis</td>
</tr>
<tr>
<td>1:45 PM – 3:00 PM</td>
<td>Case Studies</td>
</tr>
<tr>
<td></td>
<td>(25 minutes group work)</td>
</tr>
<tr>
<td></td>
<td>(40 minutes Debrief/Post-Survey)</td>
</tr>
<tr>
<td>3:00 PM – 3:15 PM</td>
<td>Closing Presentation: Living Positively</td>
</tr>
</tbody>
</table>
Appendix S. Module 1: The Basic of STI, HIV & AIDS

Objectives

At the end of the presentation, the participants will be able to:

- Define and differentiate STI, HIV, and AIDS
- Understand how HIV is transmitted from one person to another
- Correct misconceptions about HIV transmission
- Understand how HIV affects the body
- Learn how HIV and AIDS can be prevented as well as treated and managed

What is STI?

- Sexually transmitted infections (A.K.A. sexually transmissible infections, sexually transmitted diseases (STDs))
- Infections that are primarily transmitted through sexual contact
- Some may also be transmitted through non-sexual means (e.g., direct or skin-to-skin contact)

STI Common Signs & Symptoms

- Pain passing urine
- Severe itchiness
- Ulcercations
- Abnormal discharge
- Abdominal/pelvic pain

Common STIs

<table>
<thead>
<tr>
<th>BACTERIAL</th>
<th>PROTOZOAL</th>
<th>FUNGAL</th>
<th>PARASITIC</th>
<th>VIRAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gonorrhea</td>
<td>Trichomoniasis or Vaginitis</td>
<td>Candidias</td>
<td>Pubic Lice</td>
<td>Genital Warts</td>
</tr>
<tr>
<td>Chlamydia</td>
<td></td>
<td></td>
<td>Genital Herpes</td>
<td></td>
</tr>
<tr>
<td>Syphilis</td>
<td></td>
<td></td>
<td>Scabies</td>
<td>Hepatitis B</td>
</tr>
</tbody>
</table>
**Common Bacterial STI: Gonorrhea**
- Caused by Neisseria gonorrhoea
- Usual incubation period is 3-7 days
- Spread through sexual contact
- May affect genitals, throat or anus

**Signs & Symptoms**
- Yellowish or greenish discharge
- Pelvic inflammation in women
- Scrotal swelling in men

**Common Bacterial STI: Chlamydia**
- Caused by Chlamydia trachomatis
- May infect the cervix, urethra, rectum, throat or eyes
- Also known as the silent STI

**Signs & Symptoms**
- Painful urination
- Mucopurulent Discharge
- Scrotal swelling in men
- Pelvic inflammation

**Common Bacterial STI: Syphilis**
- Caused by Treponema pallidum
- Chronic systemic disease (9-90 days)
- The organism moves through skin or mucus membrane and into the bloodstream
- Can be transmitted through mother to child, blood transfusion, sexual contact

**Sign**
- Painless single lesion
- Rashes

**Common Protozoal STI: Trichomoniasis/Vaginitis**
- Caused by Trichomonas vaginalis
- Spread through unprotected sex, sharing of sex toys

**Signs & Symptoms**
- Yellowish, Greenish or Grayish discharge bubbly & malodorous discharge
- Vulvovaginal Pruritus
- Painful intercourse or urination
- Irritation & itching

**Common Fungal STI: Candidiasis**
- Caused by Candida albicans
- Commonly caused by wearing tight underwear, severe obesity, hot weather, use of steroid, antibiotics or birth control pills, diabetes & pregnancy

**Signs & Symptoms**
- Itching & burning sensation
- Heavy, curdy, white discharge
- Pain when having sex.

**Common Parasitic STI: Pubic Lice**
- Caused by Phthirus pubis
- May affect the roots of underarm and leg hair, chest hair, hair in the abdomen and back, facial hair, such as beards and moustaches
- Eyelashes and eyebrows (very occasionally)

**Signs & Symptoms**
- Severe itching in the affected pubic area
- Reddish spots to bluish gray skin
- Sores due to scratching
Common Parasitic STI: Scabies
- Caused by Sarcoptes scabiei
- Direct skin-to-skin contact, sexual contact with towels underclothing or bedding of an infected person.
- Incubation period – 4 to 6 weeks

Signs & Symptoms
- Intense itching usually at night in the genitals or bottom, knees
- Waistline, hands, wrists, and web of fingers
- Silvery lines in the surface of the skin

Common Viral STI: Genital Warts
- Caused by human papilloma virus (HPV)
- Transmitted directly from skin to skin during sexual contact

Signs
- Lesions
- Warty growths

Common Viral STI: Genital Herpes
- Caused by Herpes Simplex Virus (HSV1, HSV 2)
- Incubation period is 4-7 days

Signs & Symptoms
- Multiple, painful shallow lesions (papular, vesicular, pustular, ulcerated, or crusted)
- Painful urination

Common Viral STI: Hepatitis B
- Caused by Hepatitis B Virus
- Affects the Liver
- Transmitted through sex, receiving contaminated blood or blood products & from an infected mother to her child

Signs & Symptoms
- No specific signs and symptoms on the early stage but in the later phase patients will show jaundice or abdominal enlargement

Common Viral STI: HIV
- Caused by Human Immunodeficiency Virus
- Window period is 4 weeks to 3 months (90 days)

Signs & Symptoms
- No specific signs and symptoms but initial infection shows flu-like symptoms

What will I do to help stop STIs?

Daily Practice
- Ask about risk factors, encourage abstinence (especially in the young), safer sex practices, support behaviors to decrease risk
- Screen asymptomatic people based on epidemiology of the area and your patient population
- Give all available vaccines
- Treat according to guidelines
- Disease reporting, support evidence-based decisions, teach young people to be safe
What is **H.I.V.**

Human Immunodeficiency Virus

Is a virus that causes AIDS and interferes with the body’s ability to fight infections.

---

Global HIV Epidemic (2018)

<table>
<thead>
<tr>
<th>People living with HIV in 2018</th>
<th>People newly infected with HIV in 2018</th>
<th>HIV-related deaths 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>37.9 million (22.7 million – 43.0 million)</td>
<td>1.7 million (1.4 million – 2.0 million)</td>
<td>770,000 (760,000 – 780,000)</td>
</tr>
<tr>
<td>39.2 million (21.5 million – 46.0 million)</td>
<td>1.0 million (0.2 million – 1.2 million)</td>
<td>–</td>
</tr>
<tr>
<td>18.6 million (14.6 million – 22.7 million)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>17.5 million (14.8 million – 20.5 million)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>1.7 million (1.3 million – 2.2 million)</td>
<td>100,000 (70,000 – 130,000)</td>
<td>100,000 (70,000 – 130,000)</td>
</tr>
</tbody>
</table>

Source: UNAIDS/WHO estimates

---

When discussing about HIV, remember the numbers...

1. Sexually Transmissible Infections
2. Tuberculosis
3. Pregnancy

---

What is the connection of STI to HIV?

1. The same mode of transmission
2. The same prevention strategies
3. Presence of STI increases the chance of transmission
4. STI discussion is an an opportunity to talk about HIV

---

What is the relationship of HIV to TB?

1. Diagnosis of TB is a sign of a weak immune system.
2. Weak immune response or low body resistance puts someone at risk for opportunistic infections
3. TB is a common opportunistic infection for people living with HIV.
1. What is the connection of pregnancy and HIV?
   - Pregnancy could mean that a woman is having sex without protection
   - Pregnancy can lead to mother-to-child transmission of HIV

2. What are the two major stages or phases of HIV infection?

3. How is HIV transmitted?
   - Unprotected penetrative sexual intercourse
   - Receiving contaminated blood transfusion
   - From infected mother-to-child

2. HIV INFECTION
   Successful entry of HIV into the body – the host.

2. AIDS CONDITION
   Acquired Immuno Deficiency Syndrome
   It is a condition, which is a result of a weakened immune system due to HIV infection.
HIV cannot be transmitted through:
- Casual contacts
  - Sharing food and utensils
  - Shaking hands
  - Hugging or kissing
  - Coughing, sneezing
  - Using public phone
  - Visiting a hospital
- Feces, urine, saliva, sweat, tears
- Insect bites
- Swimming with PLHIVs
- Sharing toilets
- Donating blood

4
- Body fluids
- Principles of HIV transmission
- Conditions for HIV survival to cause infection

What are the body fluids that have high concentration of HIV?
- Blood
- Semen
- Vaginal fluids
- Breastmilk

What are the 4 principles that should be met for HIV to successfully cause infection?
- Exit of the virus from a PLHIV
- Survival of the virus in the fluid
- Sufficiency of the virus
- Entry to the bloodstream of a new host

What are the conditions that will keep the virus alive?
- No sudden change in temperature
- Environment should have normal acidity
- Environment should be moist
- No exposure to air

How can I protect myself from HIV?
How to prevent HIV?

A. Abstinence
B. Be Mutually Faithful
C. Consistent & Correct Condom Use
D. Do not abuse drugs & alcohol
E. Education & early detection of HIV

Personal Risk Assessment

1. Are you aware of your partner(s') status?
2. Have you ever had sex (any type) and been diagnosed with HIV, AIDS, or an STD?
3. Do you have sex with multiple partners?
4. Have you ever transmitted infection in the last five (5) years?

How will I know if I am HIV positive?

HIV Testing

A person's HIV status can only be determined through HIV testing.

Source: Microsoft, Clipart

Access to HIV Screening

Voluntary counseling & testing (VCT) – individuals willing to undergo testing of their own free will

Provider-initiated counseling & testing (PICT) – a situation where doctors encourage patients to undergo testing

Until A Cure Is Found...

The only effective prevention is NOT to allow the virus to enter the host cells.
References


Appendix T. Module 3: Key Elements for Ethical and Effective HIV Prevention Counseling Practices

Objectives

At the end of the presentation, the participants should be able to:
- Describe what is counseling
- What is HIV prevention counseling?
- What is Provider-initiated counseling and Testing (PICT)?
- What is Client-initiated counseling and Testing (CICT)?

Counseling

- Counseling is a PROCESS of HELPING a person LEARN how to SOLVE certain emotional, interpersonal and decisional problems.
- Counseling is based on a set of techniques and skills that the counselor brings to the interaction to help the client to explore and better understand a problem, deal with related feelings and concerns, evaluate alternatives, make choices and take action.

Counseling

- Professional guidance in resolving personal conflicts and emotional problems of a client

HIV Counseling

- Professional guidance in resolving personal conflicts and emotional problems of a client regarding HIV

- Client-Centered
- Issue-Focused
- Goal-Oriented
- Autonomous
- Responsive
Aims of HIV counseling
- To prevent HIV transmission by providing information about the transmission risk (unsafe sex practices and needle sharing)
- To assist client in developing the personal skills needed to negotiate safer practices
- To provide psychological support to people who are infected with and affected by HIV in improving their emotional, psychological, social, and spiritual well-being
- To support clients in treatment adherence and improved therapeutic outcomes
- To adopt healthy lifestyles and improve the quality of life

When to counsel
- Before doing the test (pre-test)
- After the test (post-test)
- Crisis counseling
- Adherence counseling

Pre-Test Counseling
- Making the patient comfortable
- Reason for testing
- Concepts and misconceptions
- Clarifications about HIV and AIDS
- Health education
- Clarify about the test
- Practicalities of the test
- Coping mechanism
- Confidentiality
- Consent

Post-Test Counseling
- Relaying the result/breaking the news
- Medical plan
- Plan for the future
- Reduction of high risk behavior
- Networking
- Support the patient

HIV Counseling is NOT
VERBAL Non-Supportive Behaviors
- Advising
- Preaching or Praying
- Blaming & Judging
- Cajoling
- Interrogating
- Telling or Directing
- Excess reassuring
- Straying on the topic
- Encouraging dependence
- Patronizing attitude
- Deciding on behalf of the client
- Demanding

Non-supportive behaviors
NON-VERBAL
- Looking away
- Keeping a distance
- Yawning
- Frowning
- Blank face
- Using unpleasant tone of speech
- Speaking too fast or too slow
- Moving around
- Fidgeting
**CICT versus PICT**

<table>
<thead>
<tr>
<th>Category</th>
<th>CICT</th>
<th>PICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clients/Patients</td>
<td>- Comes specifically for HIV test&lt;br&gt;- Not necessarily expecting HIV test</td>
<td>- Comes specifically for TB services&lt;br&gt;- HCW trained for counseling</td>
</tr>
<tr>
<td>Providers</td>
<td>- Usually trained not necessarily HCW</td>
<td>- Provider recommends test as routine</td>
</tr>
<tr>
<td>Primary Purpose</td>
<td>Focus on preventing HIV transmission thru risk assessment, risk reduction &amp; testing</td>
<td>Diagnosing HIV appropriate TB &amp; HIV management, particularly referred</td>
</tr>
<tr>
<td>Protocols</td>
<td>- Client-focused&lt;br&gt;- Usually one-on-one&lt;br&gt;- Important for prevention</td>
<td>- Limited discussion on the need&lt;br&gt;- Focus on medical care &amp; prevention</td>
</tr>
<tr>
<td>Follow-up</td>
<td>- Referred to medical and support services (CB)</td>
<td>- Referred to medical and support services (CB)</td>
</tr>
</tbody>
</table>

**Activity (Value List)**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Career</td>
</tr>
<tr>
<td></td>
<td>Sexuality</td>
</tr>
<tr>
<td></td>
<td>Health</td>
</tr>
<tr>
<td></td>
<td>Control</td>
</tr>
<tr>
<td></td>
<td>Family</td>
</tr>
<tr>
<td></td>
<td>Pleasure</td>
</tr>
<tr>
<td></td>
<td>Freedom</td>
</tr>
</tbody>
</table>

**Activity (Word List)**

**POSITIVE**
- People in Prostitution
- Homosexuals
- Abortion
- Condom

**NEGATIVE**

**Controversial Statements**
- Women living with HIV (WLHIV) should not be allowed to bear children.
- Males who have sex with males engage in immoral behavior.
- We should sympathize with PLHIVs for what happened to him/her.

**Key Elements (4A and 4C)**
- Ample Time
- Acceptance
- Accessibility
- Consistency and Accuracy
- Consent
- Confidentiality
- Cultural and Social Considerations

**Consideration of Space**
- Space should be conducive to observe confidentiality
- No tables or anything that can serve as a barrier

**Protocol/Proper Positioning**
- Proper ventilation (especially when handling TB patients)
- Use of mask
- 45 degrees angle
- 1 arm length distance
- Counselor should be near the exit
Let's Exercise: Role Play

BE A COUNSELLOR
BE A CLIENT
Reason for seeking care: “I want to get tested for HIV.”
BE AN OBSERVER

Interpersonal Skills and Techniques

- Establishing Rapport
- Ensuring privacy and confidentiality
- Showing Respect
- Showing Empathy
- Acknowledging Difficult Feelings
- Offering Acceptance

Communication Skills and Techniques

Attending Skills
- Showing Immediacy
- Appropriate Language Level and Impersonal Statements

Micro-skills in communication
- Listening Skills
- Questioning (Open, Close, Leading)
- Appropriate Use of Silence
- Non-verbal cues

Don't Forget the LOVERS

- L ean forward when talking to the client
- O pen stance/gesture
- V oice modulation
- E ye contact
- R elaxed position
- S it squarely

Conclusion

- Counseling is an art and science.
- Approaches may be different but a counselor should have qualities of caring, empathy, self-awareness, cultural sensitivity and patience.
- Counseling techniques include active attending, reflection of feeling, questioning, interpretation, confrontation and summarizing.
- Counseling relationship has stages of rapport forming, demystifying counseling process and beginning the process of history taking and needs definition, actual work of supporting clients decisions, feelings and help him/her change and finally ending of relationship.

Remember...

SKILLS ARE LEFT FORGOTTEN IF NOT PRACTICED.
Appendix U. Module 3: Adolescents, Reproductive Health, and SOGI

Objectives
At the end of the presentation, the participants will be able to:
- Describe adolescents and young adults (AYA), and transgender AYA.
- Identify the characteristics of AYA.
- Describe the difference of sex, sexual orientation, and gender identity.
- Assess, plan, and intervene for an AYA client who may visit to our clinic for primary care

Adolescence
- Adolescence is the period between the normal onset of puberty and the beginning of adulthood.
- Puberty is the physical maturing that makes an individual capable of sexual reproduction.
- In the United States, it is generally from ages 12 to 19.
- The five leading characteristics of adolescence are biological growth and development, an undefined status, increased decision making, increased pressures, and the search for self.

Adolescents
- Around 1.2 billion people, or 1 in 6 of the world's population, are adolescents aged 10 to 19.
- Adolescents and young adults aged 13 to 24 represent approximately 15% of the U.S. population (U.S. Census Bureau, 2017)
Understanding Adolescence

**History**
- Many societies do not include the idea of adolescence.
- Developments since the Civil War have strengthened the idea of adolescence in the United States and other industrialized nations.
- Mandatory education, exclusion from the labor force, and separate legal status encourage the idea of adolescence.

**Biological Growth and Development**
- Onset of adolescence marked by beginning of puberty
- Specific hormones are released
- Growth spurts, voice changes, development of sexual characteristics
- Complexion problems

**Undefined Status**
- Unclear social expectations
- Some treated as children, some as adults
- Allowed to marry at age 16, vote at age 18, and drink at age 21
- Some adults like adolescent culture, others critical

---

Health Risks

- Early Pregnancy and childbirth
- Mental health
- Violence
- Alcohol and drugs
- Injuries
- HIV and other STIs
- Malnutrition and obesity
- Exercise and nutrition
- Tobacco
- Rights of AYA

---

Health Risks

Promoting healthy behaviors during adolescence Taking steps to better protect young people from health risks

critical for the prevention of health problems in adulthood
countries’ future health and ability to develop and thrive

---

Reproductive Health

- Reproductive health is a state of complete physical, mental and social well-being, and not merely the absence of reproductive disease or infertility. Reproductive health deals with the reproductive processes, functions and system at all stages of life.

---

Reproductive Health, Sex, Gender, and Sexuality

---

Key Elements of Reproductive Health

- Family planning;
- Antenatal, safe delivery and post-natal care;
- Prevention and appropriate treatment of infertility;
- Prevention of abortion and management of the consequences of abortion;
Key Elements of Reproductive Health

- Treatment of Reproductive Tract Infections;
- Prevention, Care & Treatment of STIs, HIV & AIDS;
- Information, Education and Counselling, as appropriate, on human sexuality & RH;
- Prevention and surveillance of violence against women, care for survivors of violence and other actions to eliminate traditional harmful practices;
- Appropriate referrals for further diagnosis and management of the above.

How to take care of your reproductive health?

- Female: Regular pap smear, Self-breast Exam
- Male: Digital Rectal Exam, Self-testicular Exam
**Remember...!**

There is nothing shameful in learning about and understanding the parts and functions of one’s sexual and reproductive system.

For any abnormal growths, discharges, or pain consult a doctor immediately. Do not self-medicate.

**SEX**

refers to the biological and physiological characteristics that defines a male and a female.

However, it is also generally referred to as the sexual act.

**GENDER**

- Refers to the socially constructed roles, behaviors, activities, and attributes that the society may deem appropriate for men and women.
- Social roles of the male (masculine) and female (feminine)

**What do you think is this?**

SEX

GENDER

SEXUALITY

**DETERMINANTS OF SEX**

- External Reproductive Organ
- Internal Reproductive Organ
- Hormones
- Chromosome
- Physical Characteristics
- Physiologic Characteristics

**ACT**

THINK

BEHAVE

**FEEL**

Intersex
**SEXUALITY**

The total expression of an individual’s self-concept, reflecting his or her whole psychosocial development it begins at birth and last a lifetime.

**COMPONENTS of SEXUALITY**

- Practices
- Partners
- Pleasure/Pressure/Pain
- Procreation
- Power

**SOGIE???**
The Genderbread Person

**Understanding Transgender**

- Transgender is an “umbrella” term used to describe a wide range of identities and experiences, and is used to refer to many types of people:
  - transsexual people
  - crossdressers
  - androgynous people
  - genderqueers
  - other gender non-conforming people whose appearance or characteristics are perceived to be gender atypical
- In its broadest sense, “transgender” encompasses anyone whose identity or behavior falls outside stereotypical gender expectations.

**Why SOGI Initiative Now?**

<table>
<thead>
<tr>
<th>Category</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>LGBTQ Youth</td>
<td>3-4 times more likely to commit suicide</td>
</tr>
<tr>
<td></td>
<td>40% increase in homelessness</td>
</tr>
<tr>
<td></td>
<td>Increased rates of STIs</td>
</tr>
<tr>
<td></td>
<td>Increased rates of suicide</td>
</tr>
<tr>
<td></td>
<td>Increased incidents of hate crimes, and suicides</td>
</tr>
<tr>
<td></td>
<td>Less insurance</td>
</tr>
<tr>
<td>Adults LGBTQs</td>
<td>Increased rates of tobacco, alcohol, and substances</td>
</tr>
<tr>
<td></td>
<td>Increased rates of STIs</td>
</tr>
<tr>
<td></td>
<td>Increased incidents of hate crimes, and suicides</td>
</tr>
<tr>
<td></td>
<td>Less insurance</td>
</tr>
<tr>
<td>Senior LGBTQs</td>
<td>Feeling of isolation</td>
</tr>
<tr>
<td></td>
<td>Less family support</td>
</tr>
<tr>
<td></td>
<td>Lack social and support services</td>
</tr>
<tr>
<td></td>
<td>Lack access to health insurance</td>
</tr>
</tbody>
</table>

**Gender Transition**

- Gender transition is the process by which transgender people move towards living in the gender they identify
  - Some have medical treatment, most do not
  - Identification documents are not always changed
- Gender transition at work happens in different ways.
  - Common to tell one’s supervisor first and develop a timeline
  - Others start presenting in a more masculine or feminine way and coworkers notice
- Transgender experiences are different, but often very difficult.
  - Depending on a person’s economic and other resources, discrimination against them can cause a spiral of other problems.
Sexual Orientation and Gender Identity/Expression are Different
- Sexual orientation refers to the relative genders of the partners
  - heterosexual
  - gay or lesbian
  - bisexual
- Transgender people can have any sexual orientation
- Transgender is not a sexual orientation, it is a gender identity

Remember...!
It is important to respect an individual who does not subscribe to the gender and sexual norms set by society; he/she should not be judged as immoral and abnormal.

Understanding Sexuality (Physiological & Psychological)
- Homosexuality
- Masturbation
- Menopause
- Erectile Dysfunction

The Stages of Human Sexual Development
- Early childhood (birth to 3 years of age)
  - Need for oral satisfaction
  - Gender identity develops
  - Sex role conditioning
  - Possibility of orgasm
  - Body exploration
- Late childhood (4 to 8 years of age)
  - Childhood sexual play
  - Sex role learning
  - Bathroom vocabulary
  - Possibility of masturbation
  - Media influences

The Stages of Human Sexual Development
- Early adolescence (9 to 11 years of age)
  - Puberty begins
  - Closest to same sex friends
  - Possibility of body exploration with others
  - Media influences
- Middle adolescence (12 to 18 years of age)
  - Greater awareness of being attracted to people of opposite, same, or both sexes
  - Possibility of sexual intercourse
  - Strong need for independence

The Stages of Human Sexual Development
- Late adolescence (18 to 21 years of age)
  - Physical sexual maturity
  - Greater self identification
  - Movement to vocational phase of life
  - Possibility of more sexual relationships
  - Relationship development
Sexuality and Risks to STIs & HIV

“As the changes occur to a young body that has less access to correct information, the greater her/his risk of acquiring STI, HIV & AIDS and other age-related infections/diseases... the more meager his/her chance for survival.”

CASE STUDY: Transgender Youth

Chief Complaint/HPI

- “I noticed some wounds or ulcers in my bottom since yesterday. They are burning and painful.”
- Jamey, pronoun “She” and 18 years old is a male to female transgender. She presents to the clinic feeling worried about her symptoms of burning and tingling on her “bottom” (rectum/anus?). She is well-appearing but verbalized her fear. According to her, she also learned that the man she had sex with the other night is HIV-positive”. He has no health insurance and last PCP visit more than a year ago.

Differential Diagnosis

1. Herpes simplex (genital herpes: asymptomatic to tingling or burning without lesions, to recurrent genital ulcerations)
2. Syphilis (Common STI: single non-tender ulcer)
3. Chancroid (single deep ulcer which is painful)
4. Lymphogranuloma venereum (lack of vesicles, with single or few ulcers and unilateral lymphadenopathy)
5. Contact dermatitis (localized burning, stinging, itching, blistering, and swelling at the area of contact with the allergen or irritant)
6. Behcet syndrome (systemic vasculitis that leads to mucocutaneous, ophthalmologic vascular, gastrointestinal & CNS manifestations)
7. Scabies (may have disseminated skin involvement, itching, intense pruritus, burrows)
8. Squamous cell carcinoma (non-healing ulcerative lesions, skin biopsy: carcinoma)

Past Medical History

- Has no medical home/clinic
- History of rectal chlamydia at age 16
- Immunization: Unknown. Believes she got her regular shots. Last seen by MD a year ago.
- PPD negative 5 months ago.

Family History

- Dad is alcoholic. Mom has history of mental illness (depression and anxiety). Not in touch with family.

Allergies

- NKDA

Medications

- Spironolactone
- OTC Advil

Social History

- Lives in an SRO. Recently moved here in the Bay Area 4 months ago from Colorado. No close friends.
- Drinks alcohol at least once a week.
- Smokes marijuana almost daily. Smokes tobacco at least 5 sticks in a week.
-% of methamphetamine at least once a month.
Review of Systems
- Awakened last night from tingling sensation on her rectum. "I feel itchy and painful down there." Denies itchy and painful down there. Denies unusual penile discharge.
- Reports feeling of incomplete defecation this morning.
- Reports feeling sad and lonely in the past 5 days. Denies suicidal ideation.

Assessment: CRAFFT
CRAFFT (Adolescent Alcohol and Substance Use)
- Alcohol: YES, at least once a week
- Marijuana: Yes, daily
- Other drugs: Yes, smokes methamphetamines
- Ridden in car with impaired driver: No
- Uses alcohol to relax, feel better, or fit in: Yes
- Uses alcohol while alone: No
- Memory loss/blackouts: Yes
- Family/Friends concerned: No
- Gotten into trouble while using: Yes, had a fight with someone

CRAFFT Result and Counseling: Positive - anticipatory guidance given

STI Risk Assessment
- Patient concerned about STI exposure? Yes.
- New sexual partner in last 12 months? Yes
- Number of partners in the last 2 months: 10
- Number of partners in the last 12 months: 10
- Multiple, more than 30
- Condom Use: 60% use
- Gender of Partners: Males
- STI symptoms: pain, itching in the anus/rectum
- Last STI testing: 6 months ago
- Have you ever traded sex for money, clothing, or place to stay? Yes
- Has anyone including a family member ever asked you to have sex with someone else? Yes

Vital Signs
- BP: 118/75
- HR: 95 regular
- RR: 16
- T: 99.2 degrees F
- Ht.: 5'6"
- Weight: 130 lbs

Pertinent PE Findings
- Gen: Well-appearing, anxious/nervous.
- Skin: No rash.
- Heart/lungs: S1, S2. No murmurs rubs or gallops. Lungs clear. Normal respiratory efforts.
- Abdominal: Soft, non-distended, non-tender.
- Genital/Urinary: Sore or blisters present around the anus. No penile vesicles or sore noted.

Laboratory Findings
- Complete Blood Count (CBC) with Differential (CBC w/Diff)
  - WBC: 9,000/μL
  - RBC: 4.2 million
  - Hemoglobin: 13.2 g/dL
  - Hematocrit: 39.8
  - MCH: 78.4 pg
  - MCHC: 31.6
  - MCV: 86.8 fL
  - Platelets: 250,000/mm³
  - Neutrophils: 78% WBC count
  - Lymphocytes: 21% WBC count
  - Monocytes: 4% WBC count
  - Eosinophils: 0% WBC count
  - Basophils: 0% WBC count
  - Band WBC: 1% WBC count
Assessment and Plans

1. Herpes viral infection of perianal skin and rectum – A60.1
   - Labs: HSV Culture, RPR/Syphilis, GC CT rectal, oral, urine
   - Start Acyclovir 400 mg orally three times daily for 7-10 days
   - Start Acetaminophen 500 mg orally every 4-6 hours as needed for pain/fever
   - Sitz bath as needed for relief of symptoms
   - Education and counseling on HSV, HIV & AIDS, and other STI (ABCDEF of STI)

2. Contact with and (suspected) exposure to human immunodeficiency virus [HIV] – Z20.6
   - Labs: HIV Viral Load, HIV Ab/Ag, Metabolic Panel, Liver Panel (Hep A, B, C)
   - Start Truvada (tenofovir/emtricitabine) one tablet daily
   - Start Tivicay (dolutegravir) 50 mg 1 tablet daily
   - Education and counseling on PEP
   - Referral to PEP/PEP Navigator
   - Others: HPV #1, RTC in 2 weeks for follow-up.

References


dolescence.pdf

*Photos from Google Images
Appendix V. PrEP Training Workshop Module 4

Initiating PrEP in Primary Care: Addressing the AYA High-Risk Populations
Igor Moreira, DNP(c), MPH, RN, PHN
San Francisco, CA, USA
April 16, 2020

Objectives

At the end of the presentation, the participants should be able to:
- Describe what is PrEP and its indication.
- Describe PrEP effectiveness, side effects, and benefits.
- Identify the barriers of PrEP use in adolescents and young adults.
- List key PrEP counseling points.
- Understand PrEP resources, guidelines, and algorithm.
- Develop confidence to prescribe PrEP in their practice.

The Project: AYA ComPrEP
- **What**: Creation of school-based PrEP Program through the Adolescents & Young Adults Comprehensive PrEP Education Project – scholarship grant from Jonas
- **Where**: Balboa Teen Clinic (Balboa High School) of the Community Health Program for the Youth (CHPY) – San Francisco Department of Public Health
- **Why**: Provide access to PrEP to high-risk teens or adolescents and young adults in San Francisco and the Bay Area
- **How**: Review of literature, conduct of assessment, trainings, workshops, and evaluation.

HIV Epidemic in the United States
- 38,739 new all ages HIV diagnoses in 2017 in the U.S. (1,100,000 PLHIV total)
- 22% of new HIV diagnoses - AYA ages 13 to 24
- 108 young PLHIV 13-24 years old in San Francisco with 24 (11%) of them were newly diagnosed

HIV in AYA
- **AYA** - a diverse population (AYMSM, AYA transgender, bisexuals, adolescents who engage in sex work, drug use, and sexually active heterosexuals
- 1/3 of AYA, particularly AYMSM, have poor health outcomes with low retention in care, and low viral-load suppression
- **How**: Annual cost per patient for HIV care in 2010 in the U.S. was $23,000, with a lifetime cost of $379,000 in 2010 dollars
What is PrEP?

- Medications and other delivery devices that prevent HIV transmission
- Truvada and Descovy – the only pharmaceutical interventions in oral form that shown in clinical trials to prevent HIV transmission that have approval by the FDA

PrEP in the United States

- 2012 – FDA and CDC approved PrEP protocol for use by sexually active adult MSM and PUD (substantially at risk of acquiring HIV infection)
- PrEP = use of Truvada® (emtricitabine and tenofovir disoproxil fumarate or FTC/TDF, or Descovy® (tenofovir alafenamide and emtricitabine or FTC/TAF
- Adherence to PrEP remains a challenge: cost, adverse reactions, attitude
- Average cost is $1,845 a month in 2019
- Limited data on real-world experience with school-based PrEP

PrEP Rx for AYA in the U.S.

Component of a PrEP Program

1. Identify patients who may benefit from PrEP
2. Discuss PrEP with our patient
3. Take a medical, sexual, substance use history and review of symptoms
4. Initiate PrEP
5. Select PrEP Medication
6. Monitor and provide ongoing support for patients using PrEP

PrEP Eligibility

- HIV negative
- No suspicion of acute HIV infection
- Substantial risk of HIV infection
- No contraindications to PrEP medications (e.g. TDF/FTC)
- Willingness to use PrEP as prescribed, including periodic HIV testing

HIV Negative

- Absence of HIV infection
- HIV Antibody Test: Use of Rapid HIV Antibody Testing (Needle Prick testing)
- HIV RNA Test (Viral Load Testing)
Acute HIV Infection

HIV Progression

Acute HIV Infection

Main symptoms of Acute HIV infection

- Flu-like symptoms

Screening for Substantial Risk

- Person living in a high HIV prevalence population or geographical population who has had in the last six months:
  - Vaginal or anal sexual intercourse
    - Without a condom
    - With more than 1 partner
  - Recent history of STIs by laboratory testing or self-report
  - Has used PEP for sexual exposure
  - Requesting PrEP

General Screening Questions

- Have you had sex with more than one person?
- Have you had sex without a condom?
- Have you had sex with anyone whose HIV status you do not know?
- Have you injected drugs and shared injecting equipment?
- Are any of your partners at risk of HIV, through sexual or drug use behaviors?
- Do you have sex with a person who has HIV?
- Have you received a new diagnosis of STI?
- Do you desire pregnancy?
- Have you used or wanted to use PrEP or PEP for sexual or drug use exposure to HIV?

General Screening Questions

For people who have HIV+ sex partner:

- Is your partner taking ART for HIV?
- Has your partner been on ART for more than 6 months?
- At least once a month, do you discuss whether your partner is taking HIV medication daily?
- If you know, when was your partner’s last HIV viral load? What was the result?
- Do you desire pregnancy with your partner?
- Do you use condoms every time you have sex?

Additional Factors to Ask

Are there aspects of your situation that may indicate higher risk of HIV? Have you...

- Started having sex with a new partner?
- Ended a long-term relationship and are looking for a new partner?
- Received money, housing, food or gifts in exchange for sex?
- Been forced to have sex against your will?
- Been physically assaulted, including assault by a sexual partner?
- Injected drugs or hormones using shared equipment?
**Additional Factors to Ask**

Are there aspects of your situation that may indicate higher risk of HIV? Have you...

- Used recreational drugs or psychoactive drugs?
- Been forced to leave your home (especially if due to sexual orientation or violence)?
- Moved to a new place (possibly having higher prevalence of HIV exposure)?
- Lost a source of income (such that you may need to exchange sex for shelter, food, or income)?
- Left school earlier than you planned?

**Practical Screening Questions**

- Framed in terms of people’s behavior rather than sexual identity
  - Sensitive, inclusive, non-judgmental, and supportive

**HIV Assessment and PrEP Initiation Algorithm**

**Prescribing PrEP**

<table>
<thead>
<tr>
<th>PrEP</th>
<th>TDF/FTC (Truvada)</th>
<th>TAF/FTC (Descovy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PrEP</td>
<td>Contact with and exposure to human immunodeficiency virus</td>
<td></td>
</tr>
</tbody>
</table>

**Types of PrEP Dosing**

<table>
<thead>
<tr>
<th>Types of PrEP Dosing</th>
<th>Dosing Description</th>
<th>Number of tablets per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily PrEP</td>
<td>TDF/FTC taken the same time daily</td>
<td>7 tabs</td>
</tr>
<tr>
<td>On-demand PrEP (alternative PrEP dosing: Non-daily PrEP)</td>
<td>TDF/FTC before and after sexual activity; taking a loading dose of two tablets of TDF/FTC or placebo with food 2 to 24 hours before sex</td>
<td>4 tabs</td>
</tr>
</tbody>
</table>

**Alternative PrEP Dosing**

<table>
<thead>
<tr>
<th>Types of Alternative PrEP Dosing</th>
<th>Dosing Description</th>
<th>Number of tablets per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event-Driven PrEP</td>
<td>Similar to on-demand PrEP: take 1 tablet before and after sex</td>
<td>2 tabs</td>
</tr>
<tr>
<td>Time-Driven PrEP</td>
<td>Taking 1 tablet of TDF/FTC (Truvada) twice weekly with a post-sex dose, which 59 participants were given in the study of Grant et al (2016)</td>
<td>2 tabs + 1 tab after sex</td>
</tr>
<tr>
<td>Intermittent PrEP</td>
<td>Taking a pill of TDF/FTC on Monday and Friday, and 1 pill within 2 hours after sex, not to exceed 1 dose per day</td>
<td>2 tabs + 1 tab after sex</td>
</tr>
</tbody>
</table>
Contraindications to PrEP

- HIV infections
- Signs or symptoms of acute HIV infection, probable recent exposure to HIV
- Estimated creatinine clearance of less than 60mL/min (if known)
- Allergy or contraindication to any medicine in the PrEP regimen

Creatinine and estimated Creatinine Clearance

- Measure before beginning PrEP and every six months after PrEP start
- More frequent creatinine monitoring \(\rightarrow\) co-morbid conditions that can affect renal function (e.g. DM, HTN)
- \(\uparrow\) Creatinine extremely rare in people <45 years with baseline estimated creatinine clearance >90 ml/min and weighed >55 kg
- Creatinine elevations \(\rightarrow\) mild, mostly self-limited, and reversible
- If no lab interpretation \(\rightarrow\) use the Cockcroft-Gault equation to calculate estimated creatinine clearance

Side Effects of PrEP

- PrEP is very well-tolerated.
- Nausea, abdominal discomfort, or headache
  - about 10% of people taking PrEP
  - resolves in a few weeks

<table>
<thead>
<tr>
<th>TRUVADA</th>
<th>DESCOVY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generally safe and well tolerated</td>
<td>Generally safe and well tolerated</td>
</tr>
<tr>
<td>Headache (7%) and abdominal discomfort (3%), which often resolve in a few weeks</td>
<td>Abdominal discomfort, nausea (5%) and headache (2%), which often resolve in a few weeks</td>
</tr>
<tr>
<td>Small decrease in eGFR, which improves upon discontinuation of Truvada</td>
<td>Small increase in LDL cholesterol</td>
</tr>
<tr>
<td>Slightly decreased bone density, but no increased risk of fractures</td>
<td>Slight increase in body weight</td>
</tr>
</tbody>
</table>

Barriers to PrEP in AYA

- PROVIDER-ASSOCIATED BARRIERS
  - Clinician awareness and experience in prescribing PrEP
  - Clinicians’ attitudes toward AYA using PrEP

- AYA PATIENT-ASSOCIATED BARRIERS
  - Lack of PrEP awareness
  - Negative attitudes toward PrEP
  - Economics
  - Adherence and retention
  - The stigma of PrEP
  - Relationship status

Provider-Associated Barriers

- Clinicians’ general lack of awareness of PrEP among young patients who might benefit from its use.
- Perceived high cost of insurance was associated with lower intention to prescribe PrEP to AYA.
- More experience in non-occupational post-exposure prophylaxis (nPEP) was associated with actual prescription of PrEP.
- Provider perception that multi-disciplinary teams and behavioral interventions are not necessary for successful PrEP delivery was associated with intention to prescribe and actual prescription of PrEP.

Provider-Associated Barriers

- Barriers related to parents for patients under 18 (e.g. maintaining confidentiality and lack of clarity about PrEP falling under protected confidential care for adolescents)
- Negative publicity and attitudes of colleagues on PrEP
- Concern about patient adherence to PrEP, and PrEP monitoring visits including the development of viral resistance due to incomplete adherence
- Concern about side effects and toxicity (e.g. effects on bone density and renal function)
- Concern about risk compensation (e.g. the concern that patients might participate in riskier behaviors)
**Provider-Associated Barriers**

Clinicians described characteristics of people who would not be appropriate for PrEP, including:
1. Presence of mental health diagnoses, and/or
2. Substance abuse issues. These are also perceived as indicators of a person engaging in higher risk sexual behavior, which could also negatively impact adherence to PrEP.

**AYA-Associated Barriers**

- Lack of awareness. AYA desire for more information about PrEP (types of medications and active ingredients, effectiveness, side effects, and odds of contracting HIV).
- Negative attitudes toward PrEP. Adherence could be difficult in the long term.
- Increased medical mistrust associated with decreased willingness to take PrEP.
- Economics. Cost of PrEP often voiced by AYA of color.

**AYA-Associated Barriers**

- The stigma of PrEP. It is a prevention strategy for those who engage in high-risk sexual behaviors or more frequent casual encounters
- Relationship status. PrEP being seen as a trust and fidelity issue, taking PrEP could mean likely to have sex outside of the main relationship
- In a transgender study – 23% did not want to add another medication to their health regime. 1/3 concerned about getting to quarterly appointments
- Most common reasons for missing doses of PrEP were: 1) being away from home; 2) being too busy; 3) forgetting; 4) changes in routine

**The Role of Primary Care in PrEP Use**

**Community resource**
- As educators can proactively inform patients and the community of the benefits and risks of PrEP use.

**Screening and follow-up of at-risk AYA**
- Utilizing primary care models, can actively assess AYA patient risk, diagnose patients, create plans for adherence and continuity of treatment, and evaluate AYA patient response to PrEP.

**The Role of Primary Care in PrEP Use**

**Collaboration and integration of behavioral health services**
- Become more involved in counseling and behavioral change for AYA, applying a patient-friendly approach.

**Policy and practice: Advocacy**
- Advocates for change and advocacy targeting health policy is a legitimate aspect of professional nursing. Efforts that emphasize increasing prevention and lowering the cost of that prevention are appropriate aspects of the nurse’s role.

**GROUP CASE STUDIES**
Case Study 1
- A 16 years old white male who identified himself as gay man presents to the clinic and is requesting to get tested for STI. He reports having 3 male partners in the last 6 months.
  - Where do you start?
  - What key information do you want to know?
  - Which prevention services or health care maintenance will you recommend?
  - What education will you provide to him?
  - Will you offer him PrEP today? Why or why not?

Case Study 2
- A 15 years old female Grade 10 student presents to the health center and is curious about HIV. She mentioned that she is is dating a male friend. She asks about HIV. She is taking Marlissa and is here for refill as well.
  - What pertinent questions will you ask the patient?
  - What education will you provide to her?
  - Will you offer her PrEP today? Why? Why not?
  - What test or labs will you request for her?

Case Study 3
- A 21 years old male with a female partner of 2 years who is HIV-positive is referred to the clinic for check-up. The last time he had sex with his partner was a week ago without using condoms.
  - What pertinent questions will you ask?
  - Will you offer him PrEP today? Why? Or why not?
  - What testing or labs will you order?
  - What are your ICD-10 diagnosis?
  - When will you schedule the next follow-up?

Case Study 4
- A 34 years old transgender woman is here in the clinic after more than a year of being out of care. She has a history of hypertension and acute renal failure 8 years ago. She wants to continue her hormone therapy Estradiol. She reports doing sex work as her means to earn and survive in the city.
  - Where do you start?
  - What key information do you want to know? What test or labs will your order for her?
  - What education will you provide to her?
  - Will you offer her PrEP today? Why or why not?

Case Study 5
- A 17 years old male out-of-school youth is in clinic today for a visit. He has a history of drug use. He asked to be tested for STI due to symptoms of fever, fatigue, and sore throat 5 days ago. He is concerned about having no insurance and his parents knowing that he visited the clinic.
  - What pertinent information will you ask?
  - How do you counsel the client?
  - What tests or labs will you order?
  - Will you recommend him to start on PrEP today? Why or why not?
  - If he qualifies for PrEP based on your assessment, what medication will you prescribe? Why and why not?

Case Study 6
- Patient XR is 22 years old bisexual male client in clinic today for PrEP follow-up. He started PrEP a week ago and reported feeling nauseated for the past 5 days. He has a girlfriend but admitted to having sexual relationship with male partners. He feels that he does not really need to take his PrEP daily since he only have occasional exposure.
  - Will you recommend him to stop PrEP? Why or why not?
  - How do you counsel the client? What information will you ask?
  - Will you order new labs? Will you order new labs today? Why or why not?
  - What support services will you provide to the client?
  - When will you schedule him for follow-up? Describe your follow-up plans
PROJECT OVERVIEW PAPER

REVIEW OF CASE STUDIES

Conclusion

- PrEP is a vital component of a robust HIV prevention program for AYA. It is safe and effective and is easy to prescribe and monitor.
- PrEP can be prescribed by clinicians, including nurse practitioners, and should be made accessible to AYA who are at risk of HIV infection regardless of their socioeconomic status and other background factors.
- Clinic staff has roles in PrEP services including education, counseling, and monitoring.
- PrEP services for AYA can be provided by USF-prepared NP. We can do it! GO TEAM USF!

References


Appendix W. Pre-Training Workshop Survey

Doctor of Nursing Practice – Family Nurse Practitioner  
School of Nursing and Health Profession | University of San Francisco  

Initiating PrEP in Primary Care: Addressing the AYA High-Risk Populations  
Pre-Training Workshop Survey

Section I. Information About You  
Direction: Please put a check on the box next to your answer on questions. Some of the other questions ask for answers in the form of written answers.

1. First and Last Name: ______________________________
2. What is your DNP Track: __________________________
3. Year of Birth: ____________
4. What is your gender? ___ Male ___ Female ___ Transgender ___ Other Identification
5. What is your sexual orientation:  ____ Asexual  ____ Bisexual  ____ Homosexual/Gay  
   ____ Heterosexual/Lesbian  ____ Homosexual  ____ Pansexual  ____ Queer  
   ____ Other; Specify: ___________________________  ____ Prefer not to answer
6. Have you attended a PrEP training before? _____ Yes; Describe: ___________________________  
   __________________________________________________________  _____ No
7. Do you have experience providing PrEP services to clients? _____ Yes; Describe: ______  
   __________________________________________________________  _____ No
8. Do you have any experience working on HIV issues in the past? _____ Yes; Describe: _____  
   __________________________________________________________  _____ No

Section II. Knowledge About HIV and PrEP  
Direction: True or False. Please put a check on the line next to your answer on questions.

1. HIV is preventable. _____ True  _____ False
2. HIV infection is curable. A person infected with HIV can access cure at treatment clinics or hospitals. _____ True  _____ False
3. There is a vaccine available to prevent HIV infection. _____ True  _____ False
4. Children born to HIV-positive women are infected with HIV at birth. _____ True  _____ False
5. After a needle prick injury with a needle from an HIV-infected person, the chance of contracting HIV is less than 1%. _____ True  _____ False
6. After a needle prick injury with a needle from an HIV-infected patient, immediately gently expressing blood from the puncture site reduces the risk of contracting HIV infection. _____ True _____False

7. After a needle prick injury with a needle from an HIV-infected person, a health worker may take HIV medications to reduce the chance of contracting HIV infection. _____ True _____False

8. One can be identified as HIV-positive by the way the person looks (e.g. signs and symptoms like skin ulcers, weight loss). _____ True _____False

9. If a person has a sexually transmitted infection (STI), his/her chance of getting HIV is higher. _____ True _____False

10. A person will automatically get infected with HIV once he/she has sexual intercourse with a person living with HIV. _____ True _____False

11. A person with HIV who is undetectable is considered infectious. He/she is likely to transmit the virus to his/her partners through sexual intercourse. _____ True _____False

12. Daily PrEP can prevent HIV transmission through sex for up to more than 90%. _____ True _____False

13. Daily PrEP can reduce the risk of acquiring HIV among people who inject drugs by 30%. _____ True _____False

14. For PrEP to be effective against HIV infection should be taken once daily and should be taken continuously for 7 days before engaging in vaginal sex. _____ True _____False

15. Using condoms can prevent HIV transmission and other STIs. _____ True _____False

16. The use of condoms should be promoted to prevent HIV infection. _____ True _____False

17. The use of condoms should not be promoted if a person is on PrEP. _____ True _____False

18. A person who is at high risk for HIV and other STIs should be tested once a year for HIV. _____ True _____False

19. A person who has no sexual partner is not at risk for HIV. He/she should never be tested for HIV. _____ True _____False

20. Heterosexual men and women are not at risk for HIV infection and are not recommended for PrEP. _____ True _____False

21. There is no alternative to daily dosing of PrEP. Other PrEP dosing is ineffective to prevent HIV transmission. _____ True _____False

22. There is only one PrEP regimen available in the market to prevent HIV infection so it is easy to prescribe. _____ True _____False

---

**Section III. Enabling or Non-Stigmatizing Attitudes**

Direction: The following items are intended to measure people's opinions about issues surrounding HIV and AIDS and PrEP for adolescents. Responses will be used to gauge the enabling versus stigmatizing attitudes related to HIV and PrEP.

<table>
<thead>
<tr>
<th>Enabling Attitude Items</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree Nor</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement</td>
<td>Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>----------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In my opinion, persons living with HIV deserve their illness.</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People who are HIV positive should be encouraged to keep their diagnosis to themselves.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People who test positive for HIV should not engage in any sexual activity.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am uncomfortable providing care for an HIV infected person.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A person who is HIV positive should not be allowed to work as a health worker.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have the right to know the HIV status of the patients/clients in our practice/unit/department, including those who are not under my care.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am willing to work in the same unit/office with a colleague who is HIV-positive.</td>
<td></td>
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<td>Adolescents and young adults, including those below 18 years of age, who are at high risk of HIV infection, should be offered PrEP.</td>
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Appendix X. Post-Training Workshop Evaluation

Doctor of Nursing Practice – Family Nurse Practitioner
School of Nursing and Health Profession | University of San Francisco

Initiating PrEP in Primary Care: Addressing the AYA High-Risk Populations
Post-Training Workshop Evaluation Survey

Section I. Information About You
Direction: Please put a check on the box next to your answer on questions. Some of the other questions ask for answers in the form of written answers.

1. First and Last Name: ____________________________
2. What is your DNP Track: __________________________
3. Year of Birth: ____________
4. What is your gender? ___ Male ___ Female ___ Transgender ___ Other Identification
5. What is your sexual orientation: _____ Asexual _____ Bisexual _____ Homosexual/Gay _____ Heterosexual/Lesbian _____ Homosexual ___ Pansexual _____ Queer ___ Other; Specify: _______________ ___ Prefer not to answer

Section II. Evaluation of Presentations & Simulation Activities
Direction: Select all that apply. Please put a check on the line before your answer on question/statement. Some of the other questions ask for answers in the form of written answers.

As a result of participating in the session "Module 1: The Basic of STI, HIV and AIDS," I am able to:

_____ Define and differentiate STI, HIV, and AIDS
_____ Understand how HIV is transmitted from one person to another
_____ Correct misconceptions about HIV transmission
_____ Understand how HIV affects the body
_____ Learn how HIV and AIDS can be prevented as well as treated and managed

As a result of participating in the session "Module 2: Key Elements for Ethical and Effective HIV Prevention Counseling Practices," I am able to:

_____ Describe the importance of HIV counseling
_____ Identify the DOs and DONTs of HIV prevention counseling
_____ Describe key points in PrEP counseling
_____ Describe what is provider-initiated counseling and Testing (PICT)
_____ Describe what is client-initiated counseling and Testing (CICT)

As a result of participating in the session "Module 3: AYA and The SOGI Initiative," I am better able to:

_____ Describe the characteristics of adolescents and young adults (AYA), and transgender
AYA

______ Identify the health risks and solutions for AYA
______ Describe the difference of sex, sexual orientation, and gender identity.
______ Assess, plan, and intervene for an AYA client who may visit to our clinic for primary care

As a result of participating in the session “Module 4: Pre-Exposure Prophylaxis for AYA,” I am able to:

______ Describe what PrEP is, medication available, and its indication.
______ Describe PrEP effectiveness, side effects, and benefits.
______ Identify the barriers of PrEP use in adolescents and young adults.
______ Understand PrEP resources, guidelines, and algorithm.
______ Develop confidence to prescribe PrEP in our practice

<table>
<thead>
<tr>
<th>Enabling Attitude Items</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree Nor Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presenter: Igor Mocorro, MPH, RN, PHN. This speaker’s presentation skills were effective for the content presented.</td>
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<tr>
<td>Overall, I believe my knowledge and confidence to prescribe PrEP to adolescents and young adults in my practice has increased.</td>
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</table>

List at least 3 changes that you will initiate in your practice related to advancing the health of adolescents and young adults?
1) __________________________________________________________________________
2) __________________________________________________________________________
3) __________________________________________________________________________

Any comments about the simulation activity today? ________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________

Section III. Knowledge About HIV and PrEP
Direction: True or False. Please put a check on the line next to your answer on questions.

1. HIV is preventable. _____ True _____ False
2. HIV infection is curable. A person infected with HIV can access cure at treatment clinics or hospitals. _____ True _____ False
### Section IV. Enabling or Non-Stigmatizing Attitudes

Direction: The following items are intended to measure people's opinions about issues
surrounding HIV and AIDS and PrEP for adolescents. Responses will be used to gauge the enabling versus stigmatizing attitudes related to HIV and PrEP.

<table>
<thead>
<tr>
<th>Attitude Items</th>
<th>Strongly Agree</th>
<th>Agree</th>
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<th>Strongly Disagree</th>
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<tbody>
<tr>
<td>In my opinion, persons living with HIV deserve their illness.</td>
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<tr>
<td>People who are HIV positive should be encouraged to keep their diagnosis to themselves.</td>
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<tr>
<td>People who test positive for HIV should not engage in any sexual activity.</td>
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<tr>
<td>I am uncomfortable providing care for an HIV infected person.</td>
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<tr>
<td>A person who is HIV positive should not be allowed to work as a health worker.</td>
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<tr>
<td>I have the right to know the HIV status of the patients/clients in our practice/unit/department, including those who are not under my care.</td>
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<tr>
<td>I am willing to work in the same unit/office with a colleague who is HIV-positive.</td>
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### Appendix Y. Clinicians Knowledge on HIV and AIDS, and PrEP (n=19)

<table>
<thead>
<tr>
<th>Knowledge Items</th>
<th>Correct Responses (%)</th>
<th>Pre-Test</th>
<th>Post Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV is preventable. (T)</td>
<td></td>
<td>19 (100)</td>
<td>19 (100)</td>
</tr>
<tr>
<td>Daily PrEP can prevent HIV transmission through sex for up to more than 90%. (T)</td>
<td></td>
<td>19 (100)</td>
<td>19 (100)</td>
</tr>
<tr>
<td>The use of condoms should be promoted to prevent HIV infection. (T)</td>
<td></td>
<td>19 (100)</td>
<td>19 (100)</td>
</tr>
<tr>
<td>The use of condoms should not be promoted if a person is on PrEP. (F)</td>
<td></td>
<td>19 (100)</td>
<td>19 (100)</td>
</tr>
<tr>
<td>If a person has a sexually transmitted infection (STI), his/her chance of</td>
<td></td>
<td>18 (95)</td>
<td>19 (100)</td>
</tr>
<tr>
<td>getting HIV is higher. (T)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Heterosexual men and women are not at risk for HIV infection and are not</td>
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<td>18 (95)</td>
<td>19 (100)</td>
</tr>
<tr>
<td>recommended for PrEP. (F)</td>
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<td></td>
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<tr>
<td>A person who has no sexual partner is not at risk for HIV. He/she should never</td>
<td></td>
<td>17 (89)</td>
<td>19 (100)</td>
</tr>
<tr>
<td>be tested for HIV. (F)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using condoms can prevent HIV transmission and other STIs. (T)</td>
<td></td>
<td>16 (84)</td>
<td>19 (100)</td>
</tr>
<tr>
<td>Truvada is the only PrEP regimen available in the market to prevent HIV infection so it is easy to prescribe PrEP. (F)</td>
<td></td>
<td>11 (58)</td>
<td>19 (100)</td>
</tr>
<tr>
<td>There is no alternative to daily dosing of PrEP. Other PrEP dosing is</td>
<td></td>
<td>10 (53)</td>
<td>19 (100)</td>
</tr>
<tr>
<td>ineffective to prevent HIV transmission. (F)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>HIV infection is curable. A person infected with HIV can access cure at</td>
<td></td>
<td>17 (89)</td>
<td>18 (95)</td>
</tr>
<tr>
<td>treatment clinics or hospitals. (F)</td>
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<tr>
<td>After a needle prick injury with a needle from an HIV-infected person, a</td>
<td></td>
<td>16 (84)</td>
<td>18 (95)</td>
</tr>
<tr>
<td>health worker may take HIV medications to reduce the chance of contracting HIV</td>
<td></td>
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<tr>
<td>infection. (T)</td>
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<tr>
<td>One can be identified as HIV-positive by the way the person looks (e.g.</td>
<td></td>
<td>17 (89)</td>
<td>18 (95)</td>
</tr>
<tr>
<td>signs and symptoms like skin ulcers, weight loss). (F)</td>
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<tr>
<td>A person will automatically get infected with HIV once he/she has sexual</td>
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<td>18 (95)</td>
<td>18 (95)</td>
</tr>
<tr>
<td>intercourse with a person living with HIV. (F)</td>
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<tr>
<td>There is a vaccine available to prevent HIV infection.</td>
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<td>18 (95)</td>
<td>17 (89)</td>
</tr>
<tr>
<td>After needle prick injury with a needle from an HIV-infected person, the</td>
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<td>13 (68)</td>
<td>17 (89)</td>
</tr>
<tr>
<td>chance of contracting HIV is less than 1%.</td>
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<tr>
<td>Children born to HIV-positive women are infected with HIV at birth.</td>
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<td>15 (79)</td>
<td>16 (84)</td>
</tr>
<tr>
<td>A person with HIV who is undetectable is considered infectious. He/she is</td>
<td></td>
<td>7 (37)</td>
<td>12 (63)</td>
</tr>
<tr>
<td>likely to transmit the virus to his/her partners through sexual intercourse.</td>
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</tr>
<tr>
<td>A person who is at high risk for HIV and other STIs should be tested once a</td>
<td></td>
<td>0 (0)</td>
<td>11 (58)</td>
</tr>
<tr>
<td>year for HIV.</td>
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</tr>
<tr>
<td>After needle prick injury with a needle from an HIV-infected patient, immediately gently expressing blood from the puncture site reduces the risk of contracting HIV infection.</td>
<td></td>
<td>9 (47)</td>
<td>11 (58)</td>
</tr>
<tr>
<td>Daily PrEP can reduce the risk of acquiring HIV among people who inject drugs by 30%.</td>
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<td>4 (21)</td>
<td>7 (37)</td>
</tr>
<tr>
<td>For PrEP to be effective against HIV infection should be taken once daily and</td>
<td></td>
<td>4 (21)</td>
<td>7 (37)</td>
</tr>
<tr>
<td>should be taken continuously for 7 days before engaging in vaginal sex.</td>
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