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Health Provider Academic Detailing to increase knowledge of PrEP for HIV Prevention

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Health Provider Academic Detailing to Increase Knowledge of PrEP for HIV Prevention

A Scholarly Project Presented to the Faculty of the
Nicole Wertheim College of Nursing and Health Sciences

Florida International University

In partial fulfillment of the requirements
For the Degree of Doctor of Nursing Practice

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Abstract

Pre-exposure prophylaxis (PrEP) to prevent the transmission of human immunodeficiency virus (HIV) is an important tool for reducing population HIV infection rates. PrEP has systemic implications for improving patient and population health as well as for reducing the medical costs to provide care for the HIV infected patient. In many instances, provider knowledge of PrEP serves as a primary limitation for recommending this treatment for patients. To overcome these issues, a quality improvement project was designed utilizing a quasi-experimental pre-/post-intervention methodology to compare two approaches to provider education to increase PrEP knowledge: a pamphlet and academic detailing. Providers in the pamphlet group (n = 15) received passive education to increase knowledge while providers in the academic detailing group (n = 15) received individualized one-on-one education to acquire knowledge of PrEP. Baseline knowledge of PrEP was measured in both groups and paired t-tests were utilized to determine if statistically significant changes in provider knowledge of PrEP occurred following the educational intervention. Both groups demonstrated an increase in knowledge following education. However, when the mean knowledge scores for the pamphlet and the academic detailing group were compared, knowledge gains were noted to be higher in the academic detailing group. The results were shown to be statistically significant (p = 0.001). Limitations of the project included a lack of generalizability of the findings along with the need to demonstrate causality in the findings. Based on the results obtained and the limitations recommendations are made to expand investigation into provider education for PrEP prescribing while also providing follow-up assessments to determine if increased provider education does lead to increased patient access to PrEP via provider prescribing.

Keywords: HIV/AIDS, PrEP, provider education, academic detailing
Health Provider Academic Detailing to Increase Knowledge of PrEP for HIV Prevention

Pre-exposure prophylaxis (PrEP) to prevent the transmission of human immunodeficiency virus (HIV) has been identified in the literature as a potential game changer for improving public health and eradicating the proliferation of this deadly disease (Coelho et al., 2019). PrEP involves the use of oral antiretroviral medications (tenofovir-emtricitabine) to prophylactically prevent the spread of HIV in high-risk groups including men who have sex with men (MSM), transgender women, injection drug users, commercial sex workers (CSW), and heterosexual men and women who are at greater risk for contracting the virus (Coelho et al., 2019). Current evidence indicates that PrEP is both well-tolerated and highly effective (Nunn et al., 2017). In one study conducted by Siegler et al. (2018), the authors found that in MSM, consistent use of PrEP resulted in a 44% reduction in HIV transmission. Further, Siegler et al. report that in injection drug users, HIV transmission was reduced by 61% with consistent adherence to PrEP.

Even though PrEP appears to be an important tool for reducing the transmission of HIV, the reality is that patient use of this treatment continues to lag behind public health expectations (Siegler et al., 2018). Low uptake of PrEP among at-risk groups has been attributed to a myriad of factors including access to the medication, patient awareness/education about the medication, affordability of the treatment, social stigma associated with treatment, and the potential for medication side-effects (Sullivan & Siegler, 2018). While these barriers to patient access to PrEP appear to focus on challenges facing the patient, in actuality there is more that providers can do to educate and inform patients about PrEP (Sullivan & Siegler, 2018). Patient education has been noted in the literature to have a positive impact on sexual health behavior, especially among
high-risk populations (Zhang et al., 2019). Given this reality, it would seem that efforts are needed to provide patient education to increase patient uptake of PrEP.

While the idea of providing patient education for PrEP use appears to be one that is grounded in the evidence, there are some caveats when it comes to providing this education. In particular, scholars note that many providers lack knowledge of PrEP and optimal methods for educating patients about the medication (Turner et al., 2018). Mayer et al. (2018) argue that because PrEP was only formally approved by the Food and Drug Administration (FDA) in 2012, many providers have not been educated or informed about this treatment. Additionally, Mayer et al. report that models for care delivery, including educating patients about PrEP, have not been formally established, leaving providers with a significant knowledge gap when it comes to both knowledge of PrEP and how to engage patients in a conversation about this treatment. These barriers, according to Mayer et al., continue to adversely impact patient knowledge of treatment and subsequent uptake and use of PrEP.

The lack of provider knowledge regarding PrEP and how to provide patient care utilizing this intervention is a significant barrier to improving individual and population health. Identifying a means to overcome this barrier will be imperative to increasing uptake of PrEP and further reducing the transmission of HIV within the population. In recent years, academic detailing has emerged as a potential educational tool that may be useful for both improving provider knowledge of new clinical topics (Gale et al., 2019) and for educating providers about PrEP to improve patient care (Wei & Raymond, 2018). Academic detailing, a process by which government groups, civil servants, or healthcare interest groups employ marketing practices to improve clinical practice is a major approach that can increase clinicians’ knowledge about PrEP, and its subsequent integration into patient care (Ard et al., 2019). Through the use of
academic detailing, it may be possible to increase provider knowledge of PrEP, leading to greater uptake of this treatment among patients (Wei & Raymond, 2018).

With the realization that academic detailing could provide a useful pathway forward for improving provider knowledge of PrEP, there is an impetus to consider if this potential solution could reduce provider barriers that limit patient knowledge and uptake of this treatment. Using this background as a starting point for investigation, the purpose of this Doctor of Nursing Practice (DNP) quality improvement project is to evaluate the use of academic detailing as a means for increasing provider knowledge of PrEP. Included in this document is a comprehensive overview of the project including a review of the background and literature to support the quality improvement project, a clinical PICO (population, intervention, comparison, outcome) question to guide the research based on the literature, the theoretical foundation for the project, the methodology employed to conduct the project, a review of the results, and a discussion of the results and their implications for advanced nursing practice.

**Problem Statement**

Despite the availability of PrEP for preventing the spread of HIV, there are numerous barriers limiting patient uptake of this treatment (Sullivan & Siegler, 2018). Although it would initially seem that the barriers stem from patient issues such as lack of knowledge and awareness regarding PrEP, as well as social stigma associated with treatment, the reality is that these barriers can be addressed through changes to provider practice to raise patient awareness and to help reduce the stigma associated with seeking care (Sullivan & Siegler, 2018). What this suggests is that increasing PrEP uptake among patients can be influenced by the actions taken by providers to educate, inform, and speak honestly about what can be done to improve and
promote patient health. Therefore, increasing provider knowledge of PrEP could markedly increase the number of patients who are willing to accept and adopt this treatment.

Academic detailing has been highlighted in the literature as a potential means to improve provider knowledge of PrEP (Wei & Raymond, 2018). As noted in the introduction to this work, there is a paucity of provider education tools and models for integrating PrEP into the care of patients (Mayer et al., 2018). Reducing barriers to PrEP uptake among patients will require healthcare providers to not only provide education to patients, but also to provide education in a way that is sensitive to the specific needs and challenges facing the patient. Thus, the problem of poor provider knowledge and use of PrEP in practice could potentially be addressed through the use of academic detailing.

**Significance**

The significance of the problem can be seen when reviewing the national and global scope of HIV infections and their implications for society. Data provided by the Centers for Disease Control and Prevention ([CDC], 2020) indicate that in 2018, a total of 37,968 individuals in the United States received a diagnosis of HIV. This represents a 7% decline in the total number of new HIV infections from 2014 through 2018 (CDC, 2020). Although a reduction in HIV rates nationally indicates a positive trend for public health, the CDC notes that at-risk groups, including MSM and injection drug users, continue to be disproportionately impacted by the virus. Combined, these two groups accounted for 66.6% of all new HIV infections in 2018 (CDC, 2018). What this indicates is that in at-risk groups challenges exist for reducing the spread of the virus.

Even though the number of total HIV infections continue to decline in the U.S., this has not been the case globally. Data provided by the World Health Organization ([WHO], 2020...
indicate that globally 76 million people have been infected with HIV and approximately 38 million people worldwide were living with the virus. The WHO further reports that African nations remain the most severely impacted by this public health threat. Specifically, the organization reports that of the 3.7% of the world’s population infected with HIV, two-thirds currently live in Africa. While the rates of infection in African nations varies dramatically, collective epidemiological evidence indicates that on average, HIV infection rates increase 5.5% annually across the continent (Kharsany & Karim, 2016). Challenges in controlling the spread of HIV in Africa have raised concerns that HIV could, in the future, become a resurgent virus adversely impacting developed nations such as the United States (Kharsany & Karim, 2016).

Because there is currently no vaccine to prevent the spread of HIV, and further because there is no cure for the disease, public health experts have argued that eradication of the disease will require extensive efforts to stop the transmission of the virus (Fauci et al., 2019). Pre-exposure prophylaxis has the potential to markedly diminish the spread of HIV within the population. The efficaciousness of this treatment has been demonstrated in real world settings. Specifically, in the introduction to this work, data provided by Siegler et al. (2018) was reviewed, demonstrating that in high-risk populations including MSM and injection drug users, PrEP reduced the transmission of HIV by 44% and 61% respectively. The efficacy of PrEP has consistently been touted in the literature and according to Pyra et al. (2019), PrEP has been adopted as a part of global evidence-based practice guidelines as a front-line recommendation for those who are at-risk for contracting HIV.

Based on this information, the significance of increasing patient uptake of PrEP becomes more evident. While HIV transmission rates are declining in the U.S., in African nations the virus transmission is surging with the potential to have global implications. There is no cure for
the disease and the only method for eradicating the condition is through reducing and eliminating
the transmission of the virus. While barrier protections (i.e., the use of condoms) during sex have
been useful, achieving complete cessation of virus transmission is the only current method for
eradicating this disease and improving individual and population health.

Summary of the Literature

To provide the needed evidence base to support practice change, a review, critique, and
summary of the literature on the topic and proposed solution—academic detailing—is required.
The literature search for this project began with the identification of scholarly academic
databases that could be used to locate information on the topics of PrEP and academic detailing.
Included in this section is a review of the literature search process as well as the results obtained,
and a summary of the evidence to support the project.

Databases Searched and Data Abstraction

The literature search for this project began with the identification of five electronic article
databases for locating evidence to support a practice change. These databases included:
PUBMED, EBSCOHost, Cochrane, CINAHL, and GOOGLE SCHOLAR. Key search terms for
the literature search included: PrEP, pre-exposure prophylaxis, provider knowledge, education,
training, and academic detailing. Limiters were placed on the initial search to include articles that
were published within the last 10 years (2010-2020) in full-text peer-reviewed journals written in
English. A data abstraction table reviewing the number of articles retrieved from each database
can be found in Appendix A. The data abstraction table indicates that across all databases, 432
abstracts were retrieved. Of these articles, 239 were duplicates and 154 were excluded as
irrelevant to the project. The remaining 39 articles were subjected to full-text review and eight
were retained for this project.
Literature Appraisal and Literature Matrix Table

The eight articles reviewed for this project were initially critiqued using a literature matrix table which can be found in Appendix B. The studies were reviewed based on their relevance to the project—i.e., education to improve staff knowledge of PrEP and academic detailing to improve staff knowledge and knowledge of PrEP—and in relation to Melnyk and Fineout-Overholt’s (2019) hierarchy of evidence. The literature included a combination of articles demonstrating the role of education in increasing provider knowledge of, and integration of, PrEP in practice, as well as the use of academic detailing to increase healthcare provider knowledge, including knowledge of PrEP.

Literature Synthesis

A synthesis of the literature is provided here and includes a review of article critiques found in Appendix B. Overall, the literature demonstrates that there is remarkable support for both educating providers to increase their knowledge and integration of PrEP into practice (Blumenthal et al., 2015; Brant et al., 2020; Henry et al., 2019; Zhang et al., 2018) as well as for utilizing academic detailing to improve provider knowledge and use of new clinical interventions (Pittenger et al., 2015; Safi et al., 2017) as well as for knowledge and use of PrEP for managing patient care (Chartier et al., 2018; Edelman et al., 2020). To demonstrate the scope of the research and its limitations, a thorough review of the studies located for the literature review is provided here.

Education of Providers for PrEP

The first theme identified through the literature review focused on the importance of provider education in increasing the use of PrEP for the treatment of patients at high risk for HIV. Blumenthal et al. (2015), in a Level IV cross-sectional study, surveyed 233 providers to
assess how knowledge of PrEP and HIV care influenced provider use of PrEP in practice. The sample was recruited from a group of providers attending medical conferences and included an online survey. Of the providers participating in the study, 122 were HIV care providers and had extensive knowledge of the topic and 111 providers had no or little knowledge or experience with HIV care or PrEP. The results of this survey indicated that higher levels of provider knowledge were associated with higher levels of PrEP prescribing when comparing the two groups. These results were statistically significant (p < 0.001) indicating that provider knowledge and training are important features of integrating PrEP into the care of patients at-risk of HIV.

The study was limited by its methodological weaknesses that would impact generalizability of the findings: i.e., small sample, single group of providers, etc. The study also fails to demonstrate causality of improving provider knowledge or use of PrEP in practice.

Other scholars, including Brant et al. (2020), have also been able to demonstrate the role that provider education plays in increasing provider ability to integrate PrEP into care. In this Level III, quasi-experimental study without control, Brant and coauthors reviewed data from care encounters that occurred at a family planning center before and after staff education regarding PrEP and prescribing for patients. In total, 640 care encounters, including 515 patients, were examined following the educational program to assess PrEP prescribing and patient screening for PrEP. These results were compared with baseline rates of PrEP prescribing and screening. The results indicated that two months following the educational program, PrEP prescribing increased from 10% to 65%. Further, screening for PrEP increased from 50% to 98.4%. The results demonstrate that staff education works to increase PrEP integration into care. Although this study supports the current project it is methodologically weak with internal validity impacted by a small sample size and the use of a convenience sample.
Additional evidence provided by Henry et al. (2019), further demonstrates the importance of provider education/training to increase patient uptake of PrEP. In this Level IV, cross-sectional correlational study, Henry et al. compared healthcare provider self-reports of HIV and PrEP training to evaluate how education levels impact PrEP prescribing. A total of 820 primary care providers recruited from the IQVIA® provider database were included in the study, which consisted of an online survey created by the study authors. The results indicate that of those surveyed, only 36.3% reported specific training in HIV care and PrEP use. Further, when comparing provider groups based on knowledge levels, the authors found that those with HIV-related training were more likely to prescribe PrEP: aPR [adjusted prevalence ratio] = 1.75, 95% CI 1.10, 2.78. While this illustrates the importance of provider education in improving patient uptake of PrEP, the research is limited in terms of its generalizability of results to providers other than physicians and the lack of causality to demonstrate a quantifiable impact of provider education on PrEP prescribing.

A final study by Zhang et al. (2018) was located, highlighting the need for provider education to integrate PrEP into patient education and care. Zhang and colleagues utilized a Level IV, cross-sectional study to evaluate barriers impacting the ability of providers to deliver patient education and prescriptions for PrEP. The sample for this project included 54 county and district health departments operating in North Carolina. An online web-based survey created by the study authors was employed for data collection. The results indicated that provider education and training was noted to be a significant issue of concern among health centers regarding PrEP prescribing. Of the 54 participants in the study, a majority (68%), reported that education was the top resource needed for providers to feel comfortable prescribing PrEP for patients at-risk for HIV.
Academic Detailing in Healthcare

The intervention selected for use in this evidence-based practice project was academic detailing. Although literature regarding the use of academic detailing for improving provider knowledge of PrEP is scant—as both PrEP and academic detailing are relatively new in terms of their use in practice—evidence supporting the use of academic detailing as an effective method of healthcare provider training and education has begun to proliferate (Pittenger et al., 2015; Safi et al., 2017). Consequently, it is helpful to review how academic detailing for healthcare providers is currently being used, and further, how the approach is being used in the treatment of patients with HIV and to expand the use of PrEP.

Evidence provided by Pittenger et al. (2015) suggests that provider academic detailing can be used to improve antibiotic stewardship. Pittenger and coauthors conducted a Level IV, retrospective time series study to evaluate antibiotic prescribing rates, patient outcomes, and costs following the implementation of an academic detailing program for improved antibiotic stewardship. The program was implemented in a single health system in the Pacific Northwest and included a review of 54,283 total infections from baseline to post-program implementation. The results of the study indicated that following academic detailing, there was a 16.5% decline in antibiotic prescribing rate (95% CI, 0.205 to 0.125; P < .001). The study also demonstrated a decline in the need for follow up care by 8.3% and a total cost savings over the study period of $175,000. Despite these results, the study is limited by the use of a single site which may compromise generalizability of the findings. Further, the study did not use a comparison or control group.

In a similar vein of inquiry, Safi et al. (2017) employed a Level III, quasi-experimental study without control to increase HIV screening rates among providers working in Baltimore,
Maryland. The purpose of this study was to evaluate changes in HIV screening rates before and after the use of an academic detailing plane. A total of 85 clinic sites in Baltimore, Maryland, were targeted and 208 providers received training via academic detailing. The results indicated a high level of provider satisfaction with academic detailing, with 96.7% of providers reporting high levels of satisfaction. Data also indicate that among providers receiving training there had been an increase in HIV screening by 74.4%. The study supports the use of academic detailing to improve provider knowledge and practice. However, there are important study limitations, including the lack of representativeness in the sample and the lack of evidence to support causation, between academic detailing and provider knowledge and practice change.

**Academic Detailing for PrEP**

As noted, evidence supporting the use of academic detailing for improving provider knowledge of PrEP is limited. However, two studies evaluating this topic were located as part of this literature review (Chartier et al., 2018; Edelman et al., 2020). The first study by Chartier et al. (2018) involved a Level IV, retrospective analysis of programs initiated at the Veterans Health Administration (VHA) to provide care for individuals at-risk for contracting HIV. This analysis included 1,600 patients identified as at-risk for HIV, with the authors noting that a combination of staff education strategies was used to increase PrEP uptake among these at-risk patients. Combined, the VA employed three approaches to increasing provider knowledge of PrEP: virtual training modules, academic detailing, and PrEP bootcamp. The methods, when evaluated collectively, demonstrated an increase in PrEP prescribing by 60% among all at-risk veterans identified. While the specific impact of academic detailing is not provided, the results do suggest that academic detailing can be an important component of provider education to increase patient uptake of PrEP.
Edelman et al. (2020) have also examined the use of academic detailing for PrEP education among providers. In this Level IV, cross-sectional study, 240 primary care providers recruited from a national professional organization completed an online survey regarding preferred methods for PrEP education and use in practice. Among those surveyed, 85% expressed an interest in integrating PrEP into practice. Further, the majority (43%) expressed an interest in the use of academic detailing to provide this education. The results of this study demonstrate that providers support the use of academic detailing to be educated about PrEP, suggesting that academic detailing would be a helpful support for meeting the educational needs of providers regarding this topic. Although the study supports the use of academic detailing for increasing provider knowledge of PrEP, the study does not demonstrate a correlation between academic detailing and improved provider knowledge of PrEP.

**Purpose/PICO/Objectives**

The purpose of this quality improvement project was to increase healthcare provider knowledge of PrEP via the use of academic detailing. To provide a formal statement of the guiding clinical question for this project, the following PICO question was formulated:

- Among primary care providers (P), does the use of PrEP training through academic detailing via Zoom regarding PrEP use and prescribing (I) compared with education through standard care (a pamphlet) (C) increase knowledge for integrating PrEP into patient care (O)?

The population includes primary care providers, while the intervention involves the use of academic detailing provided via Zoom. The comparison group included providers who are educated using standard educational tools such as a pamphlet regarding PrEP. The outcomes
measured include increased provider knowledge regarding the integration of PrEP into patient care.

With the purpose and PICO question stated, it is possible to review the objectives for this quality improvement project. Objectives for the project were as follows:

- To successfully recruit 30 primary care providers for participation in the quality improvement project.
- To create an academic detailing program that can be delivered to providers.
- To measure provider baseline knowledge of PrEP and to compare baseline data to provider knowledge following education either through academic detailing or standard education (i.e., a pamphlet on PrEP).

**Definition of Terms**

To facilitate understanding of the project, it is essential to define terminology specific to the project. For the purposes of this project, the following terms were defined:

- Pre-exposure prophylaxis or PrEP: This term refers to a specific pharmacological treatment using low-dose antiretroviral medications to help prevent the spread of HIV among at-risk populations (Wei & Raymond, 2018).
- At-risk populations: In general, at risk populations are defined as individuals who are more likely to contract a specific disease or illness (Coelho et al., 2019). In the current project, at-risk populations for the transmission of HIV include men who have sex with men (MSM), transgender women, injection drug users, commercial sex workers (CSW), and heterosexual men and women who are at greater risk for contracting the virus (Coelho et al., 2019).
• Academic detailing: Academic detailing has been noted in the literature to involve the use of an educational outreach program designed to improve physician prescribing practices through a peer-to-peer format (Smart et al., 2020).

**Conceptual Underpinning and Theoretical Framework**

Experts reviewing the use of evidence-based practice assert that this foundation for practice is strengthened through the use of conceptual underpinnings and a theoretical framework for building practice change (Roy, 2018). With these issues in mind, it is useful to consider the current project in the context of a conceptual/theoretical framework. For the purposes of this quality improvement project, Jean Watson’s theory of human caring was selected for use. A review of the theory is provided here along with a consideration of the clinical fit of the theory.

**Theory Overview**

Information regarding Jean Watson’s theory of human caring indicates that this paradigm is classified as a grand theory of nursing. As further noted by Masters (2015), the purpose of Watson’s theory is to help the patient attain a higher level of mind-body-spirit integration through a holistic approach to care. This outcome is sought through the use of 10 carative factors that should result in the development of transpersonal caring moments (Masters, 2015). The 10 carative factors are broadly focused on actions of the nurse such as instilling faith and hope, building sensitivity to others, supporting the patient through the care environment, building altruistic values, fostering problem solving through patient and education, and allowing human factors to shape care interactions (Masters, 2015).

Additional concepts foundational to Watson’s theory include the caring moment, caring occasion, and transpersonal healing (Masters, 2015). Watson argued that nurses could use the 10 carative factors, or *caratis*, to engage in a caring moment with the patient. Caring moments,
when combined, would result in a caring occasion that could have transformative impact on the nurse and patient (Masters, 2015). This transformative impact on patient health, termed transpersonal healing, should provide a holistic foundation for both improving the relationship between provider and patient and further improving the care and health of the patient (Masters, 2015). Under this theory, it is believed that nurses and other healthcare providers can transform the care of the patient simply through the caring actions that are taken when interacting with the patient (Masters, 2015). Thus, if healthcare providers incorporate the 10 *caratís* in practice, the end result should be deeper connections with patients leading to better health outcomes for the patient.

**Clinical Fit**

The clinical fit of Watson’s theory to the current quality improvement project stems from an understanding of academic detailing and its purpose in provider education. As described in the literature, academic detailing involves a personalized one-on-one approach to provider education that helps to connect the provider with new knowledge to change clinical behavior (Van Hoof et al., 2018). Academic detailing has been associated with improving provider knowledge and creating a more personal attachment to the content provided during education (Van Hoof et al., 2018). By promoting such a deep connection between the provider and the material taught, providers often experience a behavioral change that results in improvements in practice (Van Hoof et al., 2018).

Academic detailing, in and of itself, represents an expression of Watson’s theory of human caring. Specifically, the process involves the ability of the educator providing the intervention to work directly with the provider to build knowledge and understanding of the topic. While Watson’s theory fits in this context, what is also evident is that academic detailing
has the potential to help providers better connect with their patients to provide screening (Safi et al., 2017) and to increase patient uptake of PrEP (Chartier et al., 2018). What this suggests is that by providing education to healthcare professionals through the use of academic detailing, there should be an increase in the ability of the provider to experience transpersonal caring moments with the patient when providing care.

**Theory Evaluation**

Theory evaluation in nursing is noted to be an essential component of building nursing knowledge (Im, 2015). Theory connects what is done in the clinical setting with the scientific and philosophic foundations of nursing (Im, 2015). Because theory evaluation is such an important component of building nursing knowledge, it is imperative to review Watson’s theory. Included in this section on theory evaluation is a consideration of Watson’s theory in terms of operationalization, application, performance, relationship, level of congruence, and theory tools.

**Theory Operationalization**

Theory operationalization refers to the degree to which a theory can be translated into clinical practice (Utley et al., 2018). As noted, when introducing Watson’s theory of human caring, this paradigm is a grand nursing theory (Masters, 2015). Information regarding grand theories in general suggests that when it comes to operationalizing these theories for the direct care of patients, the abstract nature of grand theories can limit their operationalization in practice (McEwen & Wills, 2017). Grand theories in nursing are noted as being abstract and being useful for conceptualizing patient care, rather than for directing the care of the patient at the bedside (McEwen & Wills, 2017).

A review of the literature regarding the operationalization of Watson’s theory of human caring suggests that while Watson’s theory has been used as an umbrella to guide the care of the
patient (Clark, 2016), the theory has been used in more specific ways to direct the clinical practice of the nurse (Arslan-Ozkan et al., 2014). Considering first the operationalization of the theory as an umbrella for guiding practice, Clark (2016) notes the use of Watson’s theory to create a foundation for transpersonal education by raising the awareness of educators regarding connections with learners. Clark asserts that this process serves to deepen understanding of the educator regarding the importance of caring moments and occasions to integrate more of these instances in education of the student.

Even though grand theories can be difficult to operationalize in terms of concrete measures and outcomes, Arslan-Ozkan et al. (2014) established a framework for utilizing Watson’s 10 carative factors to reduce distress caused by infertility in women of childbearing age. The intervention provided to help alleviate distress was based on Watson’s theory of human caring, indicating that elements of the theory can be operationalized to influence the direct care of the patient. Based on these results, it is possible to see that while operationalization of Watson’s theory may prove challenging, nurses have found ways to integrate concepts from the theory into the care provided to the patient at the bedside. Consequently, it would be fair to argue that Watson’s theory has a moderate degree of operationalization.

**Theory Application**

Theory application involves an examination of how a selected theory has been used in research and practice both in nursing and healthcare (Utley et al., 2018). A review of current evidence on the application of the theory suggests that it has been utilized in both framing research studies and in building interventions for clinical practice (Wei et al., 2019). In studies in which Watson’s theory has been used as a conceptual underpinning, Wei et al. (2019) acknowledge that the theory serves as the basis for guiding the development of research
Theories of practice, while also serving as a foundation for reviewing study results. The former has implications for how studies are carried out in clinical settings, while the latter has implications for how the results of a study are interpreted (Wei et al., 2019). Application of the theory to practice results in the development of theory focused interventions which test the utility of Watson’s theory in improving the care of the patient through the actions taken by the nurse (Wei et al., 2019).

**Theory Performance**

Theory performance relates to the degree to which the concepts of a theory can be evaluated and utilized in practice (Utley et al., 2018). Watson’s theory is noted to be a grand theory, suggesting that the theory performance may not be significant given challenges with operationalizing the theory in clinical practice. Even though Watson’s theory is limited in its overall application to practice, scholars have noted that elements of the theory perform quite well when translated into practice (Pajnkikar et al., 2017). In particular, Watson’s 10 carative factors have been noted to have tangible and salient characteristics that enable them to be learned and incorporated into the care of the patient. While direct measures of Watson’s theory are limited, the application of Watson’s theory to various care situations does suggest that improvements in outcomes for patients including greater satisfaction with care (Tektas as & Cam, 2017), increased patient self-efficacy (Arslan-Ozkan et al., 2014), and greater trust in the provider (Wolf & France, 2017) are possible through the use of Watson’s theory to guide nursing care and the interventions that are provided to the patient.

**Theory Relationship**

The efficacy of PrEP prescription in clinical care is based on appropriately utilizing expertise and knowledge from academic detailing. According to Raifman et al. (2020), clinicians
can gain patient trust when they can adequately identify needs and adopt the necessary methods and approaches to meet them. Therefore, the relationship between academic detailing to improve knowledge for better utilization of PrEP and Watson’s theory of human caring has notable salience. Transpersonal caring relationships emphasized by Watson require holistic understanding of the needs of at-risk patients, such as MSM, CSW, and injection drug users. Despite changes in provider awareness, attitudes, and practice change regarding HIV and other subjects, little research on the effects of academic detailing on PrEP has been done. The effectiveness of this education intervention in a community of primary care providers and medical students could provide insight into the impact of provider awareness and ability to screen for and use PrEP in clinical practice (Raifman et al., 2020).

**Level of Congruence**

Wei and Watson (2019) note that Watson’s theory presupposes that caring is based on an interpersonal relationship that can meet patient needs. Additionally, the theory posits that humans cannot be separated from the self, others, and nature. Further, carative factors, such as trust, embrace, inspiration, and forgiveness, cement the nurse-client relationship necessary to meet patient needs (Wei & Watson, 2019). Similarly, as a peer-to-peer educational approach, academic detailing involves sessions that strengthen engagement with healthcare providers, translating into patient care because it builds understanding, trust and work ethics, and thus congruence. Jean Watson's theory of caring encompasses the manner in which nurses give treatment to patients and the manner in which the care develops to create a strategy that supports an individual’s wellbeing and well-being while both preventing disease and restoring the patient’s health. Nursing, according to Watson’s theory, seeks to promote fitness, avoid infections, care for the sick, and restore health (Wei &Watson, 2019).


Theory Tools

Few tools are available for empirically quantifying Watson’s theory. Brewer and Watson (2015) note the development of the Watson Caritas Patient Score (WCPS) survey to assess and quantify the use of the 10 carative factors in nursing professionals. Although the instrument has demonstrated a high level of internal consistency with a Cronbach alpha of .90, the instrument has not been widely disseminated or used in diverse provider or nursing populations (Brewer & Watson, 2015). Although the lack of empirical measurement tools for the theory may limit the ability of nurses to directly measure the outcomes of applying Watson’s theory in direct care, for the purposes of this quality improvement project, the goal is not to quantify the impact of the theory on patient care or outcomes. Rather, in this project, Watson’s theory will be used to guide an understanding of the methodology and the results.

Methodology

The methodology used for research or quality improvement is typically dictated by the topic being investigated, the data available, and ethical concerns regarding the use of human subjects in research (Creswell, 2015). The topic, which is summarized through the PICO question, indicates that what was being sought through this project was an evaluation of provider knowledge scores before and following academic detailing (or education as usual). This suggests the need for a quantitative approach to investigating the topic as numerical data is sought (Creswell, 2015). A review of quantitative methodologies suggested that a randomized controlled trial (RCT) was be useful for conducting this quality improvement project (Creswell, 2015). To justify the use of this methodology and further provide a description of the approach that was used in this project, the following section includes a review of the setting and
participants for the project, a description of the methodology, and protection of human subjects, as well as how data will be collected and managed for this project.

**Setting and Participants**

The setting for this project was the Rapid Access Wellness (RAW) clinical office program at the University of Miami. The RAW program currently provides HIV prevention and PrEP for community residents. The program was initiated to serve high-risk communities operating in the Miami-metro area. Project sponsors at the site include Dr. Doblecki-Lewis and Jessica Morel, who provided guidance for delivering academic detailing to primary care providers working in the community. Using current partnerships between the RAW clinic and healthcare organizations operating in Miami, primary care providers (PCPs) were recruited to participate in an educational program for PrEP. Half of the providers were assigned to academic detailing and half of the providers were assigned to standard education, which will include providing a pamphlet and answering any questions the provider may have had regarding PrEP treatment.

Ideally, the goal of the project was to recruit 30 primary care providers and randomize them to either a control (standard education through pamphlet) or experimental (academic detailing) group. This number was selected due to the time constraints of the project. Academic detailing must be provided in a one-on-one setting and with randomization of the subjects, 15 educational sessions were viewed as reasonable to complete over the project’s implementation. Inclusion criteria for participation in the quality improvement project included currently practicing as a primary care provider, willingness to participate in the project, and the ability to understand and speak English. Exclusion criteria included past education or training regarding HIV care or PrEP prescribing.
Description of Approach

As noted, a randomized controlled trial framework was be employed for this quality improvement project. A review of this method indicates that RCTs are an experimental approach to investigation that allow for randomization of the sample to ensure that each group evaluated is representative of the larger population from which the sample is drawn (Creswell, 2015). Additionally, the RCT framework requires the use of an intervention and a control to compare outcomes (Creswell, 2015). By exposing the experimental group to an intervention and comparing the results to a control group, it is possible to determine if there are differences between the groups and if the difference is statistically significant (Creswell, 2015). Through the use of a control group, it is possible to determine if a cause-effect relationship resulted from the experimental intervention. The results will either support or fail to support the intervention trialed (Creswell, 2015).

This quality improvement project began with the recruitment of primary care physicians interested in receiving education for PrEP working in South Florida and associated with the RAW clinic. It was assumed that primary care providers have a similar level of knowledge regarding HIV treatment with PrEP. Research consistently demonstrates that few PCPs have received training or education regarding these areas of care (Blumenthal et al., 2015; Bra...
hours. Providers were able to choose to print the form, sign it, and scan the signed form or to sign the document electronically. Providers who had not returned their forms within 72 hours were able sent a reminder email and asked to complete the form within 24 hours. Providers who had not provided informed consent at this time were be excluded from the study.

With the sample recruited, preliminary baseline data was collected, including sample demographic data and baseline knowledge regarding PrEP and PrEP prescribing. All participants were sent an email containing a link to complete an online demographic survey (Appendix D) and a knowledge questionnaire, the Provider PrEP Knowledge Scale (Appendix E). The link directed the participant to SurveyMonkey, an online survey platform that could be accessed by participants through their mobile devices or their desktop or laptop computer. Providers were given two weeks to complete the survey and baseline knowledge assessment survey. Using provider email to track recorded responses in SurveyMonkey, a follow-up email was sent to all providers who returned the informed consent form but have not completed the survey within two weeks. For those still wishing to participate, the survey remained open for an additional 72 hours.

The demographic survey developed for this project collected participant characteristics such as age, gender, race, current role (MD, DO, APRN, PA, etc.), and number of years in practice. Assessment of baseline knowledge regarding PrEP and PrEP prescribing was undertaken using the Provider PrEP Knowledge Scale. This instrument was developed for this project and includes a combination of 10 true/false and 10 multiple choice questions regarding PrEP and PrEP prescribing. The questions were derived from current evidence regarding what providers need to know about PrEP, how to assess patients for PrEP use, and how to prescribe PrEP to at-risk patients. To validate the instrument, it was reviewed by three PrEP educators
currently working at the RAW clinic. Recommended changes to the instrument to ensure clarity
of the questions were made based on consensus from the educators reviewing the instrument. As
noted, the questionnaire can be found in Appendix E.

Once baseline demographic and PrEP knowledge were assessed, the sample was
randomized using a 1:1 approach by assigning participants to alternating groups: experimental
and control based on when they officially submitted their informed consent form. Providers
assigned to the education as usual group were emailed a pamphlet (Appendix F) and were
provided with the principal investigator’s contact information. Participants in the control group
were instructed to email or text the principal investigator to schedule a Zoom meeting to answer
any questions that the provider may have regarding PrEP prescribing. Providers seeking
additional information regarding PrEP were scheduled for a 15-minute question and answer
session via Zoom with the principal investigator at a time that was convenient for the participant
and the principal investigator.

Providers assigned to the academic detailing group were provided with the principal
investigator’s contact information and were sent a schedule outlining when academic detailing
appointments was available via Zoom. Providers were asked to respond to the email within 24
hours to establish a schedule for receiving academic detailing regarding PrEP. If two or more.providers select the same time for academic detailing, the time slot was given to the provider
who responded first. For providers who do not have availability during the scheduled times,
efforts will be made to make alternative arrangements. All needed Zoom meetings were
scheduled by the principal investigator and links for the meetings were sent to all participants
randomized to the academic detailing group.
Each academic detailing session scheduled were anticipated to last between 35 and 45 minutes. The educational session included face-to-face meetings via Zoom with primary care providers. Using techniques associated with academic detailing, including focusing on key messages, using anecdotal stories to reinforce education, providing an open environment for questioning, and answering questions with full detail rather than minimizing participant concerns, participants were provided with an overview of PrEP, information regarding how to assess patients for PrEP use, and techniques for communicating with patients about PrEP to reduce stigma and promote patient engagement in care. Because academic detailing often utilizes a more conversational approach to education, an outline with the specific content that was covered during the educational session was created (Appendix G). This outline was used to guide the educational session and ensure that each provider was properly and uniformly educated about PrEP and prescribing PrEP to patients.

It is anticipated that it would take between three and four weeks to complete academic detailing for the 15 participants assigned to the intervention group. Following the completion of the academic detailing sessions, all participants in the study received a follow-up email with a second SurveyMonkey link. The link directed the participant to the Provider PrEP Knowledge Scale. This was the same assessment tool used to evaluate baseline provider knowledge. The questions were rearranged to help reduce instrument exposure bias that may influence the results. Participants were given two weeks to complete the post-intervention assessment. Tracking participants by email, it was possible to see if any providers failed to complete the assessment within two weeks. For providers that did not complete the post-intervention assessment a reminder email will be sent allowing providers to complete the assessment within 72 hours, after which the survey will be closed and data collection for the project will be complete.
Protection of Human Subjects

Several actions were taken as part of this project to protect human subjects. As previously noted, all providers wishing to participate in the study were required to review and sign an informed consent form (Appendix C). The informed consent form outlines the benefits and risks of the project as well as the rights of the provider: i.e., to withdraw from the study for any reason without penalty. Additionally, institutional review board (IRB) approval for the project was initially sought from Florida International University on January 23, 2021 and granted on June 8, 2021. Appendix H includes the formal IRB letter indicating the approval of the study from the facility.

While informed consent and IRB approval are critical to the protection of human subjects, additional actions were taken to safeguard provider privacy and confidentiality. To ensure that participant privacy and confidentiality are protected, no personal identifying information—name, address, telephone number, etc.—other than the participant’s email was collected. Participant email was used to track participants in SurveyMonkey and to ensure that all needed data for the project was collected. All information including participant emails was stored on a password-protected laptop to which only the principal investigator has access. SurveyMonkey data was downloaded through an encrypted server and stored on the password-protected laptop. Data was destroyed by having the computer hard drive wiped five years following the completion of the project. Additionally, no email addresses of participants were shared during the project or during the dissemination of the project results.

Data Collection
Data collection for this project occurred through the use of the SurveyMonkey platform. SurveyMonkey is noted in the literature to be a secure, cloud-based application that provides customizable surveys for users (Halim et al., 2018). Due to the current COVID-19 pandemic, all data for this project was collected remotely to ensure the safety of all participants and the principal investigator. Participants in the study were directed to a SurveyMonkey link to complete the demographic and pre-/post-intervention knowledge assessments. Data from SurveyMonkey was downloaded to the laptop of the principal investigator and analyzed using Excel.

The data collection instruments created for this project include a demographic survey (Appendix D) and a knowledge questionnaire, the Provider PrEP Knowledge Scale (Appendix E). Both instruments were developed specifically for this project. As noted, the Provider PrEP Knowledge Scale was constructed based on evidence-based data regarding provider knowledge needed to assess at-risk patients and prescribe PrEP. The knowledge test includes 20 questions of 10 true/false items and 10 multiple choice items. For each correct answer, participants were scored one point, with the lowest score on the instrument being 0 and the highest score 20. A comparison of scores on the Provider PrEP Knowledge Scale was used to determine if knowledge scores increased following intervention and if there were differences in knowledge scores for the two groups: control (pamphlet) and experimental (academic detailing).

**Data Management**

Data analysis for this project includes the use of descriptive and inferential statistics. Descriptive statistics including frequency, mean, and standard deviation are used to describe the sample participating in the project. Descriptive statistics also provide mean knowledge scores, along with standard deviation for the pre- and post-intervention assessments. Mean scores can be
used to determine change in knowledge following intervention for both the pamphlet and academic detailing groups.

Comparison of pre- and post-intervention knowledge scores was completed using a series of paired t-tests. Paired t-tests are used to determine statistical significance when comparing results for matched groups: i.e., pre-/post-intervention assessments using the same instrument (Guo & Yuan, 2017). This statistical tool can also be used with normally distributed data (Guo & Yuan, 2017). The use of 30 participants in the project met the threshold for ensuring that the data was normally distributed (Guo & Yuan, 2017). A series of paired t-tests was used to compare the data. Within the control and experiment groups, a t-test was be used to see if knowledge scores increased before and following the intervention. Paired t-tests was also be used to compare pre-test knowledge scores of both groups to determine the presence of differences in baseline participant knowledge. Finally, a paired t-test was used to compare post-intervention knowledge scores between the two groups. For each test, an alpha of 0.05 was used to indicate statistical significance.

Discussion

The methodology selected for this quality improvement project provided a useful foundation for comparing knowledge gained from two different types of education for providers to prescribe PrEP for patients at-risk of contracting HIV. Through the use of this methodology, it was possible to determine if academic detailing provides an advantage for provider knowledge and education. Demonstrating the salience of these results does provide additional evidence to support primary care providers in their ability to effectively educate patients and increase uptake of PrEP. Over time, this should have implications for population health as reductions in the
spread of HIV should lead to the need for fewer resources for patient treatment and the potential to eradicate the disease from the population.

**Results**

Following the completion of this quality improvement project, raw quantitative data was available for analysis. As previously noted, the data from SurveyMonkey was downloaded via an encrypted server to the project implementor’s password-protected laptop. Analysis of the data through the use of Excel was undertaken, and the results of the project are reported in the following section including a description of the sample and a review of data collected from the knowledge survey.

**Demographic Data**

Demographic data collected for this project is provided in Table 1 below. The data indicate that a total of 31 subjects were included in the project. This included \( n = 15 \) in the pamphlet group and \( n = 16 \) in the academic detailing group. In both groups the majority of participants were between the age 45 and 54 years and most were female—10 participants in each group. Additionally, in both groups a majority (\( n = 11 \)) of the participants were of Latino/Hispanic race. Distribution of the clinical roles for respondents were similar in each group with a majority of respondents currently working in the advanced practice nursing (APRN) role. In the pamphlet group a majority of respondents had been in practice for 0 to 5 years while in the academic detailing group, the majority of respondents were split equally between 0-5 years (\( n = 6, 38\% \)) and 10+ years (\( n = 6, 38\% \)).

**Table 1**

*Demographic Characteristics of Program Participants*

<table>
<thead>
<tr>
<th>Descriptor</th>
<th>Pamphlet ((n = 15))</th>
<th>Academic Detailing ((n = 15))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age Group</td>
<td>Mean Pre-Test Scores</td>
<td>Mean Post-Test Scores</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>18-25</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>26-34</td>
<td>1 (7%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>35-44</td>
<td>6 (40%)</td>
<td>5 (31%)</td>
</tr>
<tr>
<td>45-54</td>
<td>5 (33%)</td>
<td>6 (38%)</td>
</tr>
<tr>
<td>55-64</td>
<td>3 (20%)</td>
<td>2 (13%)</td>
</tr>
<tr>
<td>65+</td>
<td>0 (0%)</td>
<td>3 (19%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Mean Pre-Test Scores</th>
<th>Mean Post-Test Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>5 (33%)</td>
<td>6 (38%)</td>
</tr>
<tr>
<td>Female</td>
<td>10 (67%)</td>
<td>10 (63%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race</th>
<th>Mean Pre-Test Scores</th>
<th>Mean Post-Test Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>1 (7%)</td>
<td>4 (25%)</td>
</tr>
<tr>
<td>African American</td>
<td>3 (20%)</td>
<td>1 (6%)</td>
</tr>
<tr>
<td>Latino</td>
<td>11 (73%)</td>
<td>11 (69%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Role</th>
<th>Mean Pre-Test Scores</th>
<th>Mean Post-Test Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician: MD, DO</td>
<td>3 (20%)</td>
<td>4 (25%)</td>
</tr>
<tr>
<td>Advanced Practice Nurse</td>
<td>9 (60%)</td>
<td>1 (6%)</td>
</tr>
<tr>
<td>Physician Assistant</td>
<td>3 (20%)</td>
<td>11 (69%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Years in Practice</th>
<th>Mean Pre-Test Scores</th>
<th>Mean Post-Test Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 5 Years</td>
<td>9 (60%)</td>
<td>6 (38%)</td>
</tr>
<tr>
<td>6 – 10 Years</td>
<td>1 (7%)</td>
<td>4 (25%)</td>
</tr>
<tr>
<td>10+ Years</td>
<td>5 (33%)</td>
<td>6 (38%)</td>
</tr>
</tbody>
</table>

**Descriptive Data**

Mean pre- and post-intervention test scores were collected and tabulated for both the pamphlet and academic detailing groups. The results can be found below in Table 2. The results indicate that the pre-test scores for the pamphlet and academic detailing groups were similar, 5.2 and 4.9 respectively. In the post-test, the mean scores for the pamphlet group increased only slightly from 5.2 to 5.4 and the mean scores for the academic detailing group increased from 4.9 to 9.1

**Table 2**

*Mean Pre-/Post-Test Scores for Pamphlet and Academic Detailing Groups*

<table>
<thead>
<tr>
<th></th>
<th>Mean Pre-Test Scores</th>
<th>Mean Post-Test Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pamphlet</td>
<td>5.2</td>
<td>5.4</td>
</tr>
</tbody>
</table>
Additionally, Figure 1 and 2 included below provide a visual representation of the data. Figure 1 compares the pre-test and post-test scores for the pamphlet and academic detailing groups and Figure 2 compares the pre-test scores for the pamphlet and academic detailing groups along with the post-test scores for both groups. Figure 1 indicates the slight increase in scores for the pamphlet group in the post-test while also illustrating the substantial increase in post-assessment scores for academic detailing. Figure 2 demonstrates the similarity between the pre-test scores for both groups and the difference between post-test scores for both groups.

**Figure 1**

*Comparison of Pre-and Post-Test Scores for the Pamphlet and Academic Detailing Groups*

<table>
<thead>
<tr>
<th>Academic Detailing</th>
<th>4.9</th>
<th>9.1</th>
</tr>
</thead>
</table>

**Figure 2**

*Comparison of the Pre-Test and Post-Test Scores Between Groups*
Inferential Data

Inferential data collected for the project included the results of four t-tests to assess statistically significant differences both among and between groups. The four tests included the following: a comparison of the pre- and post-test scores for the pamphlet group; a comparison of pre- and post-test scores for the academic detailing group; a comparison of pre-test data for the pamphlet and academic detailing groups; and comparison of the post-test data from the pamphlet and academic detailing. Testing among the two groups was undertaken to determine if pre-test or post-test scores increased following intervention for each group. Pre-test assessment of the pamphlet and academic detailing groups was undertaken to determine if there were differences in baseline knowledge for the two groups. Post-test assessment of the pamphlet and academic detailing groups was undertaken to determine if there were statistically significant differences in knowledge for the two groups, indicating that one is superior for increasing provider knowledge. A summary of the t-test results is provided in Table 3 along with an explanation of what each result indicates.

Table 3

Summary of T-test Results
From the data included in Table 3, it is possible to see that knowledge gains made in the pamphlet group following education were not statistically significant: P = 0.500. However, knowledge gains made in the academic detailing group were statistically significant: P = 0.000. However, mean knowledge scores did increase in both groups, suggesting that both methods of provider education may have some merit for enhancing knowledge regarding PrEP. Additionally, the data indicate that baseline knowledge for the pamphlet and academic detailing groups were similar at baseline: P = 0.334. However, when comparing post-test knowledge for providers in both groups, it is evident that there is a statistically significant difference, suggesting that academic detailing provides a more effective route for improving provider education on the topic of PrEP.
Discussion

With the results presented, it is necessary to provide a discussion of this information to enhance understanding of the data and to provide recommendations for the use of the data in practice. Through a thorough review of the results, it should be possible to evaluate project outcomes to determine if this evidence-based practice change should be retained. Included in this section is a discussion of the results, areas for future research, recommendations, and plans for dissemination of the results.

Discussion of Results

The demographic description of the sample included in Table 1 indicates that the samples were well matched in terms of age, gender, race, role, and years in practice. The results further indicate that knowledge levels of providers participating in the study were similar before the intervention. This was anticipated, as research does indicate that most primary care providers do not have expertise in HIV care and PrEP prescribing (Zhang et al. 2018). The results further indicated that knowledge gains were made in both groups. This was also anticipated as research does support the use of provider education to increase knowledge of PrEP and PrEP prescribing (Blumenthal et al., 2015; Brant et al., 2020; Henny et al., 2019; Zhang et al., 2018). What is evident is that most providers lack formal understanding or knowledge of PrEP and this may impact their ability and willingness to educate patients about this topic (Turner et al., 2018). Further, research has demonstrated that provider education can be effective for enhancing knowledge and fostering practice change to improve the care of patients (Vitek et al., 2017).

Finally, the findings obtained from this project indicate that while both interventions resulted in increases in knowledge scores, the knowledge gains made in the academic detailing
group were statistically significant when compared with baseline knowledge scores and post-
intervention knowledge scores reported in the control or pamphlet group. The educational
interventions used in this project could broadly be classified as passive (pamphlet) or active
(academic detailing). Passive education involves presenting information to the learner with the
idea that the learner will take a self-directed role in acquiring new knowledge and information
(White et al., 2016). Providing learners with a pamphlet to help improve education does not
require direct participation of the instructor and further does not allow for learner-instructor
interaction to foster knowledge construction and acquisition (Riley & Ward, 2017). Active
education, on the other hand, is typically viewed as having an interactive component in which
students are challenged in the learning environment to engage and interact to facilitate
knowledge building and acquisition (White et al., 2016). Academic detailing meets the criteria of
being a form of active education for the learner. Research indicates that academic detailing
fosters interaction between the learner and instructor to help co-create knowledge and
understanding (Barth et al., 2017).

A comparison of active and passive approaches to education consistently demonstrates
that the outcomes that result from these approaches can be notably different (Willett, 2017).
Passive learning can promote knowledge acquisition but may not provide the necessary
foundation to integrate knowledge for use in practice (Willett, 2017). Active learning, on the
other hand, typically serves to fully engage the learner to bring about cognitive and affective
changes in learning and behavior (Kooloos et al., 2020). These differences appear to provide a
justification for the results that were obtained from this quality improvement project. As noted
when reviewing the results, both interventions resulted in an improvement in provider
knowledge. However, the use of academic detailing provided a greater gain in knowledge,
suggesting that this type of active learning increased provider understanding of the topic as well as cognitive and affective skills needed to enhance knowledge gains. This is, therefore, aligned with the current literature on the topic.

**Implementation Discussion**

**Project Implementation**

The implementation of this project was guided by a detailed methodology to utilize a quasi-experimental pre-/post-intervention two group comparison. Although the methodology did provide a useful foundation for undertaking the current quality improvement project, there were some challenges for project implementation. The first challenge stemmed from the difficulties associated with obtaining IRB approval. Approval of the IRB from FIU took longer than initially anticipated. This had implications for the timeframe of the project and the ability to deliver provider training via academic detailing. Academic detailing, while effective, does require an individualized approach to education and requires more time than simply sending a pamphlet to providers (Barth et al., 2017). While the project timeline was adjusted based on the difficulty in obtaining IRB approval, recruiting providers to participate in the project, delivering academic detailing, and assessing pre- and post-intervention knowledge required a significant amount of time over the duration of four weeks to conduct the quality improvement project.

The second challenge encountered as a result of implementing the project involved distractions for the participant involved in the project. Because academic detailing was provided to the participant via Zoom rather than in a face-to-face environment, providers were often surrounded by their home or practice setting environment, creating notable distractions for the participant’s engagement. Cell phones, email, and other staff/family members interrupting the academic detailing session was a common occurrence. Because the goal of academic detailing
was to thoroughly engage the participant, distractions were seen as a potential hindrance to successfully building participant knowledge. While the results suggest that participants engaged in academic detailing had improved knowledge scores, it is useful to consider if these scores could have been higher if the distractions had not occurred. In the future, it would seem that requiring participants to turn off electronic devices and to receive training in a dedicated environment without distractions would be helpful.

The final challenge for the project involved a lack of data through observation regarding how providers reviewed the pamphlet used for education. Although participants enrolled in the pamphlet group were asked to send an email indicating that they had reviewed the pamphlet, there is no indication that each participant spent the same amount of time or effort to review the contents of the educational material. Without a clear understanding of how each participant utilized the pamphlet for learning, it is difficult to state with certainty that academic detailing is superior to a pamphlet in improving provider knowledge of PrEP. Even though the results indicate that providers in the pamphlet group did experience an increase in knowledge, it is not possible to tell if knowledge gains were universal across all providers and to what degree or how the pamphlet was used as a learning tool. To address this problem in the future, it may be helpful to provide participants with detailed instructions about the time and actions needed to thoroughly review the pamphlet.

**Influencing Factors**

Various factors outside of the control of the principal investigator could have potentially shaped outcomes for this quality improvement project. In particular, it was noted that IRB approval was delayed. This shortened the time available to recruit, assess, and educate providers. While it is not possible to state with certainty the specific impact that this variable had on
outcomes for the project, it does seem reasonable to argue that with more time, it would have been possible to recruit more providers for the program and to collect additional data that would have augmented the findings from the project. The challenges posed as a result of time limitations due to IRB approval delays may also have impacted optimal participant learning. In particular, once participants were recruited, there were limited time slots to provide education via academic detailing. While all participants were accommodating and willing to help, it is possible that the times scheduled were not optimal for each participant. This could have had an impact on learning via academic detailing. This factor may also help to explain why so many distractions were noted during participant education.

Despite the presence of the aforementioned barriers, there were some important supports for facilitating this project. As noted, providers agreeing to participate in the academic detailing intervention were very accommodating and understanding regarding the time constraints for the project. This made it easier for the principal investigator to schedule academic detailing sessions over a two-week period rather than the initial four-to-six-week period proposed as part of the methodology. Further, the project was buoyed by consistent support from the project site mentor who provided encouragement and helped to organize recruitment and the planning of academic detailing sessions. The supports provided by participants and the project mentor clearly demonstrated that the success of quality improvement requires more than just the work and actions of the change agent (Huotari & Havrdova, 2016). What is evident is that to make practice change a reality, projects must be supported by a broad range of organizational stakeholders (Huotari & Havrdova, 2016).

**Monitoring**
Monitoring of the project occurred in two ways. First, project monitoring was supported through the guidance of the FIU DNP curriculum. Throughout the course of this project, all elements of the project were reviewed and examined to provide a foundation for this final report. Activities through the DNP curriculum were sequenced to ensure that all needed information for the project could be collected and analyzed. Many activities including the literature review, writing the methodology, and conducting an organizational analysis could be completed before IRB approval. By sequencing activities in this manner and sequentially building the project, it was possible to ensure that progress on the quality improvement project was not only guided but monitored by feedback provided by faculty overseeing the project. This sequencing also allowed for regular review and insight into the project to ensure that data could be collected and analyzed in the timeframe allotted.

While educational/cellular monitoring were foundational to constructing most of the elements of this quality improvement project, monitoring also occurred at the practice site through regular meetings with the project mentor. Project meetings with the site mentor were scheduled via Zoom every two weeks and typically lasted between 15 and 30 minutes. During the bi-monthly meetings, progress with the project was discussed along with any challenges that were encountered. When issues of concern were noted, these topics were discussed with the project mentor and suggestions discussed were implemented to help overcome obstacles to project success. During these meetings, the site mentor also provided ongoing encouragement and support. Given the challenges of completing this project, this support was invaluable for monitoring progress across the entire project.

**Project Maintenance**
Project maintenance requires a review of the specific efforts that will be undertaken to ensure that gains made from the project are not lost as a result of the completion of this quality improvement project. Maintaining gains will be imperative to ensuring that all providers are educated and further that rates of PrEP prescribing increase among those that have been educated. The principal investigator is still involved with the RAW clinic and will have access to provider information via current partnerships with primary care facilities operating in the area. Data from these facilities will be collected on a quarterly basis to determine if PrEP prescribing has indeed increased as a result of delivering education to healthcare providers. Providers who have and have not received academic detailing along with providers that received training via the pamphlet will be compared with respect to PrEP prescribing rates. Improved prescribing rates will be used to justify the continuation of the program and the use of academic detailing to provide the education that healthcare practitioners need to successfully prescribe this treatment to patients.

Maintenance of the project will also be supported through efforts to adopt provider education through academic detailing as a standard of operations for the RAW clinic. Using the data obtained from this project along with three-and six-month data regarding PrEP prescriptions, it should be possible to demonstrate the utility of the program and to seek organizational support and funding for educating all providers regarding the use of PrEP. For new providers who partner with the RAW clinic, a protocol to provide academic detailing for PrEP prescribing could be implemented ensuring that more providers in the Miami area have access to vital knowledge to improve patient care. By establishing academic detailing for provider PrEP education this will ensure that the gains made from the current quality improvement project are extended to the community over the long-term.
Limitations

Even though the results of this quality improvement project do indicate that academic detailing for increasing provider education regarding PrEP can be successful, there are some important limitations of this project that need to be discussed. First, the project utilized a relatively small sample (n = 31). This sample included only primary care providers working in Miami that currently have a partnership with the RAW clinic. The size of the sample and the use of a single site for recruitment limits the generalizability of the findings for other practice settings. What this indicates is that even though the results are supported in the context of the current practice setting and the providers agreed to participate in this project, there is no guarantee that the same results will be produced following provider education to increase PrEP knowledge in another setting.

Also of concern for this project is the potential for internal bias that may have impacted the results. Test and participant maturation bias are noted in the literature to be significant weaknesses of a quasi-experimental approach (Siedlecki, 2020). Test bias refers to the fact that exposure to a pre-intervention assessment can influence scores when using the same assessment for post-evaluation of knowledge (Siedlecki, 2020). To help avoid this issue, the questions on the post-intervention assessment were randomized, ensuring that question sequencing was not the same. However, it is not possible to state with certainty how test bias may have influenced outcomes for the project. Maturation bias may also be present and occurs when study participants change or grow outside of the context of a study (Siedlecki, 2020). In the current quality improvement project, maturation may have occurred if participants in the pamphlet or academic detailing group sought information about PrEP or PrEP prescribing outside of the educational intervention. If this occurs, learning gains recorded for the project may not
completely reflect the knowledge gains made as a result of the intervention. Because the participants were not asked to refrain from seeking additional information on the topic, it is difficult to know for certain how much knowledge was gained solely through the educational intervention.

The final limitation of the project stems from the fact that it is not possible to state with certainty that the educational gains made from the project were directly caused by the educational intervention. In both the pamphlet and academic detailing groups, knowledge gains were noted. Without the use of a control group—i.e., a group that was not provided with education—and the use of a randomized sample to ensure representativeness, it is not possible to demonstrate causality in the findings (Deaton & Cartwright, 2018). While the data analysis does indicate the presence of a statistically significant difference in the knowledge gained when comparing education provided by pamphlets and academic detailing, it is not possible to state with certainty that a cause-effect relationship has occurred to ensure that the educational intervention was solely responsible for the knowledge gains reported.

Areas for Future Research

Although the current quality improvement project did demonstrate a notable advantage for the use of academic detailing for educating providers about PrEP, there are other educational tools for PrEP that could have been used. When reviewing the literature on provider education for PrEP, Chartier et al. (2018) noted that other educational tools such as simulation and PrEP bootcamps can be used to educate providers. Research to compare these educational tools to academic detailing would further demonstrate the importance of academic detailing to provider PrEP education. Mayer et al. (2018) noted the lack of standardized education programs for
providers to learn about PrEP. Therefore, a comparison of other methods to determine their efficacy in improving provider knowledge would represent a useful area for future research.

Another important consideration for further research on the topic is an expansion of the number of providers included in each of the groups for this study. Including providers from different areas of the country or from different areas of practice may be useful for determining if academic detailing is as effective for educating providers as it was in this project. The project is limited by the small sample size as well as a lack of representativeness in the sample. Increasing the sample size through recruitment of providers from different locations will improve the generalizability of the findings to other practice sites and provider groups.

**Recommendations**

The results from the project demonstrate the utility of academic detailing for provider PrEP education. Based on the results, academic detailing should be used instead of typical provider education—i.e., a pamphlet—to increase provider knowledge of PrEP. While additional research to expand the sample population and to evaluate academic detailing in comparison with other educational tools should be considered, for the present time, academic detailing should be considered as the option of choice for delivering provider PrEP education. The RAW clinical office should consider integrating this program as a part of standard practice for educating providers.

**Interpretation of Findings**

Interpretation of the findings for this study requires a consideration of how the project will shape patient care and the healthcare setting in which it was implemented. Additionally, it is necessary to review the transferability of the results, costs effectiveness of the results, and what should be done based on the findings and limitations of the study. Each of these issues is
reviewed here to provide a comprehensive overview of the findings and how they should be utilized moving forward.

**Changes in Patient Care/Healthcare Setting**

When interpreting the findings, it is first helpful to consider the changes in patient care that should result along with the changes that should occur in the healthcare setting (RAW clinic) based on the results and limitations of the project. As previously mentioned in this document, provider education for PrEP use and PrEP prescribing was based on the idea that increased provider knowledge would translate into increases in provider use of the information when providing care for patients (Clement et al., 2018). A concomitant increase in PrEP prescribing should also occur (Clement et al., 2018). For patients at-risk for contracting HIV, this educational program should result in greater access to PrEP with the idea that this will further reduce patient risk of contracting the virus. Reducing the spread of HIV is an important individual and public health goal that will have systemic implications for the patient, the healthcare system, and society in general (Clement et al., 2018). Consequently, it is anticipated that through the use of this intervention, more patients will have access to PrEP resulting in a lower rate of HIV infection over the long-term.

In terms of the practice setting, the results do support integrating provider education for PrEP via academic detailing. If this change cannot be made and/or primary care providers are not willing to participate in education, the results support providing a pamphlet to deliver care as a means to enhance provider knowledge on the topic. Retaining this educational program will be essential to ensuring that the RAW clinic is better able to meet the needs of primary care providers in the community while also increasing the ability of providers to deliver more effective care for patients at-risk for contracting HIV. Providers working in the RAW clinic will
need to learn how to deliver PrEP education and training via academic detailing. This will result in the need to establish clearly defined policies and protocols for both educating RAW clinic staff while also providing education to primary care providers who have partnered with the organization.

**Transferability of Results**

As noted when reviewing the limitations of this work, the results of this project may not be generalizable or transferable outside of the RAW clinic and the primary care providers who participated in the project. Despite this, there are steps that can be taken to improve the transferability of the results. In particular, expanding and extending the program to include more primary care providers working in partnership with the RAW clinic, expanding the project to include other clinic sites, and utilizing providers from other geographically diverse communities could all increase available data regarding project outcomes. As more providers and different practice sites are included, the transferability and generalizability of the findings will increase. This may support the use of a randomized controlled trial for using academic detailing for increasing provider knowledge of PrEP. A randomized controlled trial would ensure the transferability of the results to the larger population, suggesting that the intervention should be adopted by all healthcare providers and systems (Schloemer & Schroder-Back, 2018).

**Cost Effectiveness**

Assessing the cost effectiveness of the project requires a consideration of what academic detailing costs. For the purposes of this project, all aspects of the educational intervention were provided as an in-kind donation by the principal investigator. Further, all participants agreed to volunteer their time for participation. However, if the program were implemented at the RAW clinic, the costs associated with the project would include the time required for the nurse
practitioner to provide this type of education as part of a salaried position. Assuming that the average hourly charge of an advanced practice nurse is $60 and further that 40 providers could be educated per week (one hour to complete assessment and education), the total cost of education for a week would be $2,400.

When this number is juxtaposed against the costs savings for preventing HIV infection, the cost effectiveness of this intervention can be seen. Scholars reviewing the discounted medical costs of preventing one HIV infection indicate that a total savings of $338,400 can be realized per patient across the lifespan (Schackman et al., 2015). What this suggests is that if each provider educated during a week (40) could prevent one HIV infection through PrEP prescribing the total cost savings for the 40 patients impacted would be in excess of $13 million. These cost savings will increase exponentially based on the number of providers who receive training for PrEP prescribing via academic detailing. Based on this assessment, there is a strong impetus to consider provider education as a cost-effective strategy for reducing the total costs of medical care that would be needed for a patient who contracts HIV.

**Recommendations Moving Forward**

The information provided in this section indicates that there are considerable benefits for provider training for PrEP prescribing via academic detailing. The intervention is highly cost effective and could have a positive impact on both individual and population health. One caveat that must be addressed involves the fact that the results from this project have limited transferability. To augment transferability of the research, additional investigations into the topic including a larger, more diverse representative sample of providers should be pursued. If the results from these investigations support the use of academic detailing to improve provider knowledge of PrEP an effort should be made to not only expand this project in the current
practice setting but also to work toward building evidence-based practice guidelines for improving the care of patients at-risk for contracting HIV.

**Plans for Dissemination**

Plans for dissemination of the results include internal presentation of the results to staff and the RAW clinic through an email memo detailing the results of the project. Additionally, a Zoom presentation would be scheduled for staff to review the results of the project. While dissemination of the project results within the facility will raise awareness of the need for practice change, to have a more significant impact on the nursing profession it is imperative to disseminate the results beyond the facility at a national and/or international level. Schmidt and Brown (2018) note that dissemination of evidence in nursing often occurs through the three P’s: poster, presentation, and publication.

For the purposes of this project, publication of the results will be sought in a peer-reviewed nursing journal. Suitable journals that have published prior content on the topic investigated in this project would include the *Journal of the American Association of Nurse Practitioners* (Doyle-Tadduni & Jackowski, 2016) or the *Journal of the Association of Nurses in AIDS Care* (O’Byrne et al., 2019). Seeking publication in either journal would provide a foundation for disseminating the results of the quality improvement project both nationally and internationally. This form of dissemination is one that will enable providers from various geographical locations to have consistent access to this evidence for use in building other quality improvement and evidence-based practice projects (Schmidt & Brown, 2018).

In addition to seeking publication of the work, the plan for dissemination also involves either a poster or presentation at a national conference. Posters and presentations are noted to be an informative way to provide project information to a targeted audience of healthcare providers.
including nurses (Schmidt & Brown, 2018). The conference being considered for the presentation of this work is the Association of Nurses in AIDS Care ([ANAC], 2021) conference that will be held between November 11 and 13, 2021, in Washington, D.C. Information regarding this event indicates that the conference is the leading event for nurses and nurse practitioners working in HIV patient care (ANAC, 2021). This conference, therefore, provides a useful platform for disseminating the results of this quality improvement project.

**Implications for Advanced Nursing Practice**

The results of this project should have positive and systemic implications for improving the care of patients at-risk for contracting HIV, as well as for improving population health. Additionally, the project will have implications for advanced nursing practice. To provide a more complete understanding of how this project will impact advanced nursing practice, the implications for education, clinical practice, administration, and leadership are reviewed here.

**Education**

The implications for the project with regard to nursing education are two-fold. First, the project supports the use of academic detailing to increase provider knowledge regarding PrEP. Advanced practice nurses working with patients who have HIV should consider learning how to conduct academic detailing and to integrate this process as part of educating peers about PrEP. Second, the project has implications for educating patients. While academic detailing can be used to improve provider understanding and knowledge of a topic, this understanding and knowledge should be transferred to the patient through better screening, assessment, and patient education. In the case of PrEP, providers learned vital knowledge that should translate into better care for patients. When reviewing the literature regarding the use of academic detailing for healthcare providers, the results consistently demonstrated that changes in practice for providers
followed the use of academic detailing (Chartier et al., 2018; Edelman et al., 2020; Pittenger et al., 2015; Safi et al., 2017). These changes in practice had positive implications for patients and providers.

**Clinical Practice**

The implications of the project for clinical practice suggest that a change is warranted in the way that providers are educated about PrEP. Although current evidence supporting the use of academic detailing for PrEP education among healthcare providers is scant (Chartier et al., 2018; Edelman et al., 2020), the results of this quality improvement project can be combined with the evidence in the literature to build a foundation for practice change. Using the evidence included in this project, along with current evidence regarding PrEP provider education and academic detailing, advanced practice nurses should be able to spearhead similar quality improvement projects in their facilities to improve provider education and knowledge while simultaneously affecting practice change to enhance the quality and scope of the care that patients receive.

**Administration**

The administrative implications for advanced nursing practice can be seen when considering what leaders in the organization should do with the results of this project. At the current practice site, leaders should consider the adoption of policy to utilize academic detailing as a foundation for educating primary care providers about PrEP. Solidifying the project through a formal facility policy will ensure that all providers have access to the resources and tools needed to utilize academic detailing as the primary education tool for educating PCPs and other healthcare providers about PrEP. Building policy and measuring outcomes could also lead to building the evidence with the potential for policymakers or professional organizations to
formally establish standards of care or evidence-based practice guidelines utilizing academic detailing for PrEP provider education.

Leadership

Essential to the advanced practice nursing role is the importance of leadership within both the profession and within the healthcare setting (Bryant-Lukosius et al., 2016). This project demonstrates the leadership of the advanced practice nurse in leading change within a facility. However, the implications for leadership in the advanced practice role do not stop with this project. Based on the results, the advanced practice nurse would have the obligation to further lead quality improvement and change by implementing a monitoring program, disseminating the results, and continually working with other providers to identify where quality improvement can be further integrated to improve outcomes for patients. Thus, while the current project demonstrates leadership in the advanced practice role, the project also illustrates pathways forward for advanced practice nurses to lead in the future.

Conclusion

HIV is an incurable, fatal disease that has destroyed lives and communities around the globe. Thanks to advances in medicine, the availability of treatments such as PrEP has demonstrated effectiveness at preventing the transmission of HIV and potentially eradicating this virus from society. Despite the reality that the use of PrEP has been determined to be effective, barriers to access have been identified, including a lack of provider knowledge regarding proscribing PrEP to at-risk groups. Identifying a means of overcoming this barrier has led to the adoption of academic detailing as an educational tool for increasing provider knowledge and improving patient care.
An extensive literature search process of five databases led to an understanding that there is remarkable support for integrating PrEP into clinical practice. Clearly identified through the literature are the importance of educating providers for integrating PrEP into care and support for the practice of academic detailing as an effective means of healthcare provider education, including support for the notion of using academic detailing regarding PrEP knowledge. Given the purpose of this quality improvement project, the PICO question derived from the literature search process sought to determine if, among primary care providers, the use of PrEP training through academic detailing via Zoom regarding PrEP use and prescription, when compared with standard care, increases knowledge for integrating PrEP into primary care.

Conceptually, Watson’s theory of human caring serves as the foundation theory for this project. Watson’s application of carative factors fits well with providing academic detailing to providers, as it allows providers to build greater caring relationships with patients through this process, by raising awareness and knowledge. Through this carative process, however, the collection of quantitative data to measure provider scores before and after the intervention required a randomized control trial (RCT) at the RAW clinic at the University of Miami. Providing academic detailing or a standard pamphlet over the course of the project was expected to demonstrate statistical significance in demonstrating the effectiveness of academic detailing over other educational interventions.

The results from this study will be disseminated through several professional channels identified as being likely forums receptive to this project. Preliminary results indicate the potential for impacting advance nursing practice through the use of academic detailing to increase provider knowledge and patient education. Increased knowledge can positively impact clinical practice as further quality improvement projects are undertaken using this methodology.
By integrating evidence-based changes into practice, administrators can set policies designed to improve patient care, which would allow nurse leaders to discover new areas in which to seek out quality improvement.

A diagnosis of HIV is no longer the automatic death sentence that it was in the 1980s and 1990s. However, the ability to manage transmission of this incurable disease requires a close working relationship between patients and their healthcare provider, one who is knowledgeable regarding the most effective, evidence-based treatment options. Increasing provider awareness regarding PrEP has the ability to improve the lives of patients at risk for HIV infection, control the spread of this disease, and better the health of people around the world.


framework evaluation. *AIDS Patient Care and STDs, 34*(6), 259-265.

https://doi.org/10.1089/apc.2020.0004


https://doi.org/10.1097/nna.0000000000000275


https://doi.org/10.1111/jnu.12199


https://www.cdc.gov/hiv/basics/statistics.html


https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6375402/


https://doi.org/10.1080/09540121.2017.1384534


https://doi.org/10.1016/j.annepidem.2020.03.003


https://doi.org/10.1177/0033354917732333

https://doi.org/10.1097/MLR.0000000000000308


the Association of Nurses in AIDS Care, 29(1), 83-92.

https://doi.org/10.1016/j.jana.2017.11.002


World Health Organization. (2020). *Global trends in HIV/AIDS*. https://www.who.int/data/gho/data/themes/hiv-aids#:~:text=Globally%2C%2038.0%20million%20%5B31.6%E2%80%93%20%3B34.2%5D%20people%20are%20living%20with%20HIV%2C%20considerably
%20between%20countries%20and%20regions.


Appendix A: Data Abstraction Table

<table>
<thead>
<tr>
<th>Databases</th>
<th>Articles Found</th>
<th>Duplicates</th>
<th>Full-Text Articles Screened</th>
<th>Articles Included</th>
</tr>
</thead>
<tbody>
<tr>
<td>CINAHL</td>
<td>166</td>
<td>103</td>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td>Cochrane</td>
<td>6</td>
<td>6</td>
<td>1</td>
<td>0</td>
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<tr>
<td>EBSCOHost</td>
<td>94</td>
<td>74</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Google Scholar</td>
<td>121</td>
<td>16</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>PubMed</td>
<td>45</td>
<td>40</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>432</strong></td>
<td><strong>239</strong></td>
<td><strong>39</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>
## Appendix B: Literature Matrix

<table>
<thead>
<tr>
<th>Citation</th>
<th>Purpose/ Problem/ Objective/ Aims</th>
<th>Study Design</th>
<th>Sample (Setting)</th>
<th>Data Collection Measures</th>
<th>Results</th>
<th>Strengths/ Limitations</th>
<th>Relationshi p to Project</th>
<th>Level of Evidenc e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blumenthal, J., Jain, S., Krakower, D., Sun, X., Young, J., Mayer, K., &amp; Haubrich, R. (2015). Knowledge is power! Increased provider knowledge scores regarding pre-exposure prophylaxis (PrEP) are associated with higher rates of PrEP prescription and future intent to prescribe PrEP. <em>AIDS and Behavior, 19</em>(5), 802-810. <a href="https://doi.org/10.1007/s10461-015-0996-z">https://doi.org/10.1007/s10461-015-0996-z</a></td>
<td>To compare HIV and non-HIV providers to: (a) quantify PrEP knowledge, (b) determine the current rate of PrEP prescription, (c) evaluate attitudes towards future PrEP provision, and (d) determine barriers and motivators to PrEP provision.</td>
<td>Cross-sectional correlational survey</td>
<td>Providers attending medical conferences were asked to complete a survey regarding treatment of patients with or at-risk of HIV. A total of 233 providers agree to participate: HIV providers (n = 122) and non-HIV providers (n = 111).</td>
<td>Data was collected through a survey developed by the Fenway Institute but modified for evaluating the responses of real-world healthcare providers.</td>
<td>Mean PrEP knowledge scores were significantly higher for HIV providers (2.8 versus 2.2; p&lt;0.001). Prior PrEP prescription occurred significantly more often among HIV providers (p&lt;0.001). Provider knowledge of PrEP was an important factor in prescribing with the results demonstratin a correlation between higher knowledge scores and PrEP prescribing (p&lt;0.001).</td>
<td><strong>Strengths:</strong> Demonstrates the role that provider knowledge and training would play in improving patient uptake of PrEP. Demonstrates correlation to show influence. <strong>Weaknesses:</strong> Small sample, use of a convenience sample, weak internal validity and generalizability</td>
<td>Demonstrates that provider education is needed to increase patient uptake of PrEP.</td>
<td>Level IV</td>
</tr>
<tr>
<td>Brant, A. R., Dhillon, P., Hull, S., Coleman, M., Ye, P. P., Lotke, P. S., Folan, J., &amp; Scott, R. K. (2020). Integrating HIV pre-exposure prophylaxis into family planning care: A RE-AIM framework evaluation. <em>AIDS</em></td>
<td>The purpose of this research was to evaluate the Quasi-experimental study without control: pre-</td>
<td>The study was conducted at a family planning center in a</td>
<td>Data collection included baseline measures of</td>
<td>The results indicate that before staff education, PrEP</td>
<td><strong>Strengths:</strong> Supports the current project. <strong>Weaknesses:</strong> This research demonstrates the concrete impact that staff</td>
<td>Supports the current project.</td>
<td>Level III</td>
<td></td>
</tr>
</tbody>
</table>

**Citation**

<table>
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<tbody>
<tr>
<td>impact of staff education for PrEP in terms of provider attitudes, patient assessment, and number of PrEP prescription s provided to patients.</td>
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<tr>
<td>/post-intervention study.</td>
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<tr>
<td>high prevalence community. Results from a total of 640 clinical encounters and 515 patients were recorded.</td>
</tr>
<tr>
<td>staff knowledge and comfort with PrEP as well as number of PrEP prescriptions made before and following education.</td>
</tr>
<tr>
<td>prescriptions for patients seen in the clinic averaged 10%. Two months following the educational program, this increased to 65%. Further patient screening for PrEP increased from 50% to 98.4% following education.</td>
</tr>
<tr>
<td>Provides quantification of outcomes that can result from staff education.</td>
</tr>
<tr>
<td><strong>Weaknesses:</strong> Small sample from single site, impacts generalizability.</td>
</tr>
<tr>
<td>Convenience sample used, impacts internal validity.</td>
</tr>
<tr>
<td>Education can be effective for improving patient care through assessment for PrEP as well as for prescribing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Edelman, E. J., Moore, B. A., Calabrese, S. K., Berkenblit, G., Cunningham, C. O., Ogbuagu, O., Patel, V. V.,</th>
</tr>
</thead>
<tbody>
<tr>
<td>The purpose of this study This was a cross- The setting included 240 Data collection Among those surveyed</td>
</tr>
<tr>
<td>The results of this study</td>
</tr>
<tr>
<td>Phillips, K. A., Tetault, J. M., Shah, M., &amp; Blackstock, O. (2020). Preferences for implementation for HIV pre-exposure prophylaxis (PrEP): Results from a survey of primary care providers. <em>Preventive Medicine Reports, 17</em>, 101-112. <a href="https://doi.org/10.1016/j.pmedr.2019.101012">https://doi.org/10.1016/j.pmedr.2019.101012</a></td>
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<tr>
<td>Henny, K. D., Duke, C. C., Geter, A., Gaul, Z., Frazier, C., Peterson, J., Bauchacz, K., &amp; Sutton, M. Y. (2019). HIV-related training and correlates of knowledge, HIV screening and prescribing of nPEP and PrEP among primary care providers in Southeast United States, 2017. <em>AIDS and Behavior, 23</em>(11), 2926-2935. <a href="https://doi.org/10.1007/s10461-019-02545-1">https://doi.org/10.1007/s10461-019-02545-1</a></td>
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<tr>
<td>Study</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Pittenger, K., Williams, B. L., Mecklenburg, R. S., &amp; Blackmore, C. C. (2015). Improving acute respiratory care through nurse phone care and academic detailing of physicians. <em>Journal of the American Board of Family Medicine</em>, 28, 195-204. <a href="https://doi.org/10.3122/jabfm.2015.02.140197">https://doi.org/10.3122/jabfm.2015.02.140197</a></td>
</tr>
<tr>
<td>Safi, A. G., Perin, J., Mantios, A., Schumacher, C., Chaulk, C. P., &amp; Jennings, J. M. (2017). Public health detailing to increase routine HIV screening in Baltimore, Maryland: Satisfaction, feasibility, and effectiveness. <em>Public Health Reports</em>, 132(6), 609-616. <a href="https://doi.org/10.1177/0033354917732333">https://doi.org/10.1177/0033354917732333</a></td>
</tr>
</tbody>
</table>
Baltimore, Maryland.

training there had been an increase in HIV screening by 74.4%.

Does not demonstrate causation for academic detailing.


To assess barriers impacting the ability of providers at local health departments to provide PrEP to at-risk patients.

Cross-sectional study.

This study included health directors from 54 county and district health departments in North Carolina.

An online web-based survey created by the study authors was used for data collection.

The results indicate that lack of provider knowledge was noted as having a significant role the inability or unwillingness of health centers to recommend PrEP to patients (28%). Further 68% of respondents identified education as being the top resource needed to prescribe and manage PrEP in patient care.

Strengths:
- Large community sample of healthcare providers.
- Demonstrates the need for provider education.

Weaknesses:
- Only public health centers used, lack of generalizability.
- Does not demonstrate causation for provider education.

Demonstrates the need for provider education to integrate PrEP into patient care.

Level IV
Appendix C: Informed Consent Form

ADULT ONLINE CONSENT TO PARTICIPATE IN A RESEARCH STUDY
Health Provider Academic Detailing to Increase Knowledge of PrEP for HIV Prevention

SUMMARY INFORMATION

Things you should know about this study:

- **Purpose:** The purpose of the study is to increase primary care provider knowledge of PrEP (pre-exposure prophylaxis) and PrEP prescribing for patients at-risk for contracting HIV by comparing knowledge gains made through usual education (a pamphlet) or academic detailing.

- **Procedures:** If you choose to participate, you will be asked to either review a pamphlet from the CDC regarding PrEP or attend an academic detailing session.

- **Duration:** This will take about 15-20 minutes to review the pamphlet or 35 to 45 minutes to complete a session of academic detailing. Additionally, participants will be required to complete pre-intervention assessments (demographic questionnaire and knowledge assessment) as well as a post-intervention assessment of knowledge. Total these activities should require 90 minutes to complete.

- **Risks:** The main risk or discomfort from this research is participants may become fatigued during academic detailing or participants may become frustrated because they have questions and cannot access the principle investigator to have the questions answered.

- **Benefits:** The main benefit to you from this research is increased provider knowledge of PrEP prescribing. This should translate into increased used of the intervention in clinical care of the patient.

- **Alternatives:** There are no known alternatives available to you other than not taking part in this study.

- **Participation:** Taking part in this research project is voluntary.

Please carefully read the entire document before agreeing to participate.
PURPOSE OF THE STUDY

The purpose of this study is to increase primary care provider knowledge of PrEP and PrEP prescribing.

NUMBER OF STUDY PARTICIPANTS

If you decide to be in this study, you will be one of 30 people in this research study.

DURATION OF THE STUDY

Your participation will involve between two and three hours to complete.

PROCEDURES

If you agree to be in the study, we will ask you to do the following things:

1. Agree to participate.
2. Sign informed consent agreeing to participate.
4. Be assigned to a pamphlet or academic detailing educational program.
5. If assigned to the pamphlet group: review pamphlet and ask additional questions via Zoom.
6. If assigned academic detailing, spend 35 to 45 minutes on Zoom receiving education.
7. Regardless of group complete post-intervention knowledge assessment.

RISKS AND/OR DISCOMFORTS

The study has the following possible risks to you: First, for participants in the academic detailing group, discomfort may arise from sitting too long during the educational session. If this occurs, breaks will be offered to participants. The likelihood of this is low. Second, for participants in the pamphlet group, frustration over the need for additional knowledge may arise. This will more than likely be minimal and additional 15 minute Q&A sessions via Zoom will be offered to providers to acquire additional information regarding PrEP.

BENEFITS

The study has the following possible benefits to you including the potential to markedly increase knowledge regarding PrEP and PrEP prescribing. This outcome should result in a practice change that should: increase screening for patients at-risk of contracting HIV and increase PrEP
prescribing. As more patients utilize PrEP, this should result in a reduction in the overall transmission of HIV, leading to a reduction in the number of new HIV cases reported. Slowing and preventing the spread of HIV should eventually lead to its eradication from the population.

ALTERNATIVES

There are no known alternatives available to you other than not taking part in this study.

CONFIDENTIALITY

The records of this study will be kept private and will be protected to the fullest extent provided by law. In any sort of report we might publish, we will not include any information that will make it possible to identify you. Research records will be stored securely and only the principal investigator will have access to the records. However, your records may be inspected by authorized University or other agents who will also keep the information confidential.

USE OF YOUR INFORMATION

- Your information collected as part of the research will not be used or distributed for future research studies even if identifiers are removed.

COMPENSATION & COSTS

No compensation will be provided for your participation in the study. There are no costs to you for participating in this study.

RIGHT TO DECLINE OR WITHDRAW

Your participation in this study is voluntary. You are free to participate in the study or withdraw your consent at any time during the study. You will not lose any benefits if you decide not to participate or if you quit the study early. The investigator reserves the right to remove you without your consent at such time that he/she feels it is in the best interest.

RESEARCHER CONTACT INFORMATION

If you have any questions about the purpose, procedures, or any other issues relating to this research study you may contact Elisa Corzo-Sanchez at University of Miami RAW clinic, by phone at 786-200-6373 or by email at exc960@med.miami.edu.

IRB CONTACT INFORMATION
If you would like to talk with someone about your rights of being a subject in this research study or about ethical issues with this research study, you may contact the FIU Office of Research Integrity by phone at 305-348-2494 or by email at ori@fiu.edu.

PARTICIPANT AGREEMENT

I have read the information in this consent form and agree to participate in this study. I have had a chance to ask any questions I have about this study, and they have been answered for me. I understand that I will be given a copy of this form for my records.

________________________________
Signature of Participant

__________________
Date

________________________________
Printed Name of Participant

________________________________
Signature of Person Obtaining Consent

__________________
Date
Appendix D: Demographic Survey

Instructions: Please answer or check the correct box beside the answers that best describe you.

1. What is your age in years? __________

2. What is your gender (check one)?
   - Male
   - Female
   - Prefer Not to Say

3. What is your race (check one)?
   - White
   - African American
   - Latino/Hispanic
   - Other
   - Prefer not to Say

4. What is your current clinical role (check one)?
   - MD or DO
   - Advanced Practice Nurse
   - Physician Assistant

5. How many years have you been in practice (check one)?
   - 0-5 Years
   - 6-10 Years
   - 10+ Years
Appendix E: Knowledge Questionnaire: Provider PrEP Knowledge Scale

Instructions: Review the 10 statements below and determine if the statement is true or false.

Check the correct answer.

1. PrEP should be prescribed to patients who are at-risk for contracting HIV.
   True    False
2. PrEP can be used as the sole intervention for the prevention of HIV.
   True    False
3. The two most common brand names of PrEP include Descovy and Ziagen.
   True    False
4. Only providers with specialization in infectious diseases and HIV medicine can prescribed PrEP.
   True    False
5. A patient reports that she has a history of inconsistent condom use with her sexual partners. She should be prescribed PrEP.
   True    False
6. PrEP does not have to be taken consistently to provide protection against the spread of HIV.
   True    False
7. PrEP is considered safe for pregnant and breastfeeding women.
   True    False
8. People with HIV should be prescribed PrEP.
   True    False
9. Following the initiation of PrEP, HIV testing should be conducted every six months.
   True    False
10. While Medicaid can provide financial assistance for covering the costs of PrEP, most insurance companies do not provide this coverage.

True  False

Instructions: Review the questions below and check the best answer.

1. PrEP consists of a single pill provided daily to the patient and includes which two medications? (check all that apply)
   A. Bictegravir and dolutegravir
   B. Tenofovir disoproxil fumarate and tenofovir alafenamide
   C. Emtricitabine and tenofovir alafenamide
   D. Tenofovir disoproxil fumarate and emtricitabine

2. Which groups should be offered PrEP? (check all that apply)
   A. Sexually active heterosexual men and women without HIV.
   B. Persons without HIV who inject drugs.
   C. Men who have sex with men without HIV.
   D. Sexually active transgender persons without HIV.

3. When prescribing PrEP caution should be used in which groups? (check all that apply)
   A. Patients in impaired renal function.
   B. Patients with impaired hepatic function.
   C. Patients with cardiovascular disease.
   D. Patients at risk for DVT.

4. A patient taking PrEP is found to be HIV positive at a follow-up visit. Which of the following actions must be taken by the provider? (check all that apply)
   A. Initiate treatment for HIV.
B. Refer the patient for comprehensive HIV care through a specialist.

C. Counsel the patient about actions to prevent the spread of HIV including barrier protections during sex.

D. Report the infection to the local health department.

5. After a patient initiates PrEP, what additional testing should be offered to the patient every six months? (check all that apply).
   A. Serum creatinine.
   B. Bacterial STIs.
   C. Hepatic function.
   D. EKG and cardiac enzymes.

6. Sudden discontinuation of PrEP can result in which of the following:
   A. Cardiac arrhythmia.
   B. Acute renal failure.
   C. Rebound hepatitis.
   D. Increased risk of infection.

7. What is the benchmark creatinine clearance that should be present when initiating PrEP for the patient?
   A. ≥70 mL/minute
   B. ≥60 mL/minute
   C. ≥50 mL/minute
   D. ≥40 mL/minute

8. What instructions should be provided to the patient regarding taking PrEP.
   A. Take by mouth with food in the morning.
B. Take by mouth at night.
C. Take by mouth any time during the day with or without food.
D. Take sublingually before a meal.

9. On-demand PrEP should include which of the following:
   A. Taking 2 pills 2-24 hours before potential exposure and 1 pill for 2 days after potential exposure.
   B. Taking 2 pills per day for 7 days following potential exposure.
   C. Taking 1 pill before potential exposure and 1 pill following potential exposure.
   D. Taking 2 pills following potential exposure for 3 days.

10. While PrEP can be effective for preventing the spread of HIV, providers must also counsel the patient about which of the following? (check all that apply).
    A. The use of barrier protections during sex.
    B. Signs and symptoms of other STIs.
    C. Discussing HIV with current partners.
    D. Alcohol use cessation.
Appendix F: Provider Pamphlet

1. What is PrEP?
PrEP is a form of pre-exposure prophylaxis. It is the use of antiretroviral medication to prevent acquisition of HIV infection. PrEP is used by people without HIV who are at risk of being exposed to HIV through sexual contact or injection drug use. Two medications have been approved for use as PrEP by the FDA. Each consists of two drugs combined in a single oral tablet taken daily:
- Emtricitabine (FT 200 mg) in combination with tenofovir disoproxil fumarate (TDF) 300 mg or (TDF - brand name Truvada)
- Emtricitabine (FT 200 mg) in combination with tenofovir alafenamide (TAF) 25 mg (TAF - brand name Descovy)

These medications are approved to prevent HIV infection in adults and adolescents weighing at least 35 kg (77 lb) as follows:
- Daily and PrEP with TDF is recommended to prevent HIV infection among all persons at risk through sex or injection drug use.
- Daily and PrEP with TAF is recommended to prevent HIV infection among persons at risk through sex, excluding people at risk through receptive vaginal sex. TAF is not yet been studied for HIV prevention for receptive vaginal use.

PrEP should be considered part of a comprehensive prevention plan that includes a discussion about adherence to PrEP use, other sexually transmitted infections (STIs), and other risk reduction methods.

2. What are the guidelines for prescribing PrEP?
Comprehensive guidelines for prescribing PrEP have been published by the Centers for Disease Control and Prevention (CDC) in A Clinical Practice Guide to Providing Antiretroviral Postexposure Prophylaxis for Health-care Workers (May 2016). Both can be found on the CDC website: www.cdc.gov/preventingprEP

The Clinical Providers’ Supplement contains additional tools for clinicians providing PrEP such as a patient provider checklist, patient information sheets, provider information sheets, a risk assessment exercise, supplemental counseling information, billing codes, and practice quality measures. If questions arise or prescribing advice is needed, clinicians should consult the National Clinicals Consultation Center PrEP Line 800-955-0977 (Monday - Friday 8 AM - 8 PM EST).

The U.S. Preventive Services Task Force has given a grade recommendation: P This grade indicates that these authors found that there is a high certainty that the net benefit of this service is substantial. For more information, view the full recommendation online at www.uspreventiveservicestaskforce.org.

3. Who can prescribe PrEP?
Any licensed prescriber can prescribe PrEP. Specialization in infectious diseases or HIV medicine is not required for primary care providers who routinely see people at risk for HIV acquisition should consider offering PrEP to all eligible patients.

4. To whom should I offer PrEP?
PrEP is for people without HIV who are at risk of acquisition from sex or injection drug use. People at risk who should be assessed for PrEP include:
- Sexually active gay and bisexual men without HIV
- Sexually active heterosexual men and women without HIV
- People who are not using prescribed non-occupational post-exposure prophylaxis (PEP) and report continued risk behavior, or who have used multiple courses of PEP

5. How is PrEP prescribed?
PrEP is prescribed to be taken once daily by mouth. The full prescribing information is available at https://www.pfizer.com/medicines/aids/medicines/medication-prEP.pdf.

6. What is the evidence base for PrEP?
Multiple studies have demonstrated that PrEP is highly effective when taken as prescribed. For more information on evidence related to daily, consistent, and on-demand PrEP use, visit www.cdc.gov/hiv/risk/post-exposure/prevention-guidelines.html.

7. How important is adherence to PrEP?
To be effective, PrEP requires high levels of adherence. When taken as prescribed, oral PrEP is extremely effective in preventing HIV. A few cases of HIV infection have been reported among MSM men who have adherence to PrEP was verified. These rare cases indicate that the risk of HIV acquisition with high adherence to PrEP is extremely low, but not completely eliminated.

Based on existing research, PrEP reaches maximum protection from HIV for receptive sex at about 7 days of daily use. For receptive vaginal sex and injection drug use, PrEP reaches maximum protection at up to about 28 days of daily use.

8. Is PrEP safe?
Yes, PrEP has not caused serious short- or medium-term safety concerns. TDF as PrEP is considered generally safe for pregnant and breastfeeding women. Providers and patients who are or may become pregnant and have concerns should discuss 24 by the risk of ongoing HIV transmission through sex or drug injection. It is sufficiently high to use PrEP knowing that pregnancy is associated with an increased risk of HIV acquisition.

Since TDF and TAF are eliminated by the kidneys, PrEP should only be used in patients without renal impairment (see Renal Function, below). It should be co-administered with care in patients taking other drugs eliminated by the kidneys (e.g., angiotensin blockers, calcium channel blockers, diuretics, echinocandins, angiotensin-converting enzyme inhibitors, and aminoglycosides, and high-dose or multiple NSAIDs). Drugs that decrease renal function may increase serum concentrations of tenofovir or emtricitabine.

9. Who should not be prescribed PrEP?
1. People with HIV: Individuals must be confirmed as HIV-negative before initiating PrEP. Existing persons with acute HIV infection are critically important, as there is a risk of developing resistant HIV. If they are inadvertently started on PrEP or TDF/TAF, they may become infected.

2. People with renal insufficiency: Patients should confirm that the patient’s estimated creatinine clearance is 20 mL/minute (Cockcroft-Gault formula) before initiating TDF as PrEP or 100 mL/minute before initiating TAF as PrEP.

10. What clinical assessment is required for individuals beginning PrEP?
HIV Testing
HIV testing is required to confirm that patients do not have HIV infection when they start taking PrEP. Whole antigen/antibody tests are preferred, at a minimum, clinicians should document a negative antibody test result within the week before starting or re-instating PrEP medications. The required HIV testing can be accomplished by (1) drawing blood and sending the specimen to the laboratory for testing or (2) performing a rapid, point-of-care PrEP approved test. Although tests should not be used to screen for HIV infection when considering PrEP, because (3) they may be less sensitive than blood tests. A listing of FDA-approved HIV tests, specimen requirements, and time to detection of HIV infection are available online at www.cdc.gov/hiv/testing/laboratorytests.html.
Since PrEP is indicated for individuals who report sexual or injection behaviors that place them at risk of HIV acquisition, clinicians should suspect HIV infection in persons known to have been exposed recently. Clinicians should select a history of signs or symptoms of acute infection during the preceding month or on the day of evaluation in all PrEP candidates with a negative or an indeterminate result on an HIV antibody test.

For patients with signs/symptoms of acute HIV infection within the prior four weeks, the following options are suggested:

1. Test patient with a combination antibody/antigen assay, ideally with a laboratory-based method. If the test is nonreactive (negative), PrEP can be initiated.
2. Test patient with a viral load (VL) assay. If the patient has a measurable VL ≤3,000 copies/mL, infection is unlikely, but PrEP should be delayed until testing is repeated, if the VL is below the level of detection of the assay, and the patient has no signs/symptoms on that day; PrEP can be initiated.
3. Defract PrEP and retest patient for HIV antibody in one month.

Renal Function

When used in PrEP, TDF-containing regimens can cause declines in renal function that are typically small and of unknown clinical significance, and that also typically reverse with discontinuation of the regimens. Occasional cases of acute renal failure, including Fanconi’s syndrome, have occurred. Therefore, all persons considered for PrEP must have their renal function assessed at initiation as well as periodically thereafter so that PrEP can be stopped, if necessary. Renal function should be assessed using the Cockcroft-Gault formula and the patient’s serum creatinine value to calculate an estimated creatinine clearance (eGFR). TDF is approved for use in persons with an eGFR ≥50 mL/min.

Maternal and Infant Deaths

Emotional and physical care can be used to treat HIV and discrimination of these medicines can cause maternal death. HIV infection is not a contraindication to the use of all persons considered for PrEP with TDF. If TDF or a TDF-containing regimen is to be used, if the patient has a measurable VL ≤3,000 copies/mL, infection is unlikely, but PrEP should be delayed until testing is repeated, if the VL is below the level of detection of the assay, and the patient has no signs/symptoms on that day; PrEP can be initiated.

11. What additional support and ongoing assessments are required for patients on PrEP?

PrEP initiates treatment of a combination prevention plan. It is critical, however, that patients are monitored and receive CDC guidelines recommendations. Provide the following services:

- At 3 months after PrEP initiation:
  - Test for HIV
  - Measure viral load and estimate creatinine clearance
  - Provide medication adherence and behavioral risk reduction support, especially if
    - MSMs: screen for bacterial STIs*
    - Women with reproductive potential: test for pregnancy, and
    - Women with reproductive potential and/or PrEP: access to sterile needles/syringes and to substance use cessation treatment services.

- Every 2 months after the 3-month schedule:
  - Test for HIV
  - Measre viral load and estimate creatinine clearance
    - For women sexually active patients: screen for bacterial STIs*

- Every 6 months after the 3-month schedule:
  - Measure serum creatinine and estimate creatinine clearance

*Measures that are indicated for PrEP counseling and care. Patients and healthcare providers should use these tools to monitor adherence to PrEP.

12. How will my patients pay for PrEP medication, clinical visits, and lab tests?

Most insurance plans and state Medicaid programs cover PrEP. Prior authorization may be required.

Patient assistance programs: There are re-prescription assistance programs that provide that PrEP medications to patients with no insurance to cover PrEP cost. To learn more, call 855-447-4103 or visit www.gapnprepp.com

Some states have their own PrEP assistance programs. Some cover medication, some cover clinical visits and lab costs, some cover both. To learn more visit: https://www.nahda.org/prepcost-resources/prep-assistance-programs

13. How should a patient acquire HIV infection while taking PrEP to manage?

Once additional laboratory tests have confirmed infection, the following steps should be taken:

- Initiate treatment or refer for comprehensive HIV care.
- Inform the patient about how to prevent HIV transmission to others and to improve their own health.
- Report the new HIV infection to the local health department.

To learn more about HIV treatment, visit: https://www.cdc.gov/hiv/patient-care/

REFERENCES


This brochure can be found online at: https://www.cdc.gov/stophivtogether/library/prescribe-hiv-prevention/brochures/cdc-lsht-php-brochure-prep-faq.pdf
Appendix G: Academic Detailing Session Outline

The following topics will be covered in the academic detailing session with the provider:

- A review of PrEP including medications that are used and their role in preventing the spread of HIV.
- Review of guidelines for prescribing PrEP.
- Screening patients for PrEP use.
- How to prescribe PrEP including dosing, administration, etc.
- Safety of PrEP including patient side effects: renal and hepatic implications.
- Additional and ongoing supports for PrEP when providing patient care.
- Cost issues and how to help patients.
- Management of the patient on PrEP who contracts HIV.
MEMORANDUM

To: Dr. Arturo Gonzalez
CC: Elisa Corzo-Sanchez

From: Maria Melendez-Vargas, MIBA, IRB Coordinator
Date: June 8, 2021

Protocol Title: "Health Provider Academic Detailing to Increase Knowledge of PrEP for HIV Prevention: A Quality Improvement Project"

The Health Sciences Institutional Review Board of Florida International University has approved your study for the use of human subjects via the Expedited Review process. Your study was found to be in compliance with this institution’s Federal Wide Assurance (00000060).

IRB Protocol Approval #: IRB-21-0217 IRB Approval Date: 06/08/21

TOPAZ Reference #: 110142 IRB Expiration Date: 06/08/24

As a requirement of IRB Approval you are required to:

1. 1) Submit an IRB Amendment Form for all proposed additions or changes in the procedures involving human subjects. All additions and changes must be reviewed and approved by the IRB prior to implementation.
2. 2) Promptly submit an IRB Event Report Form for every serious or unusual or unanticipated adverse event, problems with the rights or welfare of the human subjects, and/or deviations from the approved protocol.
3. 3) Utilize copies of the date stamped consent document(s) for obtaining consent from subjects (unless waived by the IRB). Signed consent documents must be retained for at least three years after the completion of the study.

4. 4) Receive annual review and re-approval of your study prior to your IRB expiration date. Submit the IRB Renewal Form at least 30 days in advance of the study’s expiration date.

5. 5) Submit an IRB Project Completion Report Form when the study is finished or discontinued.

HIPAA Privacy Rule: N/A

Special Conditions: N/A

For further information, you may visit the IRB website at http://research.fiu.edu/irb. MMV/em