

Impact of Expedited Partner Therapy

Sutha M. Fernando

School of Nursing: The University of Texas at El Paso

DNP Program

DNP Chair: Laura Rodriguez, DNP, APRN, MCH-CNS

DNP Quality Improvement Project

Date of Submission

04/20/2022

Abstract

Sexually transmitted infections (STIs), including *Chlamydia trachomatis* and *Neisseria gonorrhoeae*, have reached record high rates in the United States. Sexually transmitted infections disproportionately affect reproductive-aged males and females 15–44 years of age, who account for 65% and 42% of the total reported *C. trachomatis* and *N. gonorrhoeae* cases, respectively. These infections are the most common treatable sexually transmitted infections in the United States. The purpose of this evidence-based practice project was to decrease the rates of recurrence of STIs in males and females older than 17 years at a private family practice clinic in Carrollton, Texas, in the Dallas metropolitan area over a period of 6 weeks. An average of 25 confirmed cases of STIs was observed quarterly in the clinic. In January 2022 alone, 20 cases of confirmed STIs were treated in the clinic, and EPT was offered for each sexual partner with whom they had had contact within the previous 60 days. Only ten of those 15 patients accepted EPT, with an acceptance rate of 57%. All twenty-five patients testing positive for infection, regardless of whether they accepted EPT, were asked to return for an infection check at 8 weeks after diagnosis to test for the rate infection recurrence. If EPT is found to be effective at reducing the rates of recurrence of infection in the sexually transmitted infection at the clinic, the intervention will be used on a permanent basis to reduce rates of recurrence of STI clinic-wide and in the community.

Keywords: Sexually transmitted infection (STI), gonorrhea, chlamydia trachomatis, partner notification, partner referral, and EPT.

Introduction

The Centers for Disease Control and Prevention (CDC, 2021) estimates that twenty million new sexually transmitted infections occur each year—almost half among young people 15–24 years of age. The cost of STDs to the U.S. health care system is estimated to be as high as \$16 billion annually. Untreated STDs can lead to serious long-term health consequences, particularly for adolescent girls and young women. Pelvic inflammatory disease (PID) among adolescents and young adults can result from untreated sexually transmitted infections (STIs), such as gonorrhea and chlamydia trachomatis (CT) (Greydanus et al., 2021). The CDC has estimated that undiagnosed and untreated STDs cause at least 24,000 women in the United States each year to become infertile.

The CDC, in 2021, estimated that each case of PID, which is caused primarily by CT and/or *Neisseria gonorrhoea* (GC) costs an average of \$3202. Most health care providers advise their clients with STIs to notify their sex partners. However, the CDC estimates that the proportion of partners who seek evaluation and treatment in response to patient referral ranges from 29% to 59%. Studies have demonstrated that re-infection of treated index participants by untreated partners accounts for 14%–30% of incident bacterial STIs.

In 2019, a total of 616,392 cases of gonorrhea were reported to the CDC, thus making it the second most common notifiable condition in the United States that year. Rates of reported gonorrhea have increased 92% since the historic low in 2009. During 2018 to 2019, the overall rate of reported gonorrhea increased 5.7%. In 2019, a total of 1,808,703 cases of CT infection were reported to the CDC, making it the most common notifiable condition in the United States that year. This case count corresponds to a rate of 552.8 cases per 100,000 population, representing an increase of 2.8% over the rate in 2018. During 2018 to 2019, rates of reported

chlamydia increased among males and females of all racial and ethnic groups in all regions of the United States.

Local Issue

Gonorrhea and chlamydia are the most frequently reported bacterial sexually transmitted infections in the United States. In 2018, 1,758,668 cases of chlamydia were reported to the CDC from 50 states and the District of Columbia. The CDC estimates that 1.6 million new gonococcal infections occurred in the United States in 2018, more than half of which occurred among young people 15–24 years of age. Gonorrhea is the second most reported bacterial sexually transmitted infection in the United States. Many STI cases are not reported because most people with STIs are asymptomatic and do not seek testing (CDC 2021).

In 2018, 145,874 cases of chlamydial infection and 46,958 cases of gonorrheal infection were reported in the Texas Department of State Health Services (2022). The local clinic where the clinician works treats at least 10–12 patients with STIs monthly, most of whom are patients returning for the same issue. The clinician believes that it could be secondary to lack of partner treatment.

Available Knowledge

Most health care providers tell their clients with STIs to notify their sex partners and encourage them to seek testing and treatment. This scenario is ideal but does not always occur. Every health care provider has the responsibility to report communicable disease to the local health department. Health departments tend to focus on partner services for syphilis and HIV and are less likely to contact and treat partners exposed to gonorrhea and chlamydia. EPT helps prevent re-infection and reduce transmission of STIs. It saves money by reducing the need to treat more advanced diseases. Moreover, it allows clinicians to treat more people. EPT may also

help reduce new HIV infections, because untreated STIs can increase the risk of acquiring and transmitting HIV (CDC, 2021).

Specific Aims

The clinic protocol currently being used differs from the proposed protocol in that it allows for partners of the patients to be treated only if they present to the clinic for treatment. For STI exposed partners to be treated by the clinic, they must return to the STI clinic for their prescriptions. On most occasions, the partners of the patients do not return to clinic to receive treatment, thus resulting in repeated STIs and repeated visits of the patients for the same condition. Expedited partner therapy (EPT), the practice of providing the sexual contacts of index patients who have tested positive for infection with the same medications, without the contacts being assessed by a medical provider, has been extensively studied and found to effectively decrease the rates of reinfection of this common infection (CDC, 2021). Combined screening and treating of not only patients but also their partners through EPT would reduce the rates of sexually transmitted infection (CDC, 2021). Changes in the treatment guidelines for STIs and a reduction of STIs were the intended improvement aims of this intervention project. Guidelines offer clinical decision support, but policies sometimes require updates.

PICOT Question for the Project

The purpose of this DNP quality improvement (QI) project was to implement an EPT program that has already been found nationally to reduce rates of recurrence of STI in male and female patients who test positive for STIs in clinical settings, and to reduce the return rates among patients' repeat visits for the same reason.

Immanuel Family Clinic (IFC) is a nurse practitioner-owned primary care clinic that also encourages walk-in appointments. Reviewing the 10-day reflective practice log indicated that a

variety of acute and chronic medical conditions require care in this urban primary care practice. The author identified three opportunities to improve the care provided to the patients. Though there are many conditions throughout the life span could benefit from QI projects in family practice. After a meeting with the chair, EPT was selected for this evidence-based project.

According to the review process, the PICOT question guiding the QI project was as follows:

P: Patients 15–45 years of age tested positive for STIs

I: Treated and provided EPT

C: Instead of conventional treatment and partner referral

O: Will have less reinfection rates

T: In a 6-week period

Hence the PICOT question is, can we reduce reinfection of STI among patients aged 15 – 45 years who test positive for sexually transmitted infections, by providing EPT instead of conventional treatment and partner referral in a period of 6 weeks?

Methods

Context

The PICOT question came from a 10-day reflective practice in the family practice at IFC. The advanced practice provider formulated the QI proposal, including prescribing EPT to partners of the patients testing positive for STIs. The QI proposal was submitted and accepted by the DNP project chair. The IFC administrator approved the project and signed the work letter allowing the DNP cohort to complete the project at the site. For ethical training in a QI intervention, the author completed Collaborative Institutional Training Initiative (CITI) training before applying to the University of Texas at El Paso Institutional Review Board, which approved the QI project on December 2, 2021, with a letter designating it as not research. The

project's significance is providing EPT for sexual partners of patients testing positive for STIs, to enable a more effective intervention to control STIs among the local community. To ensure patient confidentiality and anonymity in the QI project, all participants and their names were de-identified.

Because of the rising rates of STIs every year, EPT has been approved by the Texas Department of Health Services (TDHS) to reduce the recurrence and transmission of STIs. According to the Texas Health Department, the provider can supply clients with oral medications to give to their partners, prescribe extra doses of medication for partners in a client's name, or write prescriptions for clients to deliver to their partners (TDHS, 2021).

Setting

The QI project implementation occurred at IFC in Carrollton, Texas. The project was started on January 24th and concluded on March 18, 2022. Although patient benefit is the priority, patients do not often receive the most appropriate treatment. The main concern is that the partner may not accept treatment or may not return for retesting. Several concerns have been raised regarding the stigma of being blamed for the STI and the fear of abuse. Traditional partner notification methods, in which index patients notify their sexual contacts about possible exposure and need for treatment, have shown to be minimally effective in reducing reinfection rates (CDC, 2015). EPT, the practice of providing the sexual contacts of index patients who tested positive for infection with the same medications, without assessment of the contacts by a medical provider, has been studied extensively and found to effectively decrease the rates of reinfection of this common infection (CDC, 2015). Combined with screening and traditional partner notification, EPT reduces the rates of CT infection (CDC, 2015).

Ethical Considerations

The CDC (2022) has addressed disparities in STIs by explaining that poverty, income inequality, high unemployment rates, and low education are contributing factors. Rates vary according to gender, age, and ethnicity. The spread of STDs is directly affected by social, economic, and behavioral factors. Such factors may pose major obstacles to STD prevention because of their influence on social and sexual networks, access to and provision of care, willingness to seek care, and social norms regarding sex and sexuality. Among certain vulnerable populations, historical experience with segregation and discrimination exacerbates the influence of these factors.

Certain racial and ethnic groups (mainly African American, Hispanic, and American Indian/Alaska Native populations) have higher rates of STDs than Whites. Race and ethnicity in the United States are correlated with other determinants of health status, such as poverty, limited access to health care, fewer attempts to receive medical treatment, and living in communities with high rates of STDs. According to the CDC, STIs are more prevalent among African Americans, at rates 5% to 8% higher than those of non-Hispanic White people. Hispanic or Latino people are one to two times more likely to have STIs than non-Hispanic White people. (CDC, 2021). The CDC has also reported data indicating that young people 15–24 years of age make up 61% of chlamydia cases and 42% of gonorrhea cases.

However, because most cases of STI at the local clinic have historically existed in the population over the age of 17, in this study, the age range included patients over the age of 17. Both female and male patients were included in the study. The goal of the current STI treatment protocol at the local clinic was to reduce the rate of STI in the population at the local clinic and community by providing treatment to partners of patients testing positive for STIs. The current

clinic protocol being used differs from the proposed protocol in that it allows for partners of index patients to be treated only if they present to the clinic for treatment. For STI exposed partners to be treated by the clinic, they must return to the STI clinic for their prescriptions. The study group at the project site is considered a vulnerable population in that they tend to have low socioeconomic status, to be underserved, and to have a higher percentage of minority ethnic groups than the surrounding community. To ensure that research was ethical, individual privacy was maintained by keeping patient involvement from public view. Confidentiality was maintained by allowing only people directly involved in the project to view the documents and logs.

EBP Intervention

The CDC, in 2021, stated that “EPT is one of the best tools available for decreasing gonorrhea and chlamydia rates.” Although EPT has been legal in many states including Texas, it is underused because providers either do not know about it or are uncomfortable using it (CDC, 2021). This project determined the effects of an evidence-based intervention of EPT comparing patient outcomes and recurrence of STIs among two groups—those who accepted EPT and those who did not accept EPT. Patients who met the inclusion criteria were offered EPT. Others were provided treatment and advised to inform their partners to seek care.

For this evidence-based QI project, each patient over the age of 17 who presented for treatment of STI after testing positive for chlamydia or gonorrhea at IFC was offered EPT for each of their heterosexual partners in the prior 60 days. In addition, the patients who tested positive for STIs (gonorrhea, chlamydia, or both), and who were provided with EPT also received patient counseling and written treatment instructions for partner(s) (American College of Obstetricians and Gynecologists, 2020).

CDC Recommendations for EPT For Gonorrhea and Chlamydia

In cases in which gonorrhea EPT (provision of prescriptions or medications for patients to take to their sex partners without the health care provider first examining the partners) is permissible by state law, and the partner is unable or unlikely to seek timely treatment, the partner may be treated with a single 800 mg dose of cefixime if a chlamydia infection in the patient has been excluded. If a chlamydia test result has not been documented, the partner may be treated with a single dose of 800 mg oral cefixime plus 100 mg oral doxycycline two times/day for 7 days. If adherence with multiday dosing is a considerable concern, 1 g azithromycin can be considered, although it has lower treatment efficacy among people with rectal chlamydia. As has always been the case at IFC, medication or prescriptions provided as part of EPT were accompanied by treatment instructions, appropriate warnings about taking medications (if the partner is pregnant or has an allergy to the medication), general gonorrhea health education and counseling, and a statement advising that partners seek personal medical evaluation, particularly women with symptoms of PID (CDC, 2021).

These index patients were asked how many sexual partners they had had within the past 60 days and were given EPT packs, including prescription and printed educational information, for as many as three of their sexual partners for the treatment of STI.

For patients who tested positive for chlamydia, a prescription was given for 100 mg doxycycline twice daily for 7 days. For those who tested positive for gonorrhea, a single dose of 800 mg oral cefixime plus 100 mg oral doxycycline two times/day for 7 days was prescribed for both the patients and as many as three sexual partners in the prior 3 months. Each patient who tested positive for STI, whether accepting EPT or not, was asked to return to the clinic in 6

weeks to be re-tested for STIs. Data were collected and tracked for each of these patients over this period to assess the percentage of patients accepting EPT for their partners and the effects of EPT on recurrence rates in this population at the project site.

Patients in the 6 weeks of EPT intervention represented the study group of index patients followed over the 6 weeks. A test of cure was limited to a 6-week re-testing time. Therefore, the intervention began in February 2022 and finished in mid-March 2022 to allow for final visits for testing of cure at 6 weeks post-treatment. Each patient testing positive for STIs was recorded in a secure database in the computer system at the project site. The provider who offered the EPT to the positive STI patients entered the data into the system. Within the secure database, each positive patient's record was stored, including whether EPT was offered, whether the intervention was accepted or rejected, and if the intervention was accepted, how many partners were treated. The student investigator at the project site and the medical assistant were responsible for maintaining the records of these patients.

The database tracked each patient's results at their return visit for testing at 6 weeks post treatment. At the end of the project period, all de-identified data were stored at the project site in the secure computer database.

Literature Review

A Cochrane database search resulted in an evidence-based literature review to support the QI project. The selection was difficult, given the extensive evidence-based material available. The databases searched were PubMed, CINAHL, and Cochrane. In addition, the Google Scholar search engine was used. Key search terms were sexually transmitted diseases, chlamydia, gonorrhea, partner notification, partner referral, and EPT. Eight types of study design and six levels of evidence of the project and guidelines were reviewed. Five studies were compilations of

systematic reviews of randomized control trials and were level one evidence, according to the hierarchy developed by Melnyk and Fineout-Overholt (2015). Three articles were single quantitative randomized controlled trials with level two evidence. Two studies were observational, and three were cohort studies with level four evidence. Three articles were reviews of qualitative and/or descriptive quantitative studies and had evidence level five. Six qualitative studies had level six evidence. One protocol was reviewed along with three articles that were authoritative opinions and consensus reports on the subject, with level seven evidence.

A total of 13 research articles were evaluated for the effectiveness of EPT as a treatment for partners of patients positive for GC and/or CT (Buda & Adam, 2021; Gannon-Loew et al., 2021; Garrett et al., 2017; Jamison et al., 2019; Layton et al., 2021).

Most studies found a statistically significant difference in the rates of recurrence of GC and CT when partners were treated with EPT but found that the recurrence rates were lower when EPT was used to treat partners of patients positive for GC. One study noted that EPT's costs and efficacy make it a cost-effective alternative to treat partners (Cameron et al., 2009). EPT has been found to be a most reliable option for partners who are unwilling or unable to seek treatment (Hogben, 2007).

One qualitative study regarding barriers and enablers of PDPT has largely focused on the views of healthcare providers. In that study, the researchers sought to investigate the views of young people (as potential health consumers) regarding EPT for chlamydia (Layton et al., 2021).

A pilot study was conducted to determine whether female adolescents with CT accept and deliver EPT to male sexual partners, and whether this practice is associated with decreased CT reinfection rates at 3 and 6 months. Additionally, results at 3 months revealed high rates of

reinfection, but the implications of these findings are limited by the small sample size (Vacca et al., 2019).

An anonymous cross-sectional survey was administered to a convenience sample of 312 youths 15–24 years of age presenting to a youth-focused community health center in Ajax, ON. The survey concluded that EPT acceptance over traditional treatment has more significant potential to reach youths engaging in higher-risk sexual behavior (Vandermorris et al., 2019).

A randomized control study conducted in South Africa has evaluated EPT's effectiveness in treating STI among women diagnosed with STI. A total of 267 women, with a median age of 23 years (IQR 21–27), were screened, and 63 (23.6%) were diagnosed with an STI. Of these, 62/63 (98.4%) were offered, and 54/62 (87.1%) accepted, EPT for their regular partner. Of the first 53 women completing follow-up, reinfection rates were lower among women receiving EPT than those who did not accept EPT (Garrett et al., 2017).

A prospective study was conducted from September 2016 through June 2018 with approximately 100 individuals diagnosed with CT and NG infections receiving care at the three University of Michigan clinical sites, including the Regional Alliance for Healthy Schools school-based clinics. In trials of mostly men diagnosed in public health or STI clinics with chlamydia or gonorrhea, EPT was found to be more effective in decreasing reinfection than simple patient referral (Buda & Adam, 2021).

Another study has been conducted to evaluate EPT in female adolescents by studying the acceptance and the effects on reinfection rates of sexually transmitted disease. It evaluated EPT acceptance and compared reinfection rates (positive test 1–6 months after initial infection) in the pre-EPT versus post-EPT cohorts, and EPT acceptance. The results were consistent with a

significant reduction in STI among patients who accepted and were treated with EPT (Gannon-Loew et al., 2021).

Another pilot study has been conducted to determine whether female adolescents with CT accept and deliver EPT to male sexual partners, and whether this practice is associated with decreased CT reinfection rates at 3 and 6 months. The study results have encouragingly indicated that acceptance of EPT is associated with reductions in CT reinfection at 3 months (Vacca et al., 2019).

One qualitative study exploring patients' acceptance of EPT has found that patients prefer other methods for treating partners, such as partner referral and bringing partners to the clinic for treatment (Buchsbaum et al., 2014). Two other reviewed studies indicated a 50%–55% acceptance rate among index patients for treatment of their partners (Mickiewicz et al., 2012; Vaidya et al., 2014). Patients were more likely to accept EPT for their partners if they had symptoms at the time of the initial appointment, if they had more clinic appointments, and if the medical provider was male (Vaidya et al., 2014). They were unlikely to accept EPT if their partner was in clinical settings with them that day or if their native language was not English (Vaidya et al., 2014).

Methods of Evaluation

Theory

Protection motivation theory (PMT) is used to evaluate health behavior as it relates to beliefs about a specific health threats and coping strategies pertaining to a prescribed action or treatment by a health care provider (Rogers, 1975). In a study implementing EPT in a population of mostly young men and women, PMT can explain the variations in health decisions in this population. PMT helps healthcare providers address individual fears associated with

vulnerability and susceptibility to CT. The use of PMT in this EBP project also assisted in evaluating individuals' coping processes, involving beliefs relating to EPT's efficacy, self-efficacy using EPT, and the associated costs of using EPT as a supplemental treatment for CT infection (Maddux & Rogers, 1983).

PMT encompasses two major theoretical concepts, the threat-appraisal process and the coping appraisal process, both of which are cognitive mediating processes (Rogers, 1975). The threat appraisal process evaluates maladaptive behavior as it relates to intrinsic and extrinsic rewards, a person's perception of the severity of a threat, and the perceived probability of the threat's occurrence (Rogers, 1975). The coping-appraisal process evaluates adaptive responses or one's ability to cope by addressing response efficacy, self-efficacy, and beliefs relating to the costs involved in a chosen response (Rogers, 1975). These concepts were evaluated by the student investigator to change patients' maladaptive responses to a fear or a threat into adaptive responses aimed at protection motivation (Floyd et al., 2000).

PMT is a higher-level theory in which providers use a persuasion technique to instill fear relating to a particular health threat with the intention of controlling and/or altering the response by the patient (Rogers, 1975). This middle-range theory specifically addresses health beliefs and people's actions associated with their health beliefs as well as concepts easy to operationally define (McEwen & Wills, 2014). PMT has been validated as a reliable framework for studies on reducing alcohol consumption, smoking cessation, STI prevention, and chronic diseases. It is applicable to any study on a defined health threat with an effective response or treatment that can be implemented by a person (Floyd et al., 2000).

The Plan-Do-Study-Act (PDSA) was selected as the QI model. PDSA provide four cycles for analysis or the intended change on each of the patients included in the QI project (Institute

for Healthcare Improvement, 2020). The Plan phase is the evidence-based intervention itself. The Do phase involves reviewing and agreeing on the plan of treatment with the patients, including drug education, therapeutic benefit and adverse effects, and patient responsibility to inform sexual partners and return for follow-up appointments. In the real-world data from the QI project, the Study phase of the PDSA included analysis of patients who tested positive for STI (gonorrhea and or chlamydia), discussion of treatment options, EPT, adverse effects, and retesting for the STI in 6 weeks. The data indicated the effectiveness of clinical care in the DNP cohort, through analysis of individual patient clinical characteristics, such as patient access to therapy and cost. In the Act phase, an ongoing adjustment in the real-world evidence of complete cycles provided opportunities to identify modifiable factors, such as creating a clinical protocol to support future adherence.

The Iowa Model of Evidence-Based Practice to Promote Quality Care (Melnik & Fineout-Overholt, 2015) is the model that best aligns with this project. It consists of six steps. Step one involves assessing the need for changes or any problems that trigger the need for clinical change and includes stakeholders in this step (Gawlinski & Rutledge, 2008). Step two examines the best evidence for the project, and step three involves critically analyzing that evidence. Step four is the working phase of the project, in which the design of the project is developed. Implementation of the evidence-based QI project and evaluation of the pilot study is performed in step five, and in step six, a plan for maintaining change is developed. The project was implemented on a short term period of 6 weeks, and the outcomes were favorable.

Project Design

Because this project was aimed at determining the effects of an evidence-based intervention of EPT on patient outcomes and recurrence rates in one cohort, a comparative

design was necessary. Patients who met the inclusion criteria and tested positive for STIs were offered EPT. Phone calls were made at the end of week 2 to confirm that the treatment was completed among both groups. All patients responded except for one, for whom a voicemail was left to contact the clinic. Outcome data were gathered for patients who accepted and did not accept the EPT intervention in a 6-week period. Urine was sent for nucleic acid amplification testing (NAAT). NAAT is the preferred method for detecting chlamydia and gonorrhea infections. This test detects the genetic material (DNA or RNA) of CT or gonorrhea. It can be performed on a urine sample or swab of fluid taken from a site of potential infection, such as the urethra, vagina, rectum, or eye. The NAAT tests for viable and non-viable organisms and can detect a single copy of DNA or RNA. Because this test is sensitive, less invasive methods for sample collection, such as urine samples, can be used to detect infection. This test has greater than 90% sensitivity or reliability and greater than 99% specificity or validity. The sensitivity and specificity are greater than those of other culture tests for CT. Most companies selling the test have reported no false positive results (Rapp et al., 2014).

The NAAT was performed by testing patients' urine samples. At the end of 6 weeks, patients returning for the test of cure visits had their results stored in the secure database. The rates of recurrence were calculated and compared between index patients accepting and not accepting EPT.

Analysis

The QI project implementation started on January 24, 2022. A total of 16 patients with STIs were seen at the clinic in the 5 weeks. Among them, eight were positive for chlamydia, and three were positive for gonorrhea. The remaining five were positive for syphilis or herpes. Therefore, only 11 patients who tested positive for chlamydia and gonorrhea qualified for the

study. The study phase of the PDSA QI model was used in this analysis. Each patient included in the project was educated about the benefits of EPT and how it works in detail. The patients who accepted the EPT were given materials and prescriptions for their partners in the prior 3 months for the STI, as well as reading material from the CDC website.

Internal validity was controlled for in this project by using the same test, (NAAT) on urine samples, for each patient. This test is the method of choice for measuring results for CT and is an accurate, valid test. The project population was male and female patients over 17 years of age. Because the population in the family practice clinic at the project site comprised males and females of all ages, external validity or generalizability can be assured in the findings of this project. All patients meeting the inclusion criteria were offered EPT. Those patients who accepted EPT (the test group) were compared with those who did not accept EPT (the control group) at 6 weeks for reoccurrence of infection. The comparison between the test group and the control group, although not randomly grouped, enhanced the validity and therefore the significance of the findings.

Measured Outcomes

Outcome data were gathered on patients who accepted and did not accept the EPT intervention. At the end of the 6 weeks, patients returning for test of cure visits had their results stored in the secure database, and rates of recurrence were calculated and compared between index patients accepting and those not accepting EPT. The percentage of patients accepting EPT in this pilot study was compared with the percentage of patients accepting EPT in previous studies, to determine the program's effectiveness in terms of acceptance rates by the index patients. The uptake of EPT by the infected index patients was measured, thus providing information on the recurrence rates of STIs. In addition, the study measured the rates of

recurrence of STI at 6-week follow-up visits for each patient who tested positive for infection at the initial encounter and then accepted EPT. The infection rates in patients accepting and not accepting EPT were compared at the 6-week visits. These measurements indicated the total number of reoccurrences of infection in the sub-group of patients accepting EPT compared with the sub-group not accepting EPT, thereby allowing for measurement of the intervention's effectiveness.

Outcome Data

The desired outcome from this evidence-based QI project was to reduce rates of recurrence of CT infection by initially implementing a program that has been shown in prior studies to reduce rates of recurrence. Therefore, the required initial measured outcome of importance was the uptake of that intervention. That outcome was easily measured as the number of patients seen in the clinics who tested positive and accepted the EPT intervention. The percentage of index patients accepting EPT compared with historical data indicated the possible effects of EPT on the recurrence rates.

Sixteen patients presented to the clinic for STI screening over the 2-week period. Among them, eight patients tested positive for CT, three patients tested positive for GC, and five tested positive for other STIs, such as syphilis or herpes. Those five cases were excluded from participation in the project. Of the 11 positive cases, seven patients accepted EPT, and four did not accept EPT because they indicated that they did not have any way of contacting their partners. Two of those seven patients accepted two prescriptions of EPT because they had had contact with multiple partners. The percentage of patients accepting EPT who were offered EPT by program inclusion criteria was 63%. Those index patients not accepting EPT indicated reasons for not accepting the method including "my partner knew already," "they have an

appointment for treatment already,” “they are not in contact with me anymore,” and “they want to go to their own doctor” (personal communication, February 2022).

Figure 1

Pre intervention

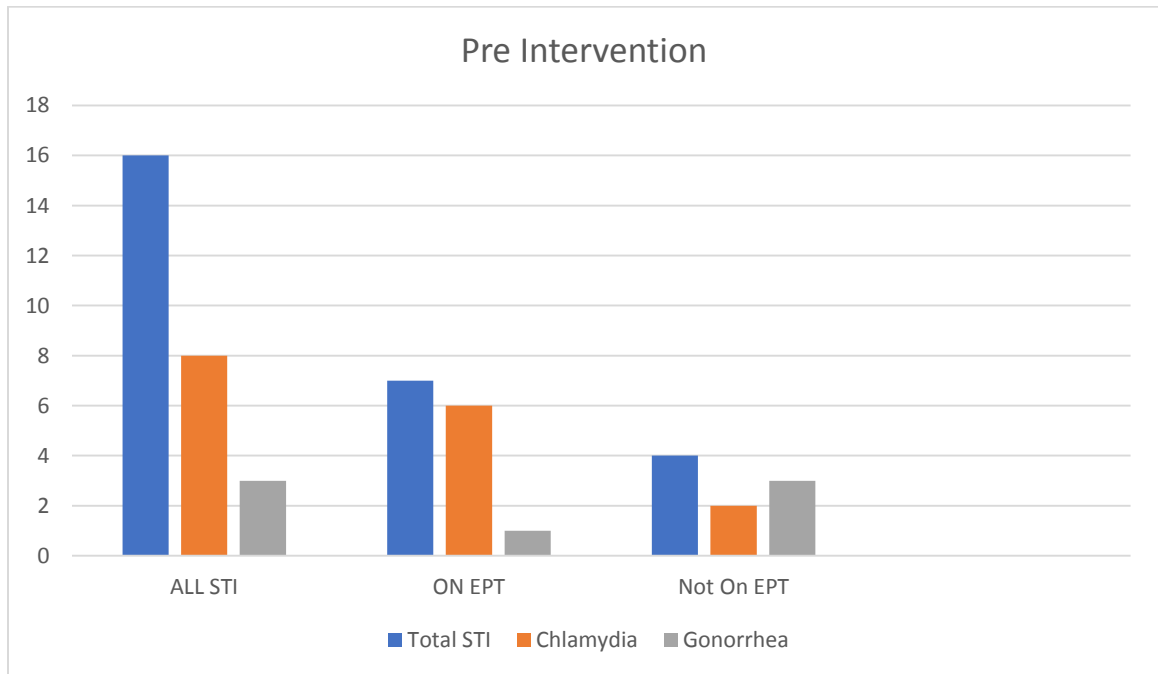
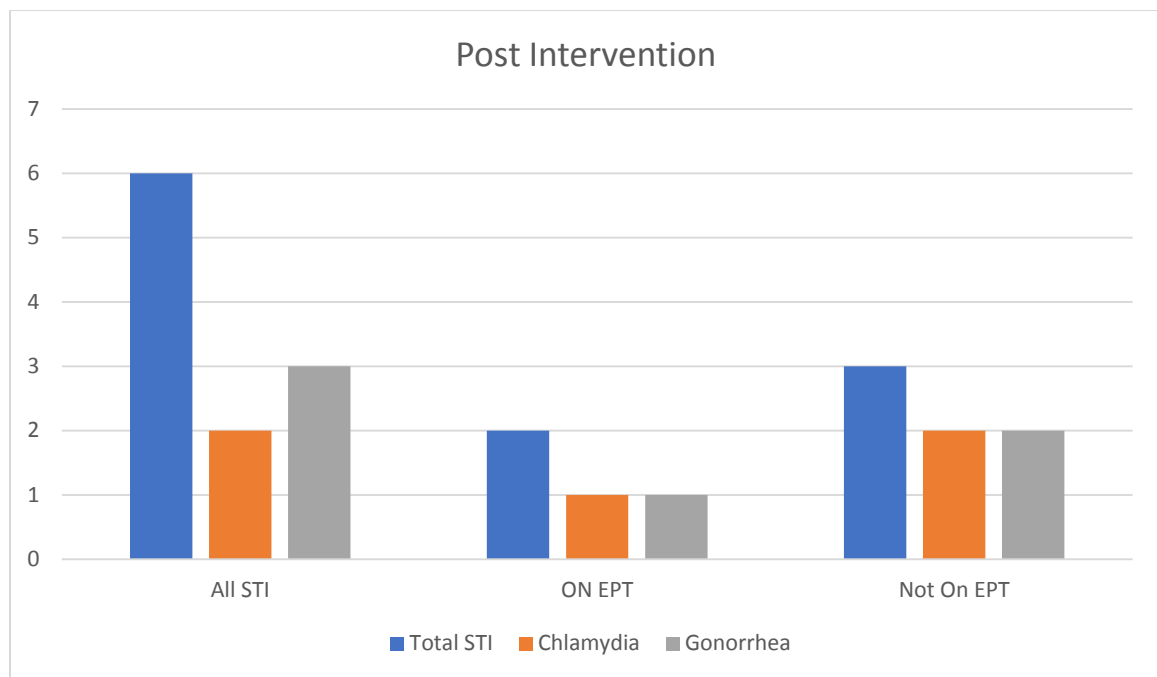


Figure 2*Post intervention***Interpretation**

At the end of 6 weeks, all eleven patients included in the study were retested during the cure visit, and four positive cases were found (two from the EPT group and two from the non-EPT group). The percentage recurrence in the population of index patients who accepted EPT (seven patients) compared with the remaining four patients who were positive for STIs and did not accept the intervention. These data are consistent with a recurrence rate of 28.6% among the group that accepted EPT and the rate of reoccurrence of STIs is higher, at 75%. However, the purpose of this project was to implement EPT as an effective treatment modality for STI treatment. The 63% acceptance rate indicated that patients are likely to accept the intervention, as compared with the acceptance rate between 50% and 55% in historical data, thus indicating that this was an effective intervention at the project site. The lower reoccurrence rate of 28.6%

supports adopting a policy at the clinic in which every patient would be offered with EPT as part of treatment for STIs, particularly chlamydia and gonorrhea.

Project Strengths

The CDC, in 2021, confirmed that EPT is effective in the effective treatment of STIs and reducing the rate of reinfection with STIs. “It is crystal clear that the people really need it,” stated one premedical student at the project site (personal communication, March 2022). Based on initial contact, the staff at the project site clearly supported offering EPT to patients positive for STIs, and they continued to advocate for the intervention after having offered it to their patients for only 6 weeks. Because the medical assistants were the initial point of contact with patients, their buy-in would be important to ensure the longevity of the program.

Because the nurses run the STI clinic by using protocols for testing and treatment, their agreeing with the need for this program and seeing the success with patients willing to be educated and to accept EPT were crucial. All employees were satisfied with the outcome of the QI project and asked questions about including GC treatment in the EPT protocol. They will be the team advocating for the continued use of this modality at the clinics with the leadership team, which has been supportive of EPT use from the onset. With measured success and support from staff, leadership should remain content with the use of EPT.

Limitations

The DNP cohort believed that the brief period time was the main limitation of this QI project. Additional limitations include the small group of patients seen during the 6 weeks, and that the EPT, an evidence-based practice treatment modality, was limited to small group of patients in a brief period. The limitations in the reliability of this EBP project are the short timeframe and small number of participants compared with those in benchmark studies.

Conclusion

Success in this evidence-based QI project was evident in the percentage of patients who accepted EPT and the low rates of recurrence after offering of EPT. Before program implementation, how receptive the index patients would be toward a new intervention for treating STI was uncertain. However, the high percentage of patients willing to try EPT, and the positive results of the intervention indicate the success of this evidence-based treatment modality at the project site. Patients were also verbally positive in their responses to the medical assistants who provided them with EPT materials (personal communication, March 2022). In addition, the provider and the staff liked being able to offer EPT to patients and were certain that they would continue offering EPT soon.

Although this was an evidence-based practice pilot project, EPT was found to be an effective method to notify and treat partners and reduce rates of recurrence, as compared with traditional partner notification methods, at IFC. In prior studies, screening and treating patients and their partners with EPT has empirically been found to save health care costs through decreased recurrence rates and sequelae of infections. EPT is therefore an efficient, effective, and patient accepted means of reducing STI recurrence rates in the local community.

Other Information

Funding

The DNP student received financial assistance from the Paso del Norte Health Foundation Graduate Fellows Program.

References

- Althaus, C. L., Turner, K. M., Mercer, C. H., Auguste, P., Roberts, T. E., Bell, G., & Low, N. (2014). Effectiveness and cost-effectiveness of traditional and new partner notification technologies for curable sexually transmitted infections: Observational study, systematic reviews and mathematical modelling. *Health Technology Assessment*, *18*(2), 1–62.
- American College of Obstetricians and Gynecologists. (2020). Committee opinion: Tracking and reminder systems. *Obstetrics & Gynecology*, *120*, 1535–1537
<https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Gynecologic-Practice/Expedited-Partner-Therapy>
- Buda, M., & Adam, P. (2021). Does expedited partner therapy for genitourinary chlamydia infections in heterosexual patients decrease recurrence rates of chlamydia? *Evidence-Based Practice*, *24*(2), 12–13. doi:10.1097/EBP.0000000000000884
- Buchsbaum, A., Gallo, M. F., Whiteman, M. K., Cwiak, C., Goedken, P., Kraft, J. M., Kottke, M. (2014). Sexually transmitted disease partner notification among African American, adolescent women. *Infectious Diseases in Obstetrics and Gynecology*, , 1-9.
- Cameron, S. T., Melvin, L., Glasier, A., Scott, G., Johnstone, A., & Young, H. (2007). Willingness of gynaecologists, doctors in family planning, GPs, practice nurses and pharmacists to adopt novel interventions for treating sexual partners of women with chlamydia. *British Journal of Obstetrics and Gynaecology*, *114*, 1516–1521.
- Cameron, S. T., Glasier, A., Scott, G., Young, H., Melvin, L., Johnstone, A., & Elton, R. (2009). Novel interventions to reduce re-infection in women with chlamydia: A randomized controlled trial. *Human Reproduction*, *24*(4), 888–895.
- Cameron, S. T., Glasier, A., Muir, A., Scott, G., Johnstone, A., Quarrell, H., odd, G. (2010).

- Expedited partner therapy for chlamydia trachomatis at the community pharmacy. *British Journal of Obstetrics and Gynaecology*, 117, 1074–1079.
- Centers for Disease Control and Prevention. (2017a). Health disparities HIV/AIDS, viral hepatitis, STDs, TB: African Americans/Blacks. <https://www.cdc.gov/nchhstp/healthdisparities/africanamericans.html>
- Centers for Disease Control and Prevention. (2017b). Sexually transmitted diseases surveillance 2016. <https://www.cdc.gov/std/stats17/default.htm>
- Centers for Disease Control and Prevention. (2018a). Expedited partner therapy in the management of sexually transmitted diseases. <https://stacks.cdc.gov/view/cdc/6804>
- Centers for Disease Control and Prevention. (2018b, September 20). Sexually transmitted diseases (STDs): Expedited partner therapy. <https://www.cdc.gov/std/ept/>
- Centers for Disease Control and Prevention. (2021). Sexually transmitted disease surveillance. <http://www.cdc.gov/std/stats14/other.htm#hpv>
- Cramer, R., Leichter, J. S., Stenger, M. R., Loosier, P. S., Slive, L., & SSuN Working Group. (2013). The legal aspects of expedited partner therapy practice: Do state laws and policies really matter. *Sexually Transmitted Diseases*, 40(8), 657–662.
- Floyd, D. L., Prentice-Dunn, S., & Rogers, R. W. (2000). A meta-analysis of research on protection motivation theory. *Journal of Applied Social Psychology*, 30(2), 407–429.
- Gannon-Loew, K. E., Holland-Hall, C., Ebersole, A. M., Alexy, E., Jackson, K. & Bonny, A. E. (2021). Expedited Partner Therapy in Female Adolescents: A Study of Acceptance and the Impact on Reinfection Rates. *Sexually Transmitted Diseases*, 48 (11), 828–833. doi:10.1097/OLQ.0000000000001436
- Garrett, Maharaj, B., Osman, F., Ngubane, N., Shozi, H., Ngomane, N., Ngobese, H., Gibbs, A., Kharsany, A., Rompalo, A., & Mindel, A. (2017). P4.115 High uptake of effective

- expedited partner therapy among young women with STI, and their partners in south Africa. *Sexually Transmitted Infections*, 93(Suppl 2), A233-A234
<https://doi.org/10.1136/sextrans-2017-053264.610>
- Gawlinski, A., & Rutledge, D. (2008). Selecting a model for evidence-based practice changes: A practical approach. *Advanced Critical Care*, 19(3), 291–300.
- Golden, M. R., Whittington, W. L., Handsfield, H. H., Hughes, J. P., Stamm, W. E., Hogben, M., Holmes, K. K. (2005). Effect of expedited treatment of sex partners on recurrent or persistent gonorrhea or chlamydial infection. *The New England Journal of Medicine*, 352(7), 676–685.
- Heijne, J. C., Althaus, C. L., Herzog, S. A., Kretzschmar, M., & Low, N. (2010). The role of reinfection and partner notification in the efficacy of chlamydia screening programs. *The Journal of Infectious Diseases*, 203, 372–377.
- Hogben, M. (2007). Partner notification for sexually transmitted diseases. *Clinical Infectious Disease*, 44, S160–174.
- Hosenfeld, C. B., Workowski, K. A., Berman, S., Zaidi, A., Dyson, J., Mosure, D., Bauer, H. M. (2009). Repeat infection with chlamydia and gonorrhea among females: A systematic review of the literature. *Sexually Transmitted Diseases*, 36(8), 478–489.
- Institute for Healthcare Improvement. (2020). Plan-do-study-act (PDSA) worksheet.
<http://www.ihl.org/resources/Pages/Tools/PlanDoStudyActWorksheet.aspx>
- Jamison, C. D., Coleman, J. S., & Mmeje, O. (2019). Improving women's health and combatting sexually transmitted infections through expedited partner therapy. *Obstetrics & Gynecology*, 133 (3), 416-422. doi:10.1097/AOG.0000000000003088
- Kissinger, P., & Hogben, M. (2011). Expedited partner treatment for sexually transmitted infections: An update. *Current Infectious Disease Reports*, 13, 188–195.

Kretzschmar, M., Satterwhite, C., Leichter, J., & Berman, S. (2012). Effects of screening and partner notification on chlamydia positivity in the United States: A modeling study.

Sexually Transmitted Diseases, 39(5), 325–331.

Layton, E., Goller, J. L., Coombe, J., Temple-Smith, M., Tomnay, J., Vaisey, A., & Hocking, J.

S. (2021). “It's literally giving them a solution in their hands:” The views of young Australians towards patient-delivered partner therapy for treating chlamydia. *Sexually transmitted infections, 97*(4), 256–260. <https://doi.org/10.1136/sextrans-2020-054820>

Maddux, J. E., & Rogers, R. W. (1983). Protection motivation and self-efficacy: A revised theory of fear appeals and attitude change. *Journal of Experimental Social Psychology, 19*, 469-479.

Melnyk, B. M., & Fineout-Overholt, E. (2015). *Evidence-based practice in nursing & healthcare* (3rd ed.). Wolters Kluwer Health/Lippincott Williams & Wilkins.

Mickiewicz, T., Al-Tayyib, A., Thrun, M., & Rietmeijer, C. (2012). Implementation and effectiveness of an expedited partner therapy program in an urban clinic. *Sexually Transmitted Diseases, 39*(12), 923–929.

Rapp, J. R., Shachter, J., Gaydos, C. A., & Van De Pol, C. (2014). Recommendations for laboratory-based detection of *Chlamydia trachomatis* and *Neisseria gonorrhoeae*. *MMWR Recommendations and Reports, 60*(0), 1–19.

Rogers, R. W. (1975). A protection motivation theory of fear appeals and attitude change. *Journal of Psychology, 91*, 93–114.

Texas Department of State Health Services. (2022). Expedited partner therapy.

<https://www.dshs.state.tx.us/hivstd/ept/default.shtm>

Vacca, S. H., Salsgiver, E. L., Gold, M. A., & Neu, N. (2019). Patient-delivered expedited partner therapy for chlamydia trachomatis infection among female adolescents using

school-based health centers. *Journal of Pediatric Health Care: Official Publication of National Association of Pediatric Nurse Associates & Practitioners*, 33(3), e18–e24.
<https://doi.org/10.1016/j.pedhc.2018.11.008>

Vaidya, S., Johnson, K., Rogers, M., Nash, D., & Schillinger, J. A. (2014). Predictors of index patient acceptance of expedited partner therapy for chlamydia trachomatis infection and reasons for refusal: Sexually transmitted disease clinics, New York City, 2011 to 2012. *Sexually Transmitted Diseases*, 41(11), 690-694.

Vandermorris, A., Kerr, L., & Kives, S. (2019). Receptiveness to Patient-Delivered Partner Therapy (PDPT) for Chlamydia Infection: Exploratory Findings From a Sample of Canadian Youth. *Journal of obstetrics and gynaecology Canada : JOGC = Journal d'obstetrique et gynecologie du Canada : JOGC*, 41(4), 473–478.
<https://doi.org/10.1016/j.jogc.2018.03.131>

