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Increasing Knowledge and Awareness of Expedited Partner Therapy among Providers

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Abstract

Background: In the past six years, there has been a steady rise in the number of reported cases of chlamydia and gonorrhea in the United States. Expedited partner therapy (EPT) refers to the practice of treating partners of patients diagnosed with specific treatable sexually transmitted infections without first evaluating them. This treatment was recommended by the Centers for Disease Control and Prevention in 2006 and it is currently legalized in 45 states and the District of Columbia. However, many health care providers (HCPs) do not have knowledge of EPT therefore do not make use of it.

Purpose: This quality improvement (QI) project provided education on expedited partner therapy to providers at a community health center in Maryland. The goal was to increase awareness and knowledge of expedited partner therapy, and the intention to utilize EPT to improve its use.

Methods: Recruitment of the participants involved providing an overview of the project during staff meetings followed by sending emails to the clinicians. Pre and post intervention surveys were sent to clinicians via SurveyMonkey for data collection. The education intervention was through PowerPoint.

Results: Using the Wilcoxon signed rank test, the intervention resulted in statistically significant results when current EPT use was compared to future plan to use EPT. Results for most of the other variables were not statistically significant.

Conclusion: Increase knowledge and awareness of EPT can result in improved use. However, the outcome for most variables were not statistically significant, but future projects or studies could use larger samples to determine significance of the other variables.

Keywords: Expedited partner therapy, sexually transmitted infections, chlamydia, treatment

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Introduction

Expedited partner therapy (EPT) is the practice of treating partners of patients diagnosed with sexually transmitted infections (STIs) without first evaluating them (Centers for Disease Control and Prevention [CDC], 2020). In 2006, EPT was recommended by the CDC for the management of some treatable STIs (gonorrhea and chlamydia) in the United States (CDC, 2020). Currently, EPT is permissible in 45 states, the District of Columbia, and the Commonwealth of the Northern Mariana Islands (CDC, 2020). While EPT is potentially allowable in four states as well as Puerto Rico and Guam, it is prohibited in South Carolina (CDC, 2020). Due to lack of knowledge of EPT, it is still underutilized by many health care providers (HCPs) who manage STIs despite legalization in most states.

Background

There has been a steady increase in the number of reported cases of STIs in the United States. The CDC (2019) reported that in 2018, there were 1.8 million reported cases of chlamydia, a 19% rate increase since 2014: and 583,405 reported cases of gonorrhea, a 63% rate increase since 2014. In 2018, Maryland reported 35,482 reported cases of chlamydia, a 28% overall rate increase between 2014 and 2018 and 10,305 reported cases of gonorrhea, a 66% increase in the same time period (Maryland Department of Health [MDH], 2019). About 10-15% of women with untreated chlamydia will develop pelvic inflammatory disease which can lead to infertility (CDC, 2019). Therefore, the rise in STI cases both at the national and at the state level needs to be addressed. One option to address the STI burden is through creating awareness and increasing knowledge of EPT among providers and consequently increase EPT use.

Expedited partner therapy (EPT) use was recommended by the CDC more than a decade ago, therefore, there should be more widespread EPT use compared to what is reflected in practice (CDC, 2020). In Maryland, clinicians including licensed physicians, advanced practice nurses (APNs), physician assistants (PAs), and registered nurses (RNs) in local health departments are allowed to prescribe EPT (MDH, 2019). A quality improvement (QI) project was carried out at a federally qualified health center (FQHC) in Maryland to increase EPT awareness and knowledge among HCPs. The desired result of this DNP project is an increase in knowledge and intention to utilize EPT among clinicians at the FQHC.

Problem Statement

The risk of sexually transmitted infections (STIs) in Maryland is indicated by high rates of treatable STIs, mainly chlamydia and gonorrhea. This is partially due to a lack of knowledge of EPT which leads to suboptimal utilization of EPT among HCPs despite the legalization of EPT in 45 states and the District of Columbia (CDC, 2020). Lack of EPT knowledge applies to many settings including the community health clinics in Maryland.

Organizational "Gap" Analysis of Project Site

The project was carried out at a community health clinic in Maryland. Informal interaction with the providers at one of the health clinics prior to project implementation revealed that most of the clinicians do not utilize EPT for patients diagnosed with chlamydia. The clinic has nurse practitioners as well as physicians in different specialties including obstetrics/gynecology (Ob/gyn), internal medicine (IM), and family practice (FP). An assessment conducted in one of the FQHC locations before implementing the project indicated that, although 62.5% of the providers in that location were aware of EPT, only 25% of the providers prescribe EPT. Further investigation of the organization policies revealed that there is no written policy on

EPT. The analysis identified a gap in knowledge and policy formulation for EPT use. In addition, there were gaps in providers' knowledge of EPT, the legal aspects of EPT, and dispensing procedures for EPT. Leichliter et al. (2016), emphasized that policies in public health have the potential to create a positive influence in many individuals' lives at a relatively low cost. This QI project was carried out to address the gaps in knowledge of EPT.

Review of Literature

For the literature search, two main databases PubMed and the Cumulative Index of Nursing and Allied Health Literature (CINAHL) were utilized. The search terms used in the literature were "expedited partner therapy", "sexually transmitted infections", "chlamydia treatment". The initial search in CINAHL yielded 102 results, this was narrowed down with the inclusion criteria of publication date between 2015 and 2020, peer-reviewed articles, full text only, English only, adults only. The exclusion criteria were meta-analysis, editorials, and articles published before 2015. The final search yielded 10 articles, from which three articles were manually selected. Two of the articles were randomized controlled trials (RCTs) and the third one was an expert opinion report. The Johns Hopkins Nursing Evidence-based Practice guide was used to select relevant articles based on the level of evidence and quality. The RCTs were level II evidence, one was grade A because the study was large scale and the results can be generalized, and the other was grade C because more research was needed to determine effectiveness. The other one was level IV evidence, grade B because it was based on expert opinion report.

The PubMed database was accessed with the same search terms used, "expedited partner therapy", "sexually transmitted infections", and "chlamydia treatment". The inclusion criteria were, publication date between 2015 and 2020, peer-reviewed articles, full text only, English

only, adults only. The exclusion criteria used was similar to the one for CINAHL in that meta-analysis, editorials, and articles published before 2015 were eliminated. The search initially yielded 24 articles, but it was narrowed down by using the term “chlamydia” and eliminating the word “treatment” from the search terms which yielded 15 articles. A manual selection was done to obtain seven articles based on the Johns Hopkins Nursing Evidence-based Practice guide for level of evidence and quality. One of the articles was an RCT, level II evidence, grade A. The other six were level III evidence, grade B or C because five of them were descriptive studies and one was a mixed method study. Based on the level of evidence, a total of ten peer reviewed publications were selected for the basis of this literature review. The information obtained is substantial to make conclusions about EPT. The report from the literature search is grouped into two different sections: facilitators and barriers of EPT use.

Facilitators for EPT

A public health program that made free patient delivered partner therapy (PDPT) or free clinic stocks of EPT could increase awareness of EPT among providers, its distribution, and use (Golden et al., 2015; Oliver et al., 2016). This conclusion was made from two different RCTs carried out in Washington State and New York City (Golden et al., 2015; Oliver et al., 2016). The researchers also found that such programs are sustainable and could be applied to local health departments in other states (Golden et al., 2015; Oliver et al., 2016).

State legislation and explicit institutional policies and guidelines regarding EPT can promote knowledge and awareness of EPT and subsequent use among clinicians (Pfennig, 2019; Rosenfeld et al., 2016). This was determined through an online survey on HCPs and from an expert opinion report (Pfennig, 2019; Rosenfeld et al., 2016). Since EPT is legal in most states

and permissible in many, health institutions should have clear policies regarding EPT to promote its use among clinicians.

Current CDC guidelines recommend EPT use for heterosexual women and men and not for men who have sex with men (MSM) to treat gonorrhea and chlamydia (CDC, 2019). However, EPT can be used among gay, bisexual, men who have sex with men (GBMSM) as a prevention strategy as well as to decrease the rate of STIs among these populations (Clark et al., 2017; Gamarel et al., 2019). These results were obtained from an RCT in Peru and a descriptive study that used a small convenience sample. A mixed method study from the Netherlands found other facilitators for increasing knowledge of EPT and its use include, providing home-based test kits, enabling providers to contact the patient by phone, allocating more time to providers for counseling, and providing more training to providers (Nanhoe et al., 2018).

Barriers to EPT Use

Lack of knowledge and awareness among pharmacists and pharmacy staff was the main barrier to EPT use (Borchardt et al., 2018; Qin et al., 2018). This was determined through a cross-sectional study in Milwaukee (Borchardt et al., 2018) and a descriptive study that was done in Baltimore, Maryland (Qin et al., 2018). Researchers found that 58% of the nameless EPT prescriptions were refused by pharmacies because of a lack of awareness of EPT (Borchardt et al., 2018). Increasing awareness among pharmacists and pharmacy staff can promote EPT use (Borchardt et al., 2018; Qin et al., 2018).

Structural concerns (insurance and transportation) or limited accessibility to pharmacies, and differences in medication prices limit the use of EPT (Garamel et al., 2019; Qin et al., 2018). These concerns among patients need to be addressed in order to increase EPT utilization. A

public health EPT program which makes EPT accessible to HCPs can address this barrier as well (Golden et al., 2015; Oliver et al., 2016).

Barriers such as prescriber's legal responsibility, potential medication side effects, and barriers to privacy also hinder EPT use (Garamel et al., 2019; Wood et al., 2018). These results are based on descriptive studies that were carried out in the United States and Australia (Garamel et al., 2019; Nanhoe et al., 2018; Wood et al., 2018). According to Nanhoe et al. (2018), allocating more time for HCP counseling, enabling HCPs to communicate with the patient's partner by phone, and educating HCPs on the legal aspects of EPT will address this barrier.

Another barrier is the lack of legislation regarding EPT, this is evidenced by lack of clear policies on EPT in the Department of Defense (DoD) and the emergency department (ED) (Pfennig, 2019; Stidham et al., 2015). The clinicians who practice in these settings are not able to utilize EPT (Pfennig, 2019; Stidham et al., 2015). Therefore, clear organizational policies will enable the clinicians to utilize EPT as an additional measure to curb increasing STI rates.

Study limitations

There are some limitations in several of the studies. Borchardt et al. (2018) noted that the customers requested to speak directly with the pharmacist, and this excludes the pharmacy technician. The implication is that the refusal rate for EPT prescriptions could be higher since pharmacy technicians may have less knowledge of EPT when compared to pharmacists (Borchardt et al., 2018). Nanhoe et al. (2018) noted a limitation whereby all the participants had special interest in STIs; therefore, their responses could have been biased toward the subject. However, this can also be seen as a strength because the participants have expertise in legislation, policies, and treatment of STIs (Nanhoe et al., 2018). It was also noted that recall bias could influence the self-reported information by supervising pharmacists or the pharmacist

on staff in the study on pharmacy level barriers that was done in Baltimore, Maryland (Qin et al., 2018). Finally, results from this study cannot be generalizable to an area with lower STI burden (Qin et al., 2018).

Summary

The rates of treatable STIs in the United States continue to rise despite the fact that EPT has been established as an option to treat partners and prevent reinfection from STIs (CDC, 2019). Based on the review of the literature, some of the facilitators for EPT use include a public health program that provides free EPT which is accessible to HCPs (Golden et al., 2015; Oliver et al., 2016), state legislation and clear organizational policies (Rosenfeld et al., 2016), and allocating time for providers to do counseling (Nanhoe et al., 2018). The main barriers for EPT use are lack of knowledge and awareness of EPT guidelines among clinicians, pharmacists and pharmacy staff (Borchardt et al., 2018; Qin et al., 2018) and lack of explicit organizational policies on EPT (Pfennig, 2019; Stidham et al., 2015). Taking advantage of the facilitators and overcoming these barriers will increase awareness of EPT enhance its utilization.

Evidence-based Practice

The literature review revealed that expedited partner therapy is not widely used due to lack of knowledge and awareness of the various aspects of EPT. Therefore, through the quality improvement (QI) project, the Doctor of Nursing Practice (DNP) student aimed to address the gap in knowledge and practice by implementing an education intervention among clinicians to increase awareness of EPT. The educational intervention addressed the general knowledge of EPT, the legal aspects, institutional policies, prescription procedures, pharmacy concerns, and patient counseling.

Theoretical Framework

Roger's Diffusion of Innovation Theory emphasizes that an idea diffuses through a specific population and in the end, it is adopted resulting in a change in behavior (LaMorte, 2019). According to the theory, LaMorte (2019) demonstrates that very few people are innovators, about one quarter of the population are early adopters, majority of the adopters lie in the middle of the curve, and about one quarter of the group are usually laggards. This is depicted in the diagram in Appendix A. The innovators are the first to try anything new and they are ready to take risks; early adopters enjoy leadership roles, they are aware of the need for change and have no problem trying new ideas (LaMorte, 2019). The early majority are rarely leaders, they usually need to see evidence that something works before they can try it while the late majority are skeptical and will only adopt an idea after it has been adopted by the majority (LaMorte, 2019). Laggards are very conservative and very skeptical and sometimes it may take pressure from other adopters for them to agree with the new idea (LaMorte, 2019).

According to LaMorte (2019), factors that will affect the process of adopting a new idea include relative advantage (is it better than the current idea?), compatibility (is it consistent with current values?), complexity (how easily it can be adopted), trialability (can it be tested before committing to adopt?), and observability (can the results be measured?). EPT measures up to these factors and can be easily adopted because, it is an additional resource to STI management; it is compatible with the values of STI treatment; it is not complex to adopt; it can be tried by a few HCPs before being adopted by the rest of the team; and the results can be measured by the number of clinicians who embrace the practice in the clinic. Based on Roger's theory of Diffusion of Innovation, increasing awareness of EPT among clinicians in a community health clinic will lead to a few adopting the idea initially, but over time majority will adopt it resulting

in comprehensive EPT knowledge and use within the health center. Eventually, the idea can be adopted by other clinics and health care centers.

Methods

Online pre/post-surveys were the main tools for collecting data for the QI project. The education intervention was in the form of PowerPoint presentation on EPT. The main method of data collection was quantitative. There was a general comments section at the end of the post-survey which would generate qualitative data.

Goals, objectives, and outcomes

The goal of the DNP project was to increase knowledge and awareness and create a change in attitude regarding EPT among providers. To achieve the goal, an evidence-based educational quality improvement project on EPT was implemented and evaluated among providers. This included an online pre/post intervention survey which is available in Appendix C. Also, an education intervention in form of a PowerPoint presentation was provided so that the HCPs were able to access it at their own convenient time. The link for the PowerPoint is attached in Appendix D. The objectives and expected outcomes are outlined in the table below.

Objective	***Expected Outcome***
-A 10-minute online pre-survey would be made available for clinicians during the months of February 2021	-At least 85% of the clinicians would complete the online survey
- 15-minute educational presentations in form of PowerPoint would be made available online during the months of February 2021 for clinicians to access and review at their own convenience	- At least 85% of the clinicians would access and review the PowerPoint presentations on EPT
-A 10-minute online survey would be made available to clinicians during the months of February to March 2021	-At least 85% of the clinicians would complete the post-intervention survey

Project Site and Population

The project was implemented at a federally qualified health center (FQHC) in the Northeast. The health centers provide primary care services including preventive services and management of chronic conditions; women health services; mental health services which include substance use disorders, and urgent care services to underserved communities in the area. These communities have limited access to preventive health services and the residents tend to have higher rates of many chronic medical conditions and STIs.

The QI project targeted clinicians from different areas of specialization including family practice (FP), internal medicine (IM), obstetrics/gynecology (Ob/Gyn), and pediatrics. Physicians, nurse practitioners, and physician assistants were involved in the project. The expected outcome was increase in knowledge and awareness of EPT among clinicians.

Measurement Instruments

In order to measure the outcomes of the QI project, an online survey was administered via SurveyMonkey. The survey was formulated to collect information on the clinician's demographics, knowledge of EPT, utilization of EPT, barriers, and facilitators for EPT use. The survey was adopted from an established tool that was previously used in a qualitative study in Pittsburgh, Pennsylvania (PA) to determine the perspectives of HCPs on EPT for chlamydia (Rosenfeld et al., 2016).

Prior to using the survey in the study in Pittsburgh, it was reviewed by two experts in STI testing and five public health researchers, in addition, the survey was piloted on two HCPs to assess its clarity (Rosenfeld et al., 2016). The tool has a high sensitivity rate because the surveyor can use it to successfully determine the knowledge, use, barriers, and facilitators for EPT use among clinicians. In addition, the tool has a favorable specificity rate because it can also

clearly identify the clinicians with limited knowledge and use of EPT. Therefore, this tool is considered valid. Permission to use the survey tool for this QI project was obtained through an online request (Appendix B).

Implementation Plan/Procedure

Participants were informed of the intended project during a staff meeting and an email was sent to the potential participants. A pre-intervention online survey was distributed via SurveyMonkey to the clinicians, and it was available for a period of one month. The education intervention was made available one week after completing the presurvey and was accessible for review over one month. A post-intervention online survey was sent via SurveyMonkey two weeks after the pre-survey, and it was available for period of four weeks.

Knowledge of EPT was assessed using True/False/I don't know statements. Most of the other responses were on a five-point Likert scale with the following items: strongly agree, agree, neutral, disagree, and strongly disagree. Baseline information on knowledge and utilization of EPT was collected before the intervention and this was available for four weeks with a weekly automated reminder sent out for those who hadn't completed it. The PowerPoint presentation, located in Appendix D, was made available one week after the pre-survey was sent out. The PowerPoint presentation was available for four weeks for review by HCPs. Thereafter, at four weeks post-intervention, the survey was available via SurveyMonkey to be completed by the HCPs to determine the effectiveness of the intervention (Appendix C).

Data Collection Procedures

An online survey was administered to HCPs at two locations of a federally qualified health center (FQHC) in Maryland. The DNP student used SurveyMonkey to administer the survey that collected data on demographics, knowledge of EPT, barriers, facilitators, and EPT

use. The post-survey that was used can be located under Appendix C. An interactive presentation was not possible as previously intended and planned due to conflicting schedules and many competing priorities resulting from the current COVID 19 pandemic.

Data Analysis

The IBM Statistical Package for the Social Sciences (SPSS) software version 27.0 was used for data analysis. This software has been used and proven effective in analyzing trends and determining conclusions in various projects and research studies (Gardner, 2020). Wilcoxon signed-rank test, a non-parametric statistic, was used to compare responses to the pre/post survey and to determine relationships. Descriptive statistics were used to compute frequencies.

Cost-Benefit Analysis

Majority of the cost for this project was in the form of time (donated time) spent by the DNP student on the pre/post-intervention surveys, creating a PowerPoint presentation on EPT for clinicians, and collecting and analyzing the data. The time was in form of donated time since it was part of the coursework for the DNP student. There was no monetary cost incurred since everything was online. A detailed table of the cost-benefit analysis can be located at Appendix E. The benefits of the QI project include an increased knowledge and awareness of EPT among clinicians at the community health clinic, and consequently improvement in EPT use in the future to address STI management.

Ethical considerations and Protection of Human Subjects

The project was approved by the leadership at the site on 10/9/2020 but the letter of support was issued two months later, the late approval was due to the current pandemic and new projects being placed on hold. The University of Massachusetts, Amherst, Internal Review Board (UMass IRB) approval was obtained prior to initiating the DNP project (Appendix F). A delay in

obtaining a letter of approval resulted in a delay in the project implementation. The project involved clinicians who completed online surveys regarding EPT. They also participated in the PowerPoint presentation. Prior to conducting the surveys, consent (Appendix G) was obtained from the clinicians and this was included at the beginning of the survey. The consent also provided detailed instructions of what the survey involved.

There were no risks associated with participation in the QI project, and the responses to the survey were made anonymous to maintain the confidentiality of the clinicians. This is in accordance with HIPAA rules of privacy and confidentiality. The DNP student was in charge of the storage, retrieval and safeguarding of all data and survey responses for the project. Information was coded using random individual identification numbers to maintain anonymity. The report from the QI project was kept in online electronic files which were accessible by a password and there was no individual identifiable information. During analysis, the data obtained from the survey responses was coded using random individual identification numbers to maintain anonymity.

Results

The purpose of the project was to increase knowledge and awareness of expedited partner therapy among providers. The project was carried out at two locations of a FQHC in Maryland. Twelve clinicians participated in the pre-survey and seven in the post-survey. The participation goal was 85% which translates to 15 out of the target of 20 participants, but in this project, 60% (12 out of 20) participated in the presurvey and only 35% (7 out of 20) participated in the post-survey. The project involved a pre-survey, education intervention, and post survey. The clinicians had varying years of experience from less than five to more than 20 years of practice, they were from different specialties, and majority of them were female.

Results based on frequency distribution indicate that all the participants agreed that concern about medication allergies was the main barrier for EPT use. Also, 58% of the presurvey and 71% postsurvey participants agree that liability was another barrier, and this is closely related to medication allergies. Surprisingly, 42% of the participants for both pre/post survey viewed time constraint as a barrier for EPT use and the rest were either neutral on the issue or disagreed with it. In regard to the facilitators for EPT use, 58% of the presurvey and 71% of the postsurvey participants agreed that institutional guidelines on EPT use were important. However, 92% of the presurvey and 85% of the postsurvey participants agreed that EPT training was important. It was unexpected that only 42% of participants viewed time constraints to be a barrier. These results can be located in Appendix H (Tables 3-12).

Using the Wilcoxon signed-rank test, the intervention resulted in statistically significant results when current EPT use was compared to future plan to use EPT. However, the intervention did not create statistically significant results when comparing the pre and post intervention results for most of the other variables related to knowledge of EPT such as legal status, prescription requirements, and billing for EPT. These results are shown in the table below.

Table 1: Comparison of knowledge variables pre/post

NPAR TESTS

/WILCOXON=pre1 pre2 pre4 pre5 pre14 WITH post1 post2 post4 post5 post14 (PAIRED)

/STATISTICS DESCRIPTIVES /MISSING ANALYSIS.

Test Statistics[a]

	EPT is legal in 45 states & DC (Pre/Post)	EPT is Legal in MD (Pre/Post)	"EPT" is Sufficient on Rx (Pre/Post)	Pt's Insurance can be Billed for EPT (Pre/Post)	Current EPT Use (Pre) – I plan to use EPT (Post)
Z	-1.732[b]	-1.000[b]	-1.000[b]	-1.518[b]	-2.032[b]
Asymp. Sig. (2-tailed)	.083	.317	.317	.129	.042

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

The Wilcoxon signed-rank test result was (p = 0.042, Z= -2.032) with a confidence interval (CI) of 95%, these results are statistically significant, meaning there was a change in attitude toward EPT use as a result of the education intervention.

Based on the statistical analysis using Wilcoxon signed-rank test, the variables that represent facilitators and barriers in Table 2 below did not have significant results when a comparison was done before and after the intervention.

Table 2: Comparison of variables related to facilitators and barriers pre/post

NPAR TESTS /WILCOXON=pre8 pre9 pre10 pre11 pre12 WITH post8 post9 post10 post11 post12 (PAIRED)

/STATISTICS DESCRIPTIVES QUARTILES /MISSING ANALYSIS.

Test Statistics[a]

EPT is legal in MD	EPT is legal in 45 states and DC		Organizational Guidelines are Important (Pre/Post)	Training on EPT use (Pre/Post)	Time constraint is a Hindrance (Pre/Post)	Liability is a Concern (Pre/Post)	Medication Allergies are a Concern (Pre/Post)
True	False/I don't know	Z	.000[c]	.000[c]	-1.000[b]	.000[c]	.000[c]
		Asymp. Sig. (2-tailed)	1.000	1.000	.317	1.000	1.000
	True	Z	-1.414[b]	.000[c]	-.447[d]	-1.414[d]	-1.414[d]
		Asymp. Sig. (2-tailed)	.157	1.000	.655	.157	.157

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

c. The sum of negative ranks equals the sum of positive ranks.

d. Based on positive ranks.

The above results indicate that the clinicians' views towards the facilitators and barriers for EPT use preintervention compared to post-intervention do not have much impact on the use of EPT.

Discussion

The results from the project strongly imply that an increase in knowledge and awareness of EPT among providers will result in increased use of EPT. This is supported by the outcome of the project which indicate that the education intervention resulted in a change in attitude toward EPT use. Using the Wilcoxon signed rank test for statistical analysis the results were (p = 0.042), which can be interpreted that as a result of the project, more clinicians planned to use EPT. Therefore, the results from the project confirm the literature findings which concluded that increase in knowledge and awareness of EPT is one way to improve its use.

In relation to Roger's Diffusion of Innovation Theory, there were a few innovators who were already using EPT before the project was initiated. When the other clinicians learned about it, they got interested in the idea of EPT use and by the end of the brief project, more clinicians became adopters. Early and late majority clinicians who were hesitant and only committed to

rarely use EPT due to other influencing factors such as liability. However, as EPT use becomes widespread in the entire organization, it is predicted that they will adopt the practice. Laggards are the clinicians who will be last to adopt the new practice when it becomes common practice in the organization.

Barriers and facilitators that may influence EPT use need to be controlled even though the results for these variables were not statistically significant in this project. The outcome was not significant likely because the sample was small. The facilitators for EPT use such as having clear institutional guidelines and training on its use should be addressed. Training will provide a common and clear understanding on how to prescribe and dispense EPT, and clear policy and guidelines will address any liability concerns that may arise. The three main barriers for EPT use include a concern about medication allergies and possible interactions, liability associated with treating a patient who is not known to the provider, and time constraints.

The concern about medication allergies implies that it is challenging for a clinician to prescribe medications to a patient when the allergies are unknown or the interaction that may occur with that patient's current medications. Liability was the other barrier which is closely related to the medication allergies and refers to the provider not knowing the recipient's medical history, current medications, and medication allergies. Therefore, in case of any allergic reaction, the provider may be liable because of providing a prescription without adequate assessment. Time constraints play a role because additional time not allocated in the clinician's schedule may be needed to prescribe and provide any necessary education materials for partner review.

Project Limitations

The competing priorities and time constraints which have been heightened by the pandemic were evident during project implementation, and this led to the low number of

participants for the project. Also, the planned interactive education intervention was not possible due to conflicts in clinician schedules and various competing priorities stated earlier. These may have impacted the results for most variables that may influence EPT use not being statistically significant, the small sample size may have affected the results of the project as well. Despite the limitations, a facilitator for the project was the fact that EPT was not a totally new idea and some of the clinicians were using it in their current practice. Therefore, future studies can use a more interactive intervention and a larger sample to determine if the results will be of statistical significance.

Conclusion

In summary, the project showed that increased knowledge and awareness of EPT among HCPs will result in improved use of EPT for better management of STIs. In addition to increasing awareness and knowledge of EPT, the following factors need to be addressed, having clear organizational policies on EPT, addressing the barriers such as liability, medication allergy concerns, and time constraints for clinicians. Despite the unforeseen and unexpected challenges, it is clear that increasing knowledge and awareness on EPT can result in enhanced EPT use among clinicians. Although the results from this project cannot be generalized to other settings, they can serve as a foundation or starting point for future studies. Furthermore, I would recommend that future studies include larger sample sizes and improve on the techniques of presenting the intervention to the providers. These may help to affirm current findings or prove otherwise and also to determine the significance of the other factors.

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Appendix A: **Theoretical Framework**

Diffusion of Innovation Theory

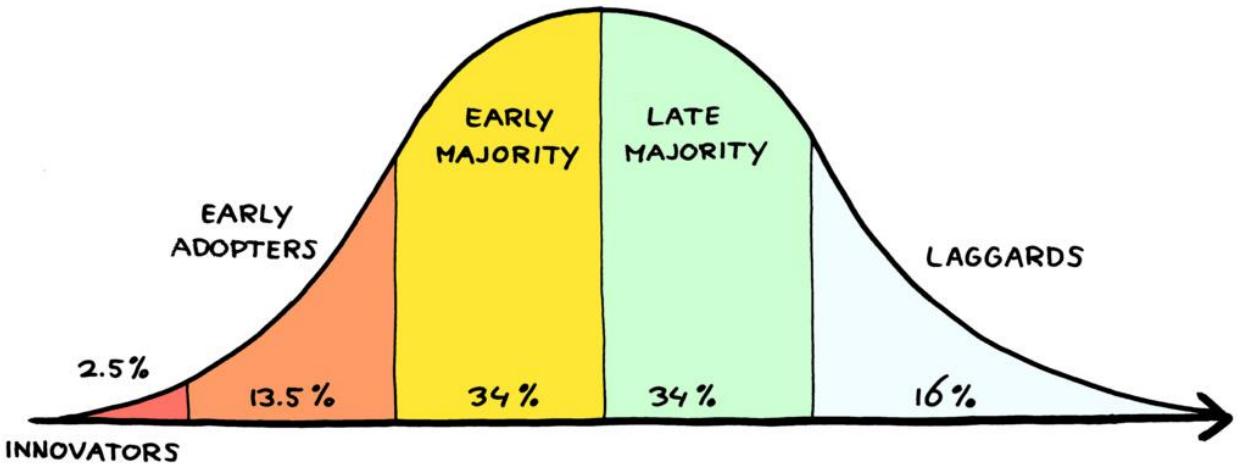

Image by Jurgen Appelo, Flickr, downloaded 12/5/2016, https://flic.kr/p/8VBTUM

Appendix B: Permission for Survey

The link to the permission obtained to use the survey tool which is included in the article.

file:///Users/angelinemotari/Desktop/Rightslink® by Copyright Clearance Center.webarchive

Appendix C: **Measurement**

Pre/post-intervention Survey

Part 1: Demographics

Demographics	Response
Age in years <30 30-49 50+	
Gender: Male Female	
Specialty: Family Practice Internal Medicine Obstetrics/Gynecology Pediatrics	
Average number of patients per week 1-10 11-20 20+	
Years in practice <5 5-10 10-15 15+	

Part 2: Expedited Partner Therapy Pre/Posttest

1. Expedited partner therapy (EPT) is legal in 45 states and the District of Columbia. **True or False or I don't know**
2. Expedited partner therapy was recommended by the Centers for Disease Control and Prevention (CDC) in 2010. **True or False or I don't know**
3. Expedited partner therapy is legal in Maryland. **True or False or I don't know**
4. My clinic has a policy on EPT. **True or False or I don't know**
5. The following describes the eligibility criteria for Expedited partner therapy. **Select ALL that apply**
    a. Sex partners within the past 60 days prior to diagnosis
    b. Pregnant women
    c. Only one partner is eligible
    d. No limit to the number of partners
6. If the partner's name is unknown, "EPT" is sufficient on the prescription. **True or False or I don't know**
7. The patient's insurance can be billed for Expedited partner therapy. **True or False or I don't know**
8. "EPT" or "Expedited Partner Therapy" must be included in the prescription. **True or False or I don't know**

The following statements are meant to assess barriers and facilitators for expedited partner therapy using a Likert scale of 1-5 with 1= strongly disagree and 5 = strongly agree

9. Prescribing treatment for Sexually Transmitted Infections for a sexual partner(s) who is not your patient(s). **1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree**
10. Knowledge about institutional guidelines is important in EPT use. **1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree**
11. Training on how to provide EPT is an important factor. **1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree**
12. Time constraint is a factor in deciding whether or not to use EPT. **1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree**
13. Knowledge about intimate partner violence is important when deciding whether or not to prescribe EPT. **1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree**
14. Liability is a concern when you plan to use EPT. **1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree**
15. Medication allergies are a concern when prescribing EPT. **1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree**

This last question assesses the likelihood of expedited partner therapy use on a Likert scale of 1-5 with 1= Never and 5 = Always

16. On a scale of 1-5 how likely are you to use EPT? **1. Never 2. Rarely 3. Sometimes 4. Often 5. Always**

Appendix D: **Education Intervention**

PowerPoint (PP) presentation can be found in the links below

https://umass-my.sharepoint.com/:p:/g/personal/amotari_umass_edu/EdIxFpqhU0REmuwWCGomEJIBUW1d1NP4Zuf3Thte9R1y5g?e=kKBMQh

Appendix E**: Cost-Benefit Analysis**

Estimated cost of the QI project will be in form of donated time provided in kind by the DNP student:

Compiling the online survey: 4 hours x $ 60 / hour = $240

Development of a PowerPoint presentation: 4 hours x $ 60 / hour = $240

Data collection: (20hrs/month x1 month) = 20 hours x $ 60 / hour = $1200

Data Analysis: (5 hours/day x7 days) = 35 hours x $60 / hour = $2100

Presentation of the results: 2 hours x $ 60 / hour = $120

Total cost = $3,900

There was no monetary cost associated with this project since the project was entirely online.

Appendix F: **UMass IRB Approval**

file:///Users/angelinemotari/Downloads/UMass_IRBApproval_Motari.pdf

Appendix G: **Consent Form**

You are being invited to participate in a quality improvement (QI) project titled, "Increasing Knowledge and Awareness of Expedited Partner Therapy among Providers". This QI project is being done by Angeline K. Motari, DNP student from the University of Massachusetts, Amherst. The purpose of this project is to increase knowledge and awareness of expedited partner therapy (EPT) among providers and create a change in attitude among providers regarding EPT. If you agree to participate in the project, you will be asked to complete an online survey/questionnaire (pre-survey), also participate in an education intervention regarding EPT, and then a post-survey.

By clicking agree below, you are indicating that you are at least 18 years old, have read and understand the consent form and you agree to participate in the quality improvement project.

- o I agree to terms and conditions
- o I disagree

Appendix H: Frequency Tables

Table 3: Presurvey

Med allergies are a concern

	N	%
Strongly Agree	6	50.0%
Agree	6	50.0%

Table 4: Post-survey

Med allergies are a concern

	N	%
Strongly Agree	5	41.7%
Agree	2	16.7%
Missing System	5	41.7%

Table 5: Presurvey

Liability is a concern

	N	%
Strongly Agree	2	16.7%
Agree	5	41.7%
Neutral	3	25.0%
Disagree	1	8.3%
Strongly Disagree	1	8.3%

Table 6: Post-survey

Liability is a concern

	N	%
Strongly Agree	2	16.7%
Agree	3	25.0%
Disagree	1	8.3%
Strongly Disagree	1	8.3%
Missing System	5	41.7%

Table 7: Presurvey

Time Constraints is a factor

	N	%
Strongly Agree	3	25.0%
Agree	2	16.7%
Neutral	3	25.0%
Disagree	2	16.7%
Strongly Disagree	2	16.7%

Table 8: Post-survey

Time constraint is a hindrance

	N	%
Agree	2	16.7%
Neutral	1	8.3%
Disagree	3	25.0%
Strongly Disagree	1	8.3%
Missing System	5	41.7%

Table 9: Presurvey

Organization Guidelines are importantr

	N	%
Agree	7	58.3%
Disagree	5	41.7%

Table 10: Postsurvey

Institutional guidelines/policy

	N	%
Agree	4	33.3%
Disagree	2	16.7%
Neutral	1	8.3%
Missing System	5	41.7%

Table 11: Presurvey

Training on EPT use is important

	N	%
Strongly Agree	8	66.7%
Agree	3	25.0%
Disagree	1	8.3%

Table 12: Postsurvey

Training on EPT use is important

	N	%
Strongly Agree	3	25.0%
Agree	3	25.0%
Neutral	1	8.3%
Missing System	5	41.7%