EXPLORATORY RESEARCH ON HEALTH CARE PROVIDERS' PERSPECTIVES ON EXPEDITED PARTNER THERAPY TO TREAT PATIENTS WITH CHLAMYDIA

by

Elian Aviraz Rosenfeld

B.A., Wellesley College, 2007

M.P.H., University of Pittsburgh, 2011

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by

Elian Aviraz Rosenfeld

It was defended on

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and approved by

Elizabeth Miller, MD, PhD, Associate Professor of Pediatrics, School of Medicine, University of Pittsburgh

Ronald Stall, PhD, Department of Behavioral and Community Health Sciences, Graduate School of Public Health, University of Pittsburgh

Martha Ann Terry, PhD, Assistant Professor, Department of Behavioral and Community Health Sciences, Graduate School of Public Health, University of Pittsburgh

Dissertation Advisor: John Marx, PhD, Professor Emeritus, Department of Behavioral and Community Health Sciences, Graduate School of Public Health, University of Pittsburgh

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Elian A. Rosenfeld, PhD

University of Pittsburgh, 2014

ABSTRACT

Chlamydia is a bacterial infection spread through sexual contact. It is the most commonly reported infectious disease in the United States and an issue of public health importance. Expedited partner therapy (EPT) effectively reduces rates of reinfection and increases the number of partners treated for chlamydia. EPT does not require sexual partners of patients infected with chlamydia to undergo screening or medical examination; instead the patient gives his/her sexual partner(s) a prescription or medication to treat the infection. The aim of this dissertation was to understand health care providers' perspectives regarding EPT using a mixed methods research approach. The first study that was conducted used a qualitative approach using in-depth interviews to gain an understanding of providers' views and opinions regarding the use of EPT in a context where EPT is permissible but underutilized. While providers have high levels of knowledge and sometimes use EPT, they identify multiple, systems-level barriers and potential facilitators for broader implementation of EPT. Nearly one third of providers interviewed failed to recognize the link between intimate partner violence (IPV) and sexually transmitted diseases (STDs), and most did not use screening questions that would directly assess for coercive STD risk. The second study utilized the findings from the qualitative study to develop an online survey. Close to half of providers reported never using EPT, and only 10%

reported always using EPT. Knowledge of EPT was associated with use of EPT and was associated with more positive attitudes about EPT. The most significant findings from these studies are that providers need to be educated about EPT. Both studies found that most providers did not routinely use EPT, but believe the practice is beneficial for patients infected with chlamydia. It is also clear that the majority of providers are not aware of or concerned about IPV in the context of EPT use. Providers need training and knowledge about IPV screening in order to make EPT safe and effective. Ultimately, providers need to be educated about this form of partner therapy, and clarity around the regulations of this practice is necessary in order to increase the use of EPT.

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1.0 INTRODUCTION

Sexually transmitted diseases (STDs) are a serious issue in the United States (US) and have been for more than two centuries. Each year there are an estimated 19 million new cases of STDs that result in roughly $17 billion in direct annual medical costs (Chesson et al., 2011). Public health providers have developed a variety of approaches to reduce the prevalence and incidence of STDs. Notably, the Centers for Disease Control and Prevention (CDC) have identified 5 main strategies for the prevention and control of STDs:

> education and counseling of persons at risk on ways to avoid STDs through changes in sexual behaviors and use of recommended prevention services; identification of asymptomatically infected persons and of symptomatic persons unlikely to seek diagnostic and treatment services; effective diagnosis, treatment, and counseling of infected persons; evaluation, treatment, and counseling of sex partners of persons who are infected with an STD; and pre-exposure vaccination of persons at risk for vaccine preventable STDs (Centers for Disease Control and Prevention, 2010, p. 2).

However, preventing and containing STDs is a serious challenge. One STD that has proven especially difficult to control is chlamydia trachomatis (hereafter chlamydia). Chlamydia is a bacterial infection spread through sexual contact and is the most commonly reported infectious disease in the United States (Centers for Disease Control and Prevention, 2012). Currently, the CDC (2010) recommends that all sexually active women 25 years of age and younger, all pregnant women, and all sexually active men who have sex with men (MSM) be screened annually for chlamydia. In 2011, over 1.4 million cases of chlamydia were reported to

the CDC, and research indicates that more than 1.5 million cases remain undiagnosed or unreported each year (Centers for Disease Control and Prevention, 2012; Weinstock, Berman, & Cates Jr, 2004).

Despite screening recommendations and effective treatment, the prevalence of chlamydial infections and the rates of repeat infections have remained extremely high. Consequently, in recent years there has been a push to examine new and innovative ways to treat the partners of individuals with chlamydia. Recently the CDC (2006) suggested the use of expedited partner therapy (EPT) for patients whose partners are infected with an STD; this treatment method does not require them to undergo screening or medical examination. The most common form of EPT is patient-delivered partner therapy (PDPT), in which the patient gives his/her sexual partner(s) a prescription or medication to treat the infection.

1.1 CHLAMYDIAL INFECTIONS

Chlamydia is sometimes referred to as a "silent epidemic" because the infection is often asymptomatic (Walsh, Anderson, & Irwin, 2000). Researchers estimate that anywhere between 40% to 90% of chlamydial infections are asymptomatic (Meyers, Halvorson, & Luckhaupt, 2007; Peipert, 2003; Walsh, Anderson, & Irwin, 2000). While it is unclear what the exact percentages of infections are asymptomatic, it seems likely that many men and women do not exhibit any symptoms of chlamydia.

A common symptom of chlamydia in men is nongonoccal urethritis, which can cause painful urination and urethral discharge (Peipert, 2003). Also, the infection can lead to epididymitis, which causes intrascrotal inflammation (Peipert, 2003). Chlamydia does not cause

serious complications in men. However, the infection does have serious consequences for women. Symptoms of chlamydia in women include abnormal vaginal discharge, pelvic pain, painful urination, and irregular uterine bleeding (Peipert, 2003). If left untreated the infection can cause serious sequelae. Anywhere from 15% and 40% of untreated infections will develop into pelvic inflammatory disease (PID) (Walsh et al., 2000). PID can lead to inflammation of the fallopian tubes, uterus as well as the ovaries (Haggerty et al., 2010). PID can also cause chronic pelvic pain, ectopic pregnancy, and infertility (Haggerty et al., 2010). PID produced by chlamydial infections are one of the most preventable causes of infertility; indeed, one episode of PID causes infertility in 10% to 12% of females (Paavonen & Eggert-Kruse, 1999; Walsh et al., 2000). Additionally, infection with chlamydia during pregnancy can be transmitted to the infant during delivery. This can cause multiple serious complications; approximately 20% of infants born to infected mothers will develop chlamydial pneumonia, and 30% to 50% of infants will have conjunctivitis (Peipert, 2003; Walsh et al., 2000). In addition, for both males and females, infection with chlamydia increases the risk of infection with HIV/AIDS if exposed (Fleming & Wasserheit, 1999).

A number of tests are available to screen for chlamydia. The Food and Drug Administration (FDA) approved of cell cultures, enzyme immunoassay tests, direct fluorescent antibody tests, and nucleic acid amplification tests (NAATs) to detect chlamydial infections (Centers for Disease Control and Prevention, 2010b; Stamm, 2001). NAAT, a molecular test that detects chlamydia-specific DNA and RNA sequences, is the most sensitive and specific test and is the CDC recommended diagnostic method for chlamydia (Centers for Disease Control and Prevention, 2002). In terms of treatment, one single dose of one gram of Azithromycin effectively treats chlamydia (Centers for Disease Control and Prevention, 2010b).

Since 1994, chlamydia has been the most commonly reported sexually transmitted disease in the nation (Centers for Disease Control and Prevention, 2012). In 2011, 1,412,791 cases of chlamydia were reported to the CDC from all 50 states and the District of Columbia, the largest number of any disease ever reported. The rates of reported infections differ by gender, age, race and ethnicity. The rate of infection among females was 648.9 cases per 100,000, and among males was 256.9 cases per 100,000; the higher rate in women is most likely the result of a greater number of women being screened (Centers for Disease Control and Prevention, 2012). In addition, repeat chlamydial infections occur in 10% to 20% of cases among young women; repeat infections may be the result of re-infection by sexual partners who have not been treated (Centers for Disease Control and Prevention, 2011; Hosenfeld, et al., 2009).

The highest age-specific rates of infection are in individuals aged 15 to 19 and those 20 to 24. Racial and ethnic minorities have high rates of infection: the rate among blacks is over 7 times higher than whites, rates among Hispanics are 2.1 times higher than whites, and rates among American Indians/Alaska Natives are 4.1 higher than whites (Centers for Disease Control and Prevention, 2012). The prevalence of the infection in MSM is monitored by the STD Surveillance Network (SSuN), and in 2011 the median chlamydia prevalence in this population was 11.3%. (Centers for Disease Control and Prevention, 2010a).

As of 2008, the direct medical cost to treat chlamydia was $45.00 for both men and women (Owusu-Edusei Jr, et al., 2013). The cost to treat sequelae in men was $313, while for women it was $3,202 (Owusu-Edusei Jr, et al., 2013). The overall yearly costs associated with chlamydia in the United States are between 2 and 3 billion dollars (Hu, Hook, & Goldie, 2004). It is evident that chlamydia is a serious and costly public health problem.

1.2 PAST AND PRESENT CDC CHLAMYDIA SCREENING RECOMMENDATIONS

As a result of the discovery of the high prevalence of chlamydia and the serious complications it causes, in 1985 the CDC convened a group of STD experts to meet with its staff of the Division of Sexually Transmitted Diseases to discuss guidelines to control chlamydial infections (Centers for Disease Control and Prevention, 1985). The guidelines determined that screening efforts should focus on young, sexually active women (Centers for Disease Control and Prevention, 1985). These guidelines did not establish specific screening recommendations, asserting that the lack of reliable diagnostic measures precluded widespread endeavors to combat the infection.

The CDC report *Recommendations for the Prevention and Management of Chlamydia trachomatis infections, 1993*, established the first set of CDC chlamydia screening recommendations for the nation (Centers for Disease Control and Prevention, 1993). Newly available diagnostic measures enabled the CDC to recommend a more aggressive prevention strategy through widespread screening. The CDC recommended the annual screening of all sexually active women under the age of 20, women 20 to 24 years of age with risk factors, and women over 24 years of age with multiple risk factors (Centers for Disease Control and Prevention, 1993). No recommendation for screening men was created. According to the report, male screening "would be more acceptable if urine rather than intraurethral swab specimens could be used" (Centers for Disease Control and Prevention, 1993, p. 24). But there was not enough evidence available to recommend the use of urine tests for diagnosis of the infection.

Since they were first introduced in 1993, the CDC's chlamydia screening recommendations and guidelines have not been altered a great deal. The most significant changes to recommendations for women was increasing the age bracket for annual screening

from age 20 and under, to 24 and under in 1998, and then another change in 2002 to include women 25 years of age (Centers for Disease Control and Prevention, 1998, 2002). In addition, in 2002 the CDC created new screening recommendations for MSM, which was considered a population at greater risk for STDs and HIV/AIDS due to unsafe and risky sex practices. Consequently, the CDC recommended that sexually active MSM be screened annually for chlamydia as well as HIV, syphilis, and gonorrhea (Centers for Disease Control and Prevention, 2002). MSM are the only group of males that the CDC recommends testing for chlamydia.

In 2006 the CDC convened a meeting with consultants to review evidence regarding male chlamydia screening. This meeting's purpose was to examine available evidence and provide guidance to programs that were interested in or already screening men, but not to provide any formal recommendation about adopting or expanding male screening. The conclusion of the *Male Chlamydia Screening Consultation* was that: "screening men for Ct should be considered as a secondary focus to prevent Ct infection and sequelae among women"; the report also stated that "there was no consensus on the state of the cost-effectiveness literature because of differences among studies regarding methodology and a lack of empiric evidence of the impact of screening men on the prevalence in women" (Centers for Disease Control and Prevention, 2007, p. 5).

The CDC did not amend its recommendations for men in the four years between the 2006 consultation and the publication of the most recent chlamydia screening recommendations in 2010; it continues to recommend the annual screening of sexually active MSM for chlamydia (Centers for Disease Control and Prevention, 2010). With regard to male screening, current recommendations state that: "screening programs have been demonstrated to reduce both the prevalence of *C. trachomatis* infection and rates of PID in women…targeted chlamydia

screening in men should only be considered when resources permit and do not hinder chlamydia screening efforts in women" (Centers for Disease Control and Prevention, 2010, p. 45).

1.3 MALE CHLAMYDIA SCREENING

The CDC did not establish chlamydia screening guidelines for men for numerous reasons. These include the priority to screen women due to the severe sequelae in women, ineffective diagnostic screening tests for men, and that screening men has not been found to be cost-effective in comparison to screening women.

While studies found that screening women effectively reduced the prevalence of the infection, research did not support the inclusion of men in screening efforts. Research from the late 1980s and early 1990s cited the lack of effective diagnostic procedures and inadequate financial resources as factors that limited the widespread screening of males for chlamydia (Genc, Ruusuvaara, & Mardh, 1993; Handsfield, 1987; Randolph & Washington, 1990; Rietmeijer, Judson, Van Hensbroek, Ehret, & Douglas Jr., 1991). The invasive and uncomfortable urethral swabbing required to test males for chlamydia was considered to be a serious barrier to the widespread screening of men (Centers for Disease Control and Prevention, 1993).

New diagnostic technology has made screening men more feasible. Urine-based NAATs are highly sensitive and specific. Most importantly, NAATs are noninvasive, thus making it much simpler to screen asymptomatic males (Gaydos, Ferrero, & Papp, 2008; Marrazzo et al., 2007; Tebb et al., 2005). This method of screening males for chlamydia has led to an increase in male screening and the detection of the presence of the infection in the male population

(Satterwhite, Joesoef, Datta, & Weinstock, 2008). From 2005 to 2009, the rate of chlamydial infection in men increased 37.6% (Centers for Disease Control and Prevention). The CDC suggests that this is related to the increased usage of NAATs. It is clear that this effective screening method has eliminated a large obstacle to screening men for chlamydia.

While the technology to test men for chlamydia has improved feasibility of widespread screening, various other obstacles to screening men exist. A literature review on the cost-effectiveness of screening males for chlamydia reviewed articles published between 1990 and 2007; the authors found that screening females was more cost-effective than screening males (Gift, Blake, Gaydos, & Marrazzo, 2008). In addition, it should be noted that a recent a randomized control trial conducted in Denmark found that increased screening of men did not reduce the risk of PID in women (Andersen et al., 2011). Furthermore, unlike for women, there are no suggested reproductive health annual exams for men (Kalmuss & Tatum, 2007), and according to Sonfield (2002), "there is no analog for men to the obstetrician-gynecologist" (p. 10). While new technology has made testing men easier, no measures are in place that actually encourage men to obtain reproductive health care, nor is there strong evidence to support the widespread screening of men.

1.4 BARRIERS TO CHLAMYDIA SCREENING

A number of studies have shown that provider adherence to the CDC chlamydia screening guidelines to screen all sexually active young women under the age of 25 is low. One study of primary care providers in Washington and Idaho found that only 42% of providers adhered to screening recommendations (McClure et al., 2006). Analysis of data from the 2005 National

Ambulatory Medical Care Survey, a component of the National Health Care Survey administered by the CDC's National Center for Health Statistics, found that of the 3.8 million visits made by women aged 15 to 25 to obstetrician/gynecologists in which pelvic examinations occurred, less than 20% were tested for chlamydia (Hoover & Tao, 2008).

Health care providers' knowledge and attitudes about the infection can impact their screening practices (McClure et al., 2006). A survey conducted by McClure et al. (2006) found that 20% of primary care providers were not aware of screening recommendations. In addition, several studies have found that providers were not comfortable recommending screening to their patients, while others reported that they did not believe that their patients were at risk for chlamydia (Cook et al., 2001; McClure et al., 2006; Torkko, Gershman, Crane, Hamman, & Baron, 2000). These studies found a strong association between health care providers' confidence and comfort with discussing sexual health and screening their patients (Cook et al., 2001; McClure et al., 2006; Torkko et al., 2000). It should be noted that although these studies are a bit dated, they do offer key insights into providers' perspectives that recent research does not provide.

Research indicates that race and ethnicity play a role in providers' screening practices. Health care providers test minority patients more often than their white counterparts (Christiansen-Lindquist, Tao, Hoover, Frank, & Kent, 2009; Wiehe, Rosenman, Wang, Katz, & Fortenberry, 2011; Wiehe, Rosenman, Wang, & Fortenberry, 2010). Wiehe et al. (2010) also found provider testing practices to be strongly influenced by racial and ethnic stereotypes. In fact, this recent research suggests that the higher infection rates in minorities may be due partly to the greater number of minorities screened for chlamydia. Other factors associated with providers' chlamydia screening practices are age and gender. Younger health care providers are

more likely to test their patients for chlamydia (Cook et al., 2001; McClure et al., 2006; Wiesenfeld et al., 2005). One theory to explain this difference is that younger providers may have had more training about screening guidelines and practices than their older colleagues (McClure et al., 2006). Female physicians are also more likely than male physicians to test their patients for chlamydia; the reasons for this difference are unclear (Cook et al., 2001; McClure et al., 2006; Torkko et al., 2000; Wiesenfeld et al., 2005).

Patients' knowledge and attitudes about chlamydia also impact screening. Several studies have found that young men and women do not perceive themselves to be at risk for infection with chlamydia and do not seek out testing (American Social Health Association, 2005; Barth, Cook, Downs, Switzer, & Fischhoff, 2002; Ford, Jaccard, Millstein, Bardsley, & Miller, 2004). In addition, patients report that it is challenging to discuss STDs and sexual health issues with their health care providers (American Social Health Association, 2005; Blake, Kearney, Oakes, Druker, & Bibace, 2003). Furthermore, findings from the American Social Health Association (2005) indicate that many patients incorrectly assume that STD testing is part of routine care and do not specifically ask their provider for STD screening. Poor provider-patient communication is a barrier to chlamydia screening.

In addition, research has found that patients experience anxiety and fear around STD testing. Findings from focus groups conducted with young adults in the Job Corps and Department of Youth Services found that participants believed that being screened for and potentially diagnosed with chlamydia could negatively influence their lives (Blake, et al., 2003). Participants felt that being screened and diagnosed with chlamydia might make them feel ashamed, dirty, and would potentially harm their sexual partnerships (Blake, et al., 2003). Participants cited these factors as deterrents to seeking out chlamydia testing. In addition,

research has indicates that fear around the painful urethral swab test has prevented males from being screened for chlamydia (Blake et al., 2003; Marrazzo et al., 2007). But as noted in section 1.3, urine-based testing can now be used to screen men for chlamydia.

Another factor that impacts chlamydia screening is health insurance. The type of insurance an individual has impacts chlamydia screening. The National Longitudinal Study of Adolescent Health found that individuals who did not have health insurance or had Health Maintenance Organization (HMO) coverage were significantly less likely to report screening for or treatment of STDs in the previous year than individuals with Medicaid (Fiscus, Ford, & Miller, 2004). Several other studies found that females with public health insurance or Medicaid are more likely to be tested for STDs than females with other forms of health insurance coverage (Heijne, Tao, Kent, & Low, 2010; Wiehe et al., 2011; Wiehe et al., 2010). These findings indicate that the type of health insurance a woman has may impact screening practices and may be indicative of the belief that low-income females are more likely to be infected with STDs. In addition, the National Center for Health Statistics found that in the year 2008 approximately 30% of individuals aged 20 to 29 lacked health insurance (Cohen & Bloom, 2010). Recently, with the advent of the Affordable Care Act many young adults have been able to obtain insurance coverage (Sommers, Buchmueller, Decker, Carey, & Kronick, 2013). However, many millions of young Americans still do not have any health insurance and have an increased risk for the infection's potential sequelae.

1.5 FACILITATORS TO CHLAMYDIA SCREENING

Fortunately, policy changes have in fact increased rates of chlamydia screening for young women. The CDC's Division of STD Prevention collaborated with the National Committee for Quality Assurance (NCQA), which is a non-profit organization committed to improving health plans and health care, to add the annual chlamydia screening of sexually active young women aged 16 to 25 years of age as a performance measure for the Healthcare Effectiveness Data and Information Set (HEDIS) (Burstein et al., 2005). The NCQA uses HEDIS as a tool to measure the performance of managed care health plans' quality of care. Most commercial health plans and Medicaid report health services data to the NCQA (Burstein et al., 2005). Health plans alter their practices to enhance and increase their performance ratings (Burstein et al., 2005). The inclusion of annual chlamydia screening for young women as a HEDIS performance measure for health plans significantly increased the rates of screening from 2001 to 2010: the rates increased from 23.1% to 43.1% for women with commercial health plans and from 40.4% to 57.5% for women with Medicaid (Centers for Disease Control and Prevention, 2012). Clearly, screening rates for women who are insured has greatly increased. Indeed, it seems that instituting chlamydia screening as a quality performance measure for health plans has improved adherence to screening guidelines and will most likely continue to do so as health plans strive to improve their performance ratings.

In addition, research has been conducted on means to increase adherence to screening guidelines. Two interventions have been found to significantly increase chlamydia screening rates. One intervention implemented by the Kaiser Permanente Mid-Atlantic States Managed Care Organization placed chlamydia collection swabs next to swabs used for Pap tests for all patients 26 years of age and younger (Burstein et al., 2005). This intervention increased rates of

annual screening by over 30% (Burstein et al., 2005). The other intervention was a randomized clinical trial of a systems-level intervention in pediatric clinics within a large health maintenance organization (Shafer et al., 2002). The intervention engaged staff to increase knowledge and awareness of chlamydia prevalence, promoted team building around the project, and improved clinical practices through universal urine testing of all adolescent patients. The intervention significantly increased screening rates of adolescent girls (Shafer et al., 2002). Both a simple structural intervention and a multifaceted intervention effectively increased annual chlamydia screening rates and improved adherence to screening guidelines.

1.6 CHLAMYDIA SCREENING AND STIGMA

The recommendation to primarily screen women for chlamydia can be viewed as a form of gender discrimination (Voelker, 2010). This recommendation essentially places the burden of the disease on women and deems women to be the carriers and transmitters of the infection (Duncan & Hart, 1999). In addition, the sexual behavior of women is scrutinized while men's behavior is not (Duncan & Hart, 1999).

A qualitative study conducted at a family clinic in Glasgow, Scotland, found that women not only felt stigmatized about having chlamydia but also felt a great deal of anxiety about notifying their sexual partners (Duncan, Hart, Scoular, & Bigrigg, 2001). A qualitative study conducted at a London sexual health clinic found that males and females had very different experiences with testing positive for chlamydia (Darroch, Myers, & Cassell, 2003). Women possess more awareness about chlamydia than men and express self-blame regarding the contraction of the infection (Darroch et al., 2003). The authors assert that this study highlights

the way in which men see themselves as blameless, while women feel stigmatized and ashamed (Darroch et al., 2003).

In addition, men lack knowledge about chlamydial infections. One study found that male participants who had heard of chlamydia were unclear about the symptoms and consequences of the infection (Chaudhary et al., 2008). The majority of the male participants did not believe that chlamydia was a serious threat to their health. Darroch et al. (2003) also found that most of the males in their study perceived the severity of chlamydia to be low. In fact, one male patient interviewed did not believe that chlamydia was at all serious and only sought treatment a month and half after being informed he was infected (Darroch et al., 2003). Similarly, a study conducted in Scotland by researchers Lorimer and Hart (2010) found that male participants' knowledge about chlamydia was less than that of their female counterparts. Males were not aware that chlamydia was often asymptomatic (Lorimer & Hart, 2010). In addition, the majority of men were not aware of the serious consequences chlamydia can have in women.

It is quite problematic that research has shown that men do not believe that chlamydia is a health concern. Research has also shown that men do not seek out preventative care and are more likely to be uninsured than women (Sonfield, 2002). Screening as well as subsequent diagnosis can provide an opportunity for health care providers to discuss sexual health with their patients. As previously mentioned, there are no recommended reproductive health annual exams for men (Kalmuss & Tatum, 2007). Ignoring men's sexual health can cause serious health consequences for both males and females.

1.7 EXPEDITED PARTNER THERAPY

Traditionally, individuals infected with STDs are asked by their providers to notify their sexual partners to seek treatment or the providers themselves contact the patient's sexual partners (Goldsworthy & Fortenberry, 2009). However, provider referral is extremely difficult for already overburdened health care providers. In fact, public health departments provide notification for only around 20% of patients with the two most common STDs, chlamydia and gonorrhea (Gursahaney, Jeong, Dixon, & Wiesenfeld, 2011). While patient referral is more difficult to measure, research indicates that it does not often result in treatment for partners (Fortenberry, Brizendine, Katz, & Orr, 2002; Golden, et al., 2001). EPT is a promising way to expedite the process of delivering medication to patients receiving and treating individuals for chlamydial infections.

Positive findings from preliminary research regarding EPT prompted the CDC to fund four randomized clinical trials comparing EPT to standard partner referral for individuals with chlamydia, gonorrhea, and trichomoniasis (Centers for Disease Control and Prevention, 2006). Three of these trials focused on chlamydia. The first study by Schillinger et al. (2003) randomized women who tested positive for chlamydia to refer their male sexual partners for treatment or to give medication to give to their male sexual partners. The study was conducted in 5 cities in the United States among 1,787 women aged 14 to 34. Follow-up visits to assess recurrent infection were conducted after one month and four months. Ultimately, the study found that the risk of reinfection was 20% lower, but not statistically significant, for the women in the PDPT arm of the study (Schillinger, et al., 2003). Schillinger et al. (2003) state that "although we did not conclusively show that patient-delivered partner treatment is more effective than

self-referral, the ease and acceptability of this intervention may make it a desirable approach for some patients" (p. 55).

Golden et al. (2005) conducted a randomized control trial with 2,751 subjects, heterosexual men and women. The trial randomized men and women who tested positive for chlamydia or gonorrhea to refer their sexual partners for treatment or to provide medication to their sexual partners. Follow-up after treatment for infection was conducted between three to 19 weeks, and the study found that there was a reduced risk (relative risk, .75, 95% confidence interval) of reinfection for those in the EPT arm of the study who successfully gave their partners medication (Golden, et al., 2005). Golden et al. (2005) assert: "expedited treatment of sex partners who received a diagnosis of gonorrhea or chlamydial infections reduced the rate of persistent or recurrent infections in participants and increased the proportion of partners treated" (p. 684).

In addition, a randomized control trial was conducted with 977 men under the age of 24 with symptomatic urethritis caused by gonorrhea or chlamydia (Kissinger, et al., 2005). The men were randomly assigned to standard partner referral, education enhanced partner referral or PDPT. Follow-up to test for reinfection was conducted between one to two months after treatment; men who were in the PDPT arm of the study were significantly less likely to be reinfected with gonorrhea and chlamydia and more likely to have partners who received treatment than those in the standard partner referral arm ($P < .001$) (Kissinger, et al., 2005). For all three of the randomized control trials, no adverse effects related to medication were reported (Golden, et al., 2005; Kissinger, et al., 2005; Schillinger, et al., 2003). Given that chlamydial infections are so widespread and can have severe consequences, it is clear that EPT is a promising means to fight the infection.

Preliminary research has also shown that EPT is cost-effective. Gift et al. (2011) utilized the data from two of the randomized control trials on EPT to assess its cost-effectiveness compared to standard partner referral for partners of infected patients. The authors determined labor costs associated with providing EPT and standard referral, as well as the cost to treat patients and costs associated with sequelae from gonorrhea and chlamydia in women (Gift, et al., 2011). EPT was determined to be cost-effective from both the health care system perspective, which assesses direct costs as well as costs related to sequelae, and the societal perspective, which considers costs associated with loss of productivity related to disease (Gift, et al., 2011). However, from the perspective of the individual payer, EPT was not cost-effective compared to standard partner referral. This is largely related to the structure of the insurance system in this country. Gift et al. (2011) state that, "the fragmentation of health care financing in the United States creates a situation in which decision-making by individual organizations to minimize their own costs can increase costs for the health care system and for society as a whole" (p. 1072).

Several studies regarding patient perceptions and willingness to use EPT have been conducted. A national survey of 505 patients regarding their willingness to engage in PDPT found that over 80% of those surveyed were willing to deliver partner therapy and almost 70% were willing to use partner-delivered treatment (Goldsworthy & Fortenberry, 2009). The authors found that patients perceived giving and receiving EPT differently and also found that patients were less likely to be willing to provide EPT to casual sex partners. Ultimately, Goldsworthy and Fortenberry (2009) assert that these findings indicate that it is clear that EPT is an acceptable practice to patients.

Additionally, qualitative research has been conducted about patients' perceptions and willingness to use EPT. One qualitative study was conducted at an STD clinic in Indianapolis,

Indiana, with 20 men and 20 women (McBride, Goldsworthy, & Fortenberry, 2010). The participants were interviewed about a hypothetical situation in which they were infected with an STD; participants were asked if they would prefer standard referral, EPT, providing their partners with at-home screening kits to test for STDs, screening kits and EPT, or nothing (McBride, et al., 2010). The majority of patients were willing to provide their partners with both EPT and screening kits. In addition, participants were more likely to give or be given EPT or screening kits if they had a partner with whom they were close rather than a casual sexual partner (McBride, et al., 2010).

Another qualitative study conducted in-depth interviews with young men and women who were diagnosed with chlamydia or gonorrhea and were subsequently provided with EPT to offer to their partners (Temkin, Klassen, Mmari, & Gillespie, 2011). The authors found that patients were willing to provide their partners with treatment and felt that it was a means to keep themselves and their partners healthy. In addition, Temkin et al. (2011) noted that one concern regarding EPT is that partners "will miss out on comprehensive STD testing and prevention counseling" but it was then noted that "within a week of being given EPT, 5 of 21 partners had already sought further STD testing—evidence that at least some partners do not regard EPT has a substitute for hands-on health" (p. 655).

Yet, unlike patients, many health care providers are unwilling to implement EPT. A national survey of over 3,000 physicians was conducted in the United States and found that while about half of the providers surveyed had used EPT, only 12% reported regularly using this practice (Hogben, McCree, & Golden, 2005). However, this survey did not ask physicians about barriers to utilizing EPT, and no nurse practitioners or physician assistants were surveyed (Hogben, et al., 2005). A separate survey of health care providers conducted in New York

included physicians, nurse practitioners, and physician assistants regarding their use of EPT (Rogers, Opdyke, Blank, & Schillinger, 2007). Less than 30% of providers regularly utilized EPT; usage was not significantly different across various provider types, but was positively associated with recent medical training. Once again, barriers to EPT use were not assessed (Rogers, et al., 2007).

Niccolai and Winston (2005) surveyed physicians in Rhode Island and Connecticut and found that only 50% had ever used EPT and only 6% used it regularly. However, close to 90% feared adverse health outcomes, and 75% were concerned about liability (Niccolai & Winston, 2005). A survey of 142 obstetrical providers, physicians, nurse midwives, nurses and medical assistants in Arizona found that fewer than half of the providers ever used EPT (Taylor, Collier, Winscott, Mickey, & England, 2011). The main reasons providers did not use EPT was a lack of knowledge of patients' partners' medical history, fear of liability or malpractice, and clinic policies; EPT use was associated with receiving information about the legality of EPT in Arizona (Taylor, et al., 2011).

1.8 CDC EPT RECOMMENDATIONS

In 2006, the CDC published the report *Expedited Partner Therapy in the Management of Sexually Transmitted Diseases*, which provides a review of EPT research and guidance regarding its practice. According to the CDC (2006), "both clinical and behavioral outcomes of the available studies indicate that EPT is a useful option to facilitate partner management among heterosexual men and women with chlamydial infection or gonorrhea" (p. 6). No research or data are available to support the use of EPT for MSM. In addition, according to the CDC's

(2006) report on EPT, "although several recent surveys document considerable use of EPT by some providers, no systematic data have addressed the determinants of providers' decisions about EPT or other partner management strategies" (p. 31). The report (2006) also notes that there are various barriers to the implementation of EPT including: issues of legality of EPT in several states[1], provider and health care agencies' acceptance of the practice, and insurance coverage.

The practice of EPT is also suggested as a means of partner management for patients infected with chlamydia in the 2006 and 2010 treatment guidelines. According to the CDC's *Sexually Transmitted Disease Treatment Guidelines, 2010*:

> When patients diagnosed with chlamydia or gonorrhea indicate that their partners are unlikely to seek evaluation and treatment, providers can offer patient-delivered partner therapy (PDPT), a form of expedited partner therapy (EPT)…Because EPT might be prohibited in some states and is the topic of ongoing legislation in others, providers should visit www.cdc.gov/std/ept to obtain updated information for their individual jurisdiction. Any medication or prescription provided for PDPT should be accompanied by treatment instructions, appropriate warnings about taking medications (p. 7).

It is evident from these guidelines that the CDC supports the use of EPT but recognizes that there are challenges that complicate implementation in clinical practice.

1.9 BARRIERS TO IMPLEMENTING EPT

There are a variety of barriers to implementing EPT. Based on the review of the literature on chlamydia screening and EPT, a conceptual model was developed to visually depict the various

[1] As of 2013 EPT is permissible in 35 states, potentially allowable in 9 states, and prohibited in 6 states.

factors that impact access to and uptake of EPT. This conceptual model was influenced by the Andersen (1995) model of access to medical care, Phillips et al.'s (1998) modifications to this model, and Irfan, Irfan, and Spiegel's (2012) model of barriers to health care. Andersen's model asserts that patients' use of health care is a function of predisposing factors such as demographics and health perceptions; enabling factors such as socioeconomic status and community resources; and need or care seeking, meaning perceived health status (Elliott, Nerney, Jones, & Friedmann, 2002). The modification of this model added the elements of provider level factors and environmental or health system factors (Parsons, Zaccaro, Wells, & Stovall, 1995).

This conceptual model of barriers to EPT stresses the interconnectedness of variables related to patients, providers, health practices and the health system. The figure below is comprised of patient-, health system-, provider-, and practice-level factors. At the practice level are practice guidelines and norms as well as financial issues, all of which influence health care providers' behavior. Many of these norms and financial barriers are shaped by variables at the health system level. For instance, the lack of reimbursement for EPT may cause financial strain for individual medical practices. The legal status of EPT, both real and perceived, is a barrier to the implementation of the practice at both the provider level and the health systems level; research suggests that health care providers may not be aware of the legal status of EPT in the state in which they practice medicine. At the patient level, predisposing patient factors related to access to health care and uptake of EPT include age, gender and perception of STDs in general. While patients' insurance status enables access to screening and EPT, care seeking may be influenced by perceptions of STD status. And as noted previously, use of EPT can be

determined by the type of sexual relationships patients have. Ultimately, all of these factors are interrelated and impact access, uptake, and use of EPT.

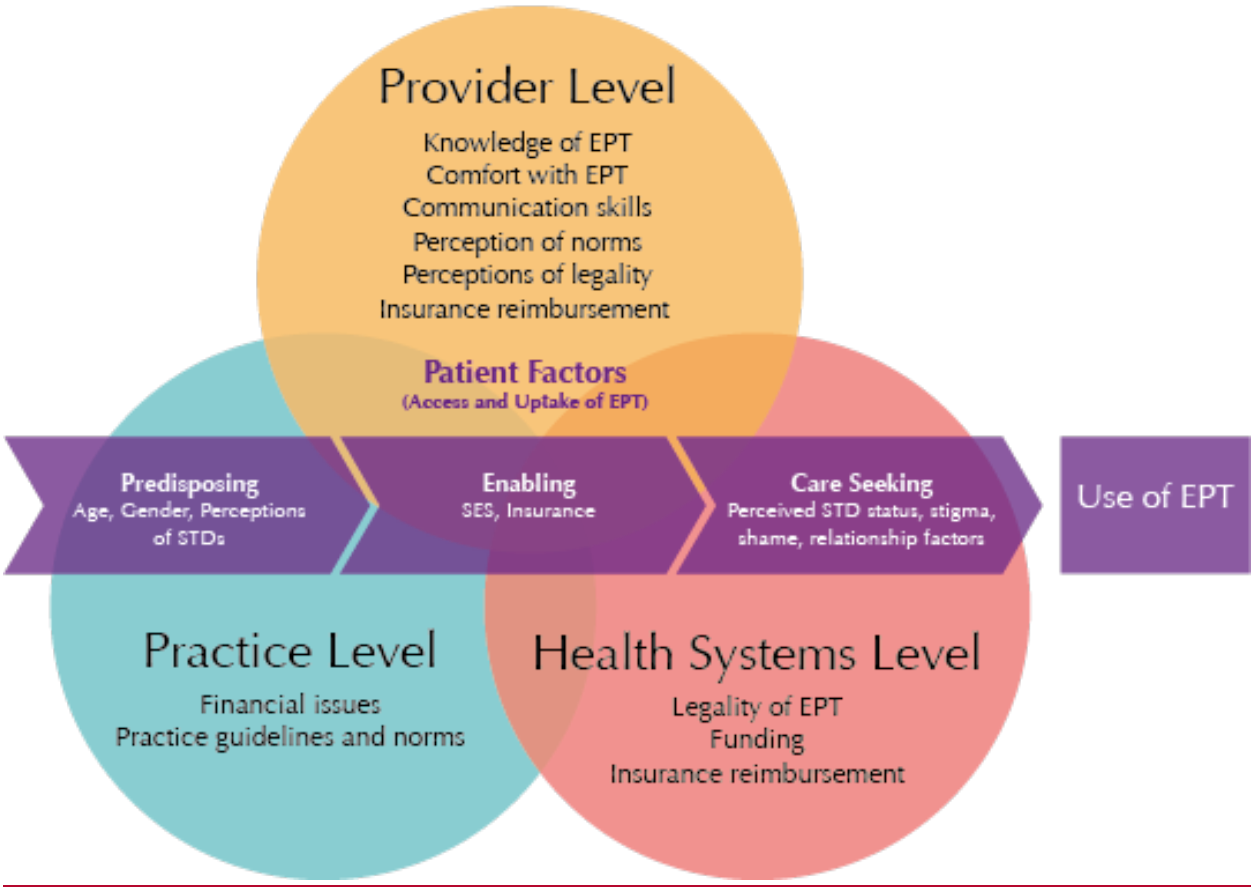

Figure 1.1: Conceptual Model

1.10 SUMMARY AND RESEARCH GAPS

Chlamydia is a serious public health problem in the United States. Current efforts to control this infection are insufficient as the rates of chlamydial infections remain extremely high. It is clear that one way to reach individuals with chlamydia is EPT, a practice that has the potential to be an

effective means to treat men and women infected with chlamydia to not only reduce rates of reinfection but also reduce overall rates of infection.

Health care providers do not work in a vacuum; their practices are influenced and shaped by the institutions in which they work. Understanding the perspectives of health care providers regarding EPT as well as identifying modifiable factors at both the provider and systems levels are essential for making EPT a more widely used method for preventing chlamydia reinfection. Little research has been done about institutional factors related to the implementation of EPT (Hogben & Burstein, 2006; Kissinger & Hogben, 2011). As such, research must also be conducted with nurse managers, certified nurse assistants, and practice managers. Additionally, the legal representation of practices or clinics is an important perspective to capture: fear of liability and malpractice was found to be a barrier to EPT, and it may be useful to have a legal representative provide insight regarding legal obstacles to the implementation of EPT (Taylor, Collier, Winscott, Mickey, & England, 2011). There is also a need to examine ways to amend policies related to insurance coverage of EPT. The financial cost associated with EPT is considered to be a serious barrier to its adoption by some researchers (Golden & Estcourt, 2011; Hogben & Burstein, 2006).

Additionally, the provision of EPT to patients unfortunately does nothing to reduce the burden of responsibility for sexual health that women bear; it is primarily women who will be provided with EPT to give to their partners. Understanding the social consequences of EPT would be of great importance to address in future research and interventions. There is also a lack of information regarding any potential dangers related to providing patients with EPT. Recently, the American College of Obstetrics and Gynecology asserted that IPV "should be taken into account especially when considering expedited partner treatment" (Obstetricians &

Gynecologists, 2012, p. 2). It is important to for health care providers to address the potential for intimate partner violence as patients could be at risk if they disclose to their partners that they are infected with an STD (M. Decker et al., 2011). However, there is no information available on health care providers' practices around IPV in the context of EPT use.

Ultimately, it is impossible to effect change without understanding what information we need to communicate to providers and practice managers, what barriers exist at the institutional level, and what change is necessary at the policy level. As a result, future research will have to focus on these multi-level factors as a means of increasing chlamydia screening as well as the practice of EPT.

2.0 OVERVIEW OF DISSERTATION AND SPECIFIC AIMS

Although health care providers are the individuals who actually provide patients with EPT, research on provider knowledge and perspectives on implementing EPT in practice is limited and more information is still necessary. The aim of this dissertation is to understand providers' perspectives regarding EPT using a mixed method research approach.

The first study that was conducted used a qualitative approach to gain an in-depth understanding of health care providers' views and opinions about using EPT. Open-ended interviews were conducted with a purposive sample of 23 health care providers. These providers practice adolescent medicine, family medicine, internal medicine and obstetrics/gynecology at the University of Pittsburgh Medical Center (UPMC) and provide care in a range of sites including primary care, community-based, and hospital-based clinics. The providers were recruited via email or referred by colleagues to participate in this study.

The interviews were conducted by the primary investigator between October and December 2013 and took approximately 15 to 30 minutes to complete. All interviews were audio-recorded, transcribed verbatim, stripped of identifiers, and uploaded into Atlas.ti v.6 software. Using a thematic analysis approach an initial codebook was created from reviewing the first 5 transcripts. The initial codes included a series of a priori codes from the interview questions that included knowledge, attitudes, and previous experiences with EPT. More codes were added as additional interviews were reviewed and content saturation was reached after the

16th interview with no new codes added. All transcripts were coded with the finalized codebook by the primary investigator and an independent coder who met to review coding and to discuss any issues or discrepancies. No significant differences emerged in this process of consensus coding.

Two articles about the qualitative data are presented in this dissertation. Article one examines use, knowledge, and barriers and facilitators of EPT. The second article examines providers' views on IPV and STDs and their role in addressing IPV when offering EPT to patients.

The results of this qualitative research were utilized to inform the creation of a provider survey, the second study for the dissertation. The codebook was used as the foundation for the creation of survey questions and the survey instrument was primarily investigator developed. In addition, a question block about attitudes on EPT was taken from a survey on EPT created by Packel et al. (2006). Extensive pilot testing was conducted on this survey. The survey was reviewed with experts in STD testing and treatment as well as with two health care providers to test for understandability and content. In addition, the survey was pilot tested with 5 public health researchers.

From March 31 to May 4, 2014, this online survey was distributed via email to a convenience sample of health care providers from diverse disciplines–-obstetrics/gynecology, internal medicine (including medicine/pediatrics), family medicine, and adolescent medicine. Health care providers eligible to participate in the study were physicians, physician assistants and nurse practitioners, including physician trainees (residents and fellows). We distributed an email describing the study to department administrators and chiefs of departments in adolescent medicine, internal medicine, family medicine, and obstetrics/gynecology departments. The

providers to whom the survey was distributed practice in a range of sites including primary care, community-based, and hospital-based clinics. Participation of colleagues was encouraged with the support of health care providers who had previously participated in formative interviews to inform survey development. The survey was distributed to approximately 150 internists, 10 adolescent medicine providers, 225 obstetrician/gynecologists, and 30 family medicine providers. A total of 112 providers completed the survey. The overall response rate was 27% (112 out of 415); the response rate for internal medicine was 32.6% (49 out of 150), 70% (7 out of 10) for adolescent medicine, 33.3% for family medicine (10 out of 30), and 20% (45 out of 225) for obstetrics/gynecology.

The primary purpose of this survey was to identify factors associated with providers' use of EPT and knowledge of the legal status of EPT as well as their attitudes about EPT, and to describe barriers and facilitators to the use of EPT. The data were analyzed using SPSS version 21. Descriptive statistics were computed for all variables including demographics, knowledge, attitudes, barriers and facilitators of EPT use. In order to answer the primary aim of the study, associations between demographic factors, knowledge, and attitudes and the outcome variable, use of EPT, were explored. All factors found to be associated with use of EPT were included in a logistic regression model. To examine the next aim of the study, associations between demographic factors, knowledge, and attitudes and the outcome variable knowledge of the legal status of EPT were computed. All factors found to be associated with knowledge of the legal status of EPT were included in a logistic regression model. To determine which demographic factors were associated with positive attitudes towards EPT, t-tests and ANOVA were used. A linear regression model was used and variables were included in the model if they were found to be associated with the outcome variable, the attitude scale. Alpha at .05 or below was

determined to be statistically significant. Finally, the open-ended responses to the last question on the survey were analyzed using a codebook developed by the investigator for the previous qualitative study on EPT.

2.1 STUDY 1: SPECIFIC AIMS

The purpose of this qualitative study is to explore the perspectives of health care providers regarding the use of EPT. The specific research questions for this study are:

1) What are providers' levels of knowledge regarding EPT?

2) What attitudes do providers have regarding the use of EPT?

3) What do providers view as benefits and barriers to using EPT?

4) What do providers think would facilitate the implementation of EPT?

5) What concerns or fears about the potential for violence do providers have when a patient provides EPT for their partner to treat chlamydia?

2.2 STUDY 2: SPECIFIC AIMS

The purpose of this survey is to obtain descriptive information about the knowledge, attitudes, and practices of health care providers around EPT. The aim of this study is to provide the formative research needed to design clinic-based interventions to increase the uptake of EPT. The specific research questions for this study are:

1) What are providers' perceived levels of knowledge regarding EPT?

2) Do providers use EPT?

3) What factors are associated with provider use of EPT?

4) What ways do providers provide EPT?

5) Do providers know the legal status of EPT in Pennsylvania?

6) What factors are associated with provide knowledge of the legal status of EPT?

7) What are providers' attitudes about EPT?

8) What factors are associated with providers' attitudes about EPT?

9) What do providers perceive to be barriers and facilitators to using EPT?

3.0 A QUALITATIVE STUDY OF HEALTH CARE PROVIDERS' PERSPECTIVES ON EXPEDITED PARTNER THERAPY

Rosenfeld, E. A.[1], Marx, J. [1],, Terry, M. A. [1], Stall, R. [1], Pallatino, C. [1], & Miller, E.[2]

[1]Department of Behavioral and Community Health Sciences, Graduate School of Public Health; [2]Division of Adolescent Medicine, Children's Hospital of Pittsburgh of UPMC, University of Pittsburgh

Manuscript in Progress.

3.1 ABSTRACT

Objectives: Expedited partner therapy (EPT) effectively reduces rates of reinfection with chlamydia and increases the number of partners treated for the infection. There is a lack of information on health care providers' perspectives on EPT. The objective of this qualitative study was to understand health care providers' views and opinions regarding the use of EPT in a context where EPT is permissible but underutilized.

Methods: Using a purposive sampling strategy to include diverse providers who treat young women at risk for chlamydia, 23 semi-structured, in-depth interviews were conducted between October and December 2013. The interviews included questions about knowledge, attitudes, experiences with, and barriers and facilitators regarding the use of EPT.

Results: Many respondents report using EPT and believe the practice is beneficial for their patients. Most providers were unaware of their colleagues' practices and had limited knowledge regarding institutional policies around EPT. Health care providers noted a variety of barriers, such as fear of liability, confusion around the legal status of EPT, and not being able to counsel patients' partners that make routine and widespread use of this practice a challenge. Facilitators of EPT include clarifying issues of liability, providing education for providers, and creating guidelines and establishing practice norms regarding EPT.

Conclusions: To our knowledge, this is the first study to qualitatively examine health care providers' perspectives on EPT in the United States of America. While providers have high levels of knowledge and often use EPT, they identify multiple, systems-level barriers and

potential facilitators for broader implementation of EPT. Policy changes at the state level and institutional level supporting the practice are essential to make EPT a widely used practice.

3.2 INTRODUCTION

Chlamydia is a bacterial infection spread through sexual contact and is the most commonly reported infectious disease in the United States (US) (Centers for Disease Control and Prevention, 2010). Left untreated, chlamydia can cause pelvic Inflammatory Disease (PID), ectopic pregnancy, and infertility in women (Walsh et al., 2000). Rates of reinfection are high and research indicates that anywhere from 12 to 20 percent of females become reinfected with chlamydia within a year of their initial infection (Hosenfeld et al., 2009).

Traditionally, individuals infected with sexually transmitted diseases (STDs) are asked by their providers to notify their sexual partners to seek treatment or the providers themselves contact the patient's sexual partners (Goldsworthy & Fortenberry, 2009). Patient referral is challenging to measure and research indicates that it does not often result in treatment for partners (Fortenberry, Brizendine, Katz, & Orr, 2002). In addition, provider referral is extremely challenging for already overburdened health care providers. In fact, public health departments provide notification for only around 20% of patients with the two most common STDs, chlamydia and gonorrhea (Gursahaney, Jeong, Dixon, & Wiesenfeld, 2011).

In 2006, the Centers for Disease Control and Prevention (CDC) (2006) suggested the use of expedited partner therapy (EPT) for patients whose partners are infected with chlamydia; this treatment method does not require sexual partners to undergo screening or medical examination. The most common form of EPT is patient-delivered partner therapy (PDPT), in which the patient

gives his/her sexual partner(s) a prescription or medication to treat the infection. Several randomized control trials conducted comparing EPT to standard partner referral found that EPT effectively reduces rates of reinfection as well as increases the number of partners treated for the infection (Golden et al., 2005; Kissinger et al., 2005; Schillinger et al., 2003). EPT is a promising means for expediting the process of treating individuals for chlamydial infections.

Several surveys about providers' use of and attitudes about EPT (Hogben, McCree, & Golden, 2005; Niccolai & Winston, 2005; Packel et al., 2006; Rogers, Opdyke, Blank, & Schillinger, 2007; Taylor et al., 2011) indicate that while many providers are willing to use and do practice EPT, many barriers exist that have prevented broader implementation of this practice. These include fears of adverse patient outcomes, liability, incomplete care for patients' partners, a lack of comfort with the practice, and issues around reimbursement. What remains unclear is the extent to which providers think that these various barriers can be overcome. In Pennsylvania, EPT is considered permissible, but there is no specific law authorizing such practice (Bilardi et al., 2010; Centers for Disease Control and Prevention). In this context of nebulous policy, this qualitative study sought to explore health care providers' views and opinions regarding the benefits, barriers, and facilitators to the use of EPT.

3.3 METHODS

3.3.1 Sampling

Using a purposive sampling strategy to include diverse providers who treat young women at risk for chlamydia, we distributed an email describing the study to providers in adolescent medicine, internal medicine, family medicine, and obstetrics/gynecology departments within a large health care system, providing care in a range of sites including primary care, community-based, and hospital-based clinics. Providers were also referred by colleagues to participate. The University of Pittsburgh Institutional Review Board (IRB) reviewed this study and determined that it was an exempt study.

3.3.2 Data Collection

All 23 interviews were conducted by the primary investigator between October and December 2013. The semi-structured, in-depth interviews took approximately 15 to 30 minutes to complete. The interviews included questions about knowledge, attitudes, experiences with, and barriers and facilitators regarding the use of EPT. After the interview, providers completed a brief demographic survey, which included questions about sex, age, years practicing medicine, profession, specialty, and practice setting (Table 3-1). Participants were compensated $50 for their time.

3.3.3 Analysis

All interviews were audio-recorded, transcribed verbatim, stripped of identifiers, and uploaded into Atlas.ti v.6 software. Using a thematic analysis approach (Boyatzis, 1998), an initial codebook was created from reviewing the first 5 transcripts. The initial codes included a series of a priori codes from the interview questions that included knowledge, attitudes, and previous experiences with EPT. More codes were added as additional interviews were reviewed. Content saturation was reached after the 16th interview with no new codes. All transcripts were coded with the finalized codebook by 2 independent researchers who met to review coding and to discuss any issues or discrepancies. No significant differences emerged in this process of consensus coding.

Table 3-1: Demographic Characteristics of Study Participants

Demographics	N=23 (%)
Age (years)	
<30	3 (13%)
30-39	9 (39.1%)
40-49	8 (34.8%)
50-59	3 (13%)
Gender	
Male	2 (8.7%)
Female	21 (91.3%)
Specialty	
Adolescent Medicine	5 (21.7%)
Family Medicine	3 (13%)
Internal Medicine/Womens Health	8 (34.9%)
Obstetrics/Gynecology	7 (30.4%)
Years practicing (including residency)	
0-5	7 (30.4%)
6-10	3 (13%)
11-20	9 (39.1%)
21-30	4 (1.4%)
Profession	
Physician	21 (91.3%)
Nurse Practitioner	2 (8.7%)
Practice Setting (all that apply)	
Hospital-Based	17 (73.9%)
Primary Care	7 (30.4%)
Community-Based	2 (8.7%)
Other	1 (4.3%)

3.4 RESULTS

The majority of the 23 providers interviewed were physicians, female, had been practicing medicine for 6 or more years and were between the ages of 30 and 49. In addition, while providers worked at multiple practice settings, over 70% practiced medicine at hospital-based clinics. The findings around knowledge, practices, benefits, perceived barriers, and facilitators to the use of EPT are presented.

3.4.1 Knowledge and Practice of EPT

Providers' knowledge regarding EPT spanned a wide range. Five of the respondents had never used EPT. Most of the providers interviewed felt they had some knowledge about the practice of EPT. But several providers noted that they did not know a great deal on the subject. In response to the question "what do you know about EPT?" respondents remarked:

The idea that when somebody is diagnosed with a treatable STI, bacterial STI in particular, that treating their partner as soon as possible will greatly decrease the chance that they will reacquire it. And from a public health perspective the more people you treat…then you'll hopefully reduce the burden in the population (#6, Adolescent Medicine).

I honestly don't know much. Um, and I should have looked it up when I knew that was going to be involved in your study but I didn't (#8, Ob/Gyn).

I wish I knew more to be honest (#14, Internal Medicine).

Several of the providers who asserted a lack of knowledge or a desire to learn more about the practice had actually used EPT in the past or were currently doing so (see Table 3-2 for summary of participants' EPT use). A majority of providers had used EPT previously at least once. Some providers used EPT during their medical training, while others utilized the practice in the past when they worked in other regions or medical settings.

Table 3-2 EPT Use by Study Participants

EPT Use	N=23 (%)
Never Used	5 (21.7%)
Used in Past	7 (30.4%)
Used < 5 Times	4 (17.4%)
Routinely Use	7 (30.4%)

More than one third of those interviewed routinely practiced EPT, using a variety of methods. Most of the providers who used EPT wrote a prescription for their patient's partner. Others doubled their patient's prescription. Several physicians noted that if the patient's partner was in the room with them they were fine with treating him. Others stated that they were more willing to provide EPT if their patient explicitly told them that their partner was uninsured or did not have access to health care. In addition, a number of providers indicated that they preferred to speak to their patient's partner on the phone if they were going to provide them with treatment.

You know, in some ways if I can actually have a conversation with the partner on the phone… And say you know, okay, this is the medicine, have you taken this medicine before, can I tell you about the side effects and, you know, do you have any allergies to any medicines. And if they

sort of say no, I mean, then, that's essentially similar to when I would be in a patient visit (#19, Ob/Gyn)

So I thought if I call you and I establish a phone relationship I could argue that I established that you are now my patient (#10, Adolescent Medicine).

That was my way of kind of like hearing a voice, of kinda getting a little feel for the tone of voice, everything, asking if they understood what was going on and their role in this. Ask if they understood the antibiotics, do you have allergies…it's like a thirty, sixty second conversation (#6, Adolescent Medicine).

While many health care providers who participated in this study actually used EPT, the practice was not something they often discussed with their colleagues. In general, providers felt that using EPT was an individual decision that was made by individual providers. When asked if they knew if their colleagues practiced EPT, responses included:

Yeah, so it depends on the provider and how comfortable they are with things (#13, Family Medicine)

And I don't know, I have to say, what my colleagues do (#10, Adolescent Medicine).

It's nothing, it's not anything that we've ever talked about. So I am not sure (#17, Internal Medicine)

3.4.2 Benefits of EPT

All of the providers interviewed believed that EPT would benefit their patients. Central reasons for this are that repeat infection with chlamydia was an issue for patients as was the futility of treating their patients without treating their partner(s). Several providers also stated that there was a need for better ways to treat patients' partners and that they felt that the standard practice of sending partners to the health department was a barrier to treatment. Another noted benefit of EPT was making access to treatment easier for partners.

I think a faster way to ensure your patient does not get reinfected again, to get their partner treated, which is like most important to us, that our women do not continually get reinfected. So I think it's just kind of a nice, efficient way to at least hopefully get your patient to be proactive about her health (#3, Ob/Gyn).

And I think that, you know, men don't have a similar time in their lives when they have good access to care, like women do when they are pregnant. So I think that it frequently, like you know, if their male partner doesn't have insurance or doesn't have, you know, good transportation options and things like that. I think that….it's a good option (#2, Ob/Gyn)

I think it also is kind of you know, one is the reinfection part of it and then the other is just, like ease of medicine practice. Like I think a lot of times we make it more difficult for, you know, medical things to be accomplished (#7, Adolescent Medicine).

3.4.3 Perceived Barriers to using EPT

Respondents identified numerous barriers to using EPT to treat the partners of patients infected with chlamydia. One issue that providers had a wide range of perceptions about was whether or not EPT was permissible in the state of Pennsylvania. Some providers knew, some were unsure, others such as the obstetrician/gynecologists residents interviewed were told by their attendings that it was not allowed. In addition, many providers were also unsure or unaware of their worksite's practice or institutional policies or guidelines around EPT.

I mean, yeah, I think unfortunately our education regarding whether it's permissible or not is lacking and I thought it was just like illegal. And I don't know who I heard that from but obviously as you have heard from me, I see people do it (#3, Ob/Gyn).

I went to medical school in Ohio and then I came here for residency. And I got mixed messages, so I never, I remember not knowing whether or not it was allowable or not (#15, Internal Medicine).

I believe it is legal in Pennsylvania and should be the standard of care here in Pennsylvania (#4, Internal medicine).

I don't think we have a policy regarding it (#17, Internal Medicine).

Liability is an issue that was discussed in all but 2 of the interviews. Not knowing the partner's medical history and allergies were large concerns related to liability. Another issue

was not being able to follow up with their patient's partner to ensure that there were no complications or problems. Concerns regarding liability did not differ based on provider demographics.

I don't want to, certainly don't want any legal trouble or somebody suing me or a parent coming after me or something. Which could happen (#9, Family Medicine).

I think especially at the VA, my gosh, I just feel like we don't know, am I going to go to VA jail because I've been prescribing meds for someone who is not a veteran? I mean, I don't know (#15, Internal Medicine).

So safety issue, liability issue, because they are not a patient of ours, you know, we as a physician, you are held liable for any script you write, any refill you make, even if it's not your patient. So there is some fear there. I think we live in a fairly litigious society unfortunately (#13, Family Medicine).

While the majority of providers expressed some fears over being sued or being somehow liable for providing EPT, several providers asserted that risk of liability was outweighed by the benefits of the practice.

I mean, I think it's very legitimate but like I told you before, I mean if you clear the allergies, in general most people are very glad to have this available to them from their partner. So I think

there's maybe, there's a one percent like part of my mind that fears it. But in general I think it's very benign, yeah (#3, Ob/Gyn).

Kids don't really sue doctors and they particularly don't do it around issues like their chlamydia infections. I think in terms of, and so if my choice were between doing that and not treating someone, you know, I would rather take that risk (#11 Adolescent Medicine).

Providers clearly stressed their anxiety around providing antibiotics and potential side effects or reactions from the medication. Interestingly, when asked specifically about allergies to Azithromycin, the medication recommended for chlamydia treatment, the majority of providers asserted that they did not have serious worries about that medication.

I think there's not a lot of, I have not seen a ton of allergy, it's not a particularly allergenic kind of medicine (#11, Adolescent Medicine).

I mean, I think there is definitely people who have allergic reactions, who have allergies to Azithromycin, there are some people. But it's not common (#22, Internal Medicine).

Providers also asserted that providing counseling for patients was important to them, and provision of EPT did not enable them to properly counsel patients' partners about their infection and sexual health behaviors. Another concern regarding provision of treatment was the type of relationship the patient had with her partner. One more issue that was considered a barrier by

several providers was not being certain that their patients would be able to effectively give their partners the treatment.

Just having no sense of what they'll do. Will they follow through, will they take it seriously, will they believe their partner? (#23, Family Medicine).

But then I think it also, probably, if you think about it, especially in our population, probably is a bit of a double edged sword, because then you are putting a lot of the kind of the onus on the patient to be the one to treat her partner. And I think sometimes I mean, obviously it's kind of a, a sensitive topic for partners to discuss. Especially when one is diagnosed with an STD. But I think that there is probably possible domestic violence issues and things like that. So I feel like you would probably have to get a good assessment of that (#2, Ob/Gyn).

A barrier unique to obstetrician/gynecologists was noted: for 4 of the 7 obstetrician/gynecologists interviewed an obstacle with regards to using EPT was treating a population—men—who would never be their patients. However, this was not considered to be a barrier by the three other obstetrician/gynecologists who were interviewed.

So I think, I think one of the barriers is ob/gyns' comfort level for perhaps writing prescriptions for a man that they haven't examined, don't know, isn't ever really going to be their patient (#1, Ob/Gyn).

Right now we exclusively treat women and so we feel very hesitant to write prescriptions for a population we never see or treat (#5, Ob/Gyn).

Especially you know, knowing that your name is associated with gynecology on a man's prescription (#19, Ob/Gyn).

Yet another barrier discussed by several providers was electronic prescriptions. Access to an individual's electronic medical records is required in order to provide a prescription and this is not possible for a patient who is not theirs. While doubling the patient's dose was mentioned as a way around this barrier, providers were not sure that this would be feasible or the best way to provide expedited treatment.

3.4.4 Facilitators to using EPT

The physicians and nurse practitioners interviewed provided many suggestions for facilitating the use of EPT. Some providers believed that there were many barriers to overcome in order to facilitate the use of EPT. Others asserted that clarifying one or two issues would make utilizing the practice easy and simple. Some of the factors included clarifying matters of liability, providing education, creating guidelines and establishing norms regarding the use of EPT.

I think the most important thing is to clear up the liability issue (#10, Adolescent Medicine).

I think we would have to attack the medical legal barriers (#21, Ob/Gyn).

I think if there were, there is obviously the Good Samaritan Act. So there's the line of you are trying to do good. And if some bad outcome comes from that, that you are sort of ah, you have some immunity (#13, Family Medicine).

Like a little advertising campaign or something that, I don't know, somehow putting the word out that it's okay to do, that it's encouraged by this clinic or by the supervisors (#9, Family Medicine).

So having just like a lecture about it and kind of brainstorming, you know, brainstorm with, with the other, everyone else, like how we can incorporate it into our practice (#7, Adolescent Medicine).

I think for me, being a more novice clinician, I think having someone who had more experience tell me that they've done it… knowing that there is a track record there and that people that I trust and that I work with do it (#18, Internal Medicine).

Or if there was a general consensus on what your partners do or people who also practice that you identify with, that are in your, in your institution or your region. Like if there was some kind of consensus about what everyone does (#22, Internal Medicine).

Several providers also discussed other strategies that could potentially facilitate the use of EPT. One physician noted that including prompts to use EPT in electronic medical records would be an effective means to promote its use. Other providers believed that having antibiotics in the

office to simply hand out to patients would make the practice of EPT much more feasible. Another physician asserted that having posters and checklists about EPT placed in clinics and practices would facilitate its use.

3.5 DISCUSSION

To our knowledge, this is the first study to qualitatively examine health care providers' perspectives on EPT in the United States of America. The results of this study show a wide range of knowledge of EPT, high perceived benefits of EPT, in addition to multiple, complex barriers and potential facilitators to the practice.

Overall, participants knew a great deal about EPT. While some participants perceived that their levels of knowledge were low, in fact, all of the providers interviewed could articulate some notion of EPT. Moreover, the majority of providers currently use or had used EPT at some point during their careers. Providers employed methods such as doubling prescriptions or writing out separate prescriptions to provide treatment to their patient's partner(s). In addition, providers were largely positive regarding using EPT. There were some differences regarding perceptions of EPT by provider specialty. In general, adolescent medicine providers were more knowledgeable and comfortable using EPT than other providers. Obstetrician/gynecologists were the only providers who asserted that treating the male partners of their patients was a barrier to using EPT. However, all participants felt that EPT would be or was a beneficial practice for their patients and would help reduce rates of reinfection with chlamydia for their patients and potentially others in the community.

Most providers were not only unsure or unaware of their colleagues' practices, but also had limited knowledge regarding institutional policies around EPT. This indicates that there is a need to change norms about the use of EPT. Several providers articulated that knowing that their colleagues or more experienced physicians practiced EPT would enable them to feel more comfortable using it. Speaking on the phone to patients' partners was also a practice that made several providers feel more comfortable using EPT. The desire to speak on the phone with patients' partners is directly related to the issue of establishing a doctor-patient relationship. It is evident that is it important for providers to find a way to counsel patients' partners on issues around STDs and EPT and speaking to them on the phone was considered the most effective means to do so.

Providers interviewed had concerns about giving medication to people whose medical history was unknown and they feared the possibility of allergic reactions. One significant finding from the study is that fear of allergies is a more diffuse or even hypothetical concern. When specifically asked about allergic reactions to Azithromycin, the medication recommended for treatment of chlamydia, most providers asserted that it was not a medication that usually caused allergic reactions in their patients. Provider education regarding EPT could highlight research about Azithromycin and clearly emphasize the safety of the drug.

In terms of facilitating the use of EPT, the single most important factor to all providers was clarifying liability. Currently, the legal status of EPT is ambiguous in the state of Pennsylvania. The CDC notes that the practice is permissible in the state; however, there are also no laws expressly authorizing the practice (Centers for Disease Control and Prevention). In 23 states, there are laws in place that expressly authorize the use of EPT for the treatment of chlamydia (R Cramer, Haderxhanaj, Chesson, & Leichliter, 2013). Research has shown that in

California, the first state where EPT was expressly authorized in 2001, EPT is routinely used by over 50% of physicians and nurse practitioners and by over 75% of family planning providers (Jotblad et al., 2012). While in this interview sample about a third of providers do routinely use EPT, it is likely that clearer policies regarding EPT use would increase uptake of practice. Another topic mentioned was the need for education about EPT. It is likely that implementing a policy to expressly authorize the practice in addition to provider education would be an effective means to increase the utilization of EPT.

There are several limitations to this study. The findings of this study lack external validity and are not be generalizable to providers from other regions. The study utilized a purposive sample; providers who participated were self-selecting and may have had an interest in the subject. A strength of this study is the participation of providers from multiple specialties including adolescent medicine, internal medicine, family medicine, and obstetrics/gynecology. Also, these providers practiced medicine in various medical settings such as hospital-based clinics, community-based clinics and primary care practices. As a result, this study captured a wide range of perspectives.

It is clear that many providers utilize EPT and believe the practice is beneficial for their patients. However, health care providers face a variety of barriers that make routine and widespread use of this practice a challenge. Policy changes at the state level are essential in order to make EPT a widely used practice. In addition, education regarding the practice as well as institutional support is also necessary in order to promote the use of EPT.

4.0 EXPEDITED PARTNER THERAPY AND INTIMATE PARTNER VIOLENCE: A QUALITATIVE STUDY

Rosenfeld, E. A.[1], Marx, J. [1],, Terry, M. A. [1], Stall, R. [1], & Miller, E.[2]

[1] Department of Behavioral and Community Health Sciences, Graduate School of Public Health; [2] Division of Adolescent Medicine, Children's Hospital of Pittsburgh of UPMC, University of Pittsburgh

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4.1 ABSTRACT

Objectives: Intimate partner violence (IPV) increases the risk of infection and reinfection with sexually transmitted diseases (STDs), and over one third of women experience IPV in their lifetime. Expedited partner therapy (EPT) effectively reduces rates of reinfection with chlamydia and increases the number of partners treated for the infection. The extent to which health care providers who use EPT consider the potential for IPV with their patients is not known. The objective of this qualitative study was to understand health care providers' views on IPV and STDs and their role in addressing IPV when offering EPT to patients.

Methods: Using a purposive sampling strategy to include diverse health care providers who treat young women at risk for chlamydia, 23 semi-structured, in-depth interviews were conducted. Health care providers were asked about their perspectives regarding IPV and partner notification and treatment, specifically provision of EPT.

Results: Many health care providers expressed concern for their patients' safety and believed screening for IPV was needed before provision of EPT, but nearly a third of health care providers had not considered the links between IPV and STDs. Discussions about strategies used to assess for IPV did not include questions about specific behaviors related to IPV and STD risk.

Conclusions: Many providers understand the risk for IPV in the setting of STD treatment. But a significant portion of providers interviewed failed to recognize the link between IPV and STDs, and most did not use screening questions that would directly assess for coercive STD risk.

Provider education is necessary to both increase knowledge and to implement more effective IPV screening practices.

4.2 INTRODUCTION

Intimate partner violence (IPV), emotional, physical or sexual abuse by an intimate partner, increases the risk of infection with sexually transmitted diseases (STDs) (Silverman, Raj, & Clements, 2004; Sommers et al., 2013). Over one third of women experience IPV in their lifetime, with the highest prevalence among women ages 15 to 24 (Black et al., 2011; Silverman et al., 2004). IPV increases risk for STD infection through multiple mechanisms including coercive sex, forced condom nonuse, and threats of violence with condom negotiation (Obstetricians & Gynecologists, 2013; Silverman et al., 2011; Teitelman, Tennille, Bohinski, Jemmott, & Jemmott III, 2011). Additionally, IPV is likely to be a contributor to increased risk for STD reinfection as a result of fear of partner notification and partner refusal to seek treatment (M. Decker et al., 2011).

One approach to reduce rates of reinfection with chlamydia is expedited partner therapy (EPT), a treatment method that does not require sexual partners to undergo screening or medical examination. The most commonly used form of EPT is patient-delivered partner therapy (PDPT) in which the patient receives a prescription or medication to treat the infection for his/her sexual partner(s). A number of randomized controlled trials comparing EPT to standard partner referral have found that EPT reduces rates of reinfection significantly in addition to increasing the number of partners treated for the infection (Golden et al., 2005; Kissinger et al., 2005; Schillinger et al., 2003).

The American College of Obstetrics and Gynecology has underscored the importance of assessing for IPV prior to offering EPT (Obstetricians & Gynecologists, 2012). Given that a third of young women seeking STD testing or treatment report ever experiencing IPV, clinical settings that offer STD testing and treatment (including offering EPT) are key sites for

implementing IPV assessment and counseling as recommended by major health organizations including the Institute of Medicine (M. R. Decker, Silverman, & Raj, 2005; Gee et al., 2011; Institute of Medicine, 2011; Lantz, 2013; Moyer, 2013). However, the extent to which health care providers who use EPT in their practices consider the potential for IPV among their patients is not known. Understanding how providers recognize the impact of IPV on STD risk in addition to the strategies providers use to assess their patients' safety in the context of offering STD treatment, including EPT, is needed to guide the safe integration of EPT into routine clinical practice. In a qualitative study focused on health care providers' use of EPT and barriers for EPT implementation to treat chlamydia, we explored providers' views on IPV and STDs and addressing IPV when offering EPT to patients.

4.3 METHODS

A purposive sample of health care providers from adolescent medicine, internal medicine, family medicine, and obstetrics/gynecology departments was recruited from a large health care system to take part in open-ended in-depth interviews. The providers were recruited via email or referred by colleagues to participate in this study. Providers were asked about their perspectives regarding partner notification and treatment, specifically provision of EPT, as well as their experiences and concerns regarding addressing IPV in the context of STD treatment. The University of Pittsburgh Institutional Review Board (IRB) reviewed this study and determined that it was an exempt study.

The primary investigator conducted 23 interviews; the interviews took 15 to 30 minutes, and providers received $50 as compensation for their participation. Participants also completed a

brief demographic survey (i.e., sex, age, years practicing medicine, specialty, profession, and practice setting). Interviews were audio recorded, transcribed, and uploaded into Atlas.ti v. 6 software program. Two independent coders coded the transcripts using a thematic analysis approach (Boyatzis, 1998). The initial codebook was created after the completion of the first 5 interviews, and more codes were added after reviewing additional interviews. The 2 coders coded the transcripts using the finalized codebook; the coders discussed any discrepancies and no significant differences emerged. Content saturation was achieved around the key themes related to IPV and partner treatment after 15 interviews.

4.4 RESULTS

Of the 23 health care providers who participated in the study, 91% were physicians and 9% were nurse practitioners. Close to 35% of providers interviewed practiced internal medicine, 30% practiced obstetrics/gynecology, 22% practiced adolescent medicine, and 13% practiced family medicine. Over 90% of the providers were female and were between the ages of 30 and 49. The majority of providers, over 70%, practiced medicine at hospital-based clinics.

Several key themes emerged in the interviews, including concerns about the threat of violence for their patients influencing their provision of EPT, limited recognition of IPV, and reasons that providers may not address IPV. In addition, the need for improved training around IPV assessment and intervention in the context of STD treatment was another recurrent theme.

4.4.1 Provider Perspectives on IPV

Providers reported a wide range of perspectives and experiences related to assessing for IPV in their clinical practices; some providers had never considered IPV in the context of STD treatment, while other providers noted that fear of the threat of violence for their patients was a major reason providers did not provide EPT. In addition, several providers noted that while IPV was a potential concern related to EPT, it is also important to consider with partner notification of infection with STDs in general. When asked if they had any fears or concerns about IPV, respondents remarked:

You know, when we ask our patients, when we counsel them to have their partner treated and they say yes, yeah, we will do that, I think that sometimes when they don't, and they get reinfected, it's not because they were careless or wanted to get chlamydia again. I think that what's the harm in having that discussion—they either just forgot because chlamydia is asymptomatic or was not a concern for them or that there is a real threat of intimate partner violence (#5, Ob/Gyn).

I mean that would be one, one concern, sure….it's not the first thing I think about….. But it's definitely a consideration and it's definitely something that I would want to talk with the patient about in my discussion about whether she feels comfortable disclosing the information. I mean, that would be, that would be the time that I would talk to her about it (#22, Internal Medicine).

Yeah, and I mean the same concern is true for non-EPT, right? The concern really arises from discussion of this STD….That's between these two partners and whether or not there's an issue of violence there….The treatment piece of it is not really affected by it directly. It's more about the raising the question of there's now a sexually transmitted infection and where did it come from and whether or not that's going to create violence (#21, Ob/Gyn).

Do I have fears of violence? I would say I don't think of putting the pills in her hand as something that is more or less likely to create violence than the challenge of disclosing and having to discuss an infection, which is always a challenge in a relationship (#4, Internal Medicine).

Several providers noted that concerns about IPV prevent them from using EPT as a form of STD treatment for their patients. In addition, the importance of addressing the threat of IPV when providing EPT was stressed, given the potential of harm to patients.

So certainly if there was a concern for violence then it makes EPT not really feasible...Because you wouldn't want to put your patients at risk there. So that needs to be addressed before you just go telling patients to do this (#21, Ob/Gyn).

And so I might get a little bit of a gauge and if any of those things had flagged earlier in the encounter. You know, then I might sort of explore that a little bit more with her….And if, you know, she had concerns that way, that might be, if she felt like telling her partner about her

sexually transmitted infection, that it would increase her likelihood of, you know, experiencing violence, you know, I might be less likely to do it (#18, Internal Medicine).

But then I think it also, probably, if you think about it, especially in our population, probably is a bit of a double edged sword, because then you are putting a lot of the kind of the onus on the patient to be the one to treat her partner. And I think sometimes, I mean, obviously it's kind of a, a sensitive topic for partners to discuss, especially when one is diagnosed with an STD. But I think that there is probably possible domestic violence issues and things like that. So I feel like you would probably have to get a good assessment of that (#2, Ob/Gyn).

One provider did assert that fears of IPV should not eclipse the need for the use of EPT:

With the rise of chlamydia, violence to the partner is important to take into account, but I think that we can't lose the forest for the trees. I think we have to safeguard against violence but if it keeps us from doing expedited partner therapy….We are going to miss a lot of women and a lot of women are going to come back reinfected. And so I think that's important (#10 Adolescent, Medicine).

4.4.2 Lack of Recognition of the role of IPV

Almost one third of the providers interviewed did not believe violence was a large concern for their patients or ever think about the subject. When asked if they had fears about the potential

for violence when a patient provides medication or a prescription for her partner to treat chlamydia, respondents replied:

If she told him and he was concerned about, you know, infidelity or unfaithfulness I could see how that could precipitate violence of some sort. But it hasn't, it's embarrassing to say, it hasn't really crossed my mind (#1, Ob/Gyn).

I don't. And it has not really crossed my mind…. So I have not had an issue where someone was afraid to tell her partner that she was infected, thinking like maybe he thought she was promiscuous. So I have not had the issue come up (#3, Ob/Gyn).

I don't know, you know, I haven't thought about it. I don't, my guess is, and I have no statistics to back it up, that if a woman was already in an abusive relationship…I doubt that she would tell them (#10 Adolescent, Medicine).

Some providers were not aware of the links between IPV and STD risk and treatment as well as partner notification, and pointed to the need to be more cognizant of safety concerns. For example, a physician expressed her concern about violence but realized she had never made the connection about providing patients safe ways to talk to their partners. She stated:

But I've never had a conversation with a patient about how, like, tips and tricks on how to tell your partner you have chlamydia…. I've never thought about that before. And I think it's good

that you and I are talking about that today because it'll definitely come in to my mind the next time I am talking about this (#8, Ob/Gyn).

4.4.3 Strategies for IPV assessment

IPV assessment practices conducted by providers also varied. In general, providers asked similar types of questions around IPV.

I ask like if they feel safe in their relationship, if they feel pressured or, or, you know, if they felt pressure to have sex or to do something they didn't want to do, or touched inappropriately…. And then I'll kinda ask them if they give this prescription to their partner, like, what do they think will happen…. you know, what will be their reaction, that kind of stuff (#7, Adolescent Medicine).

For every woman that I am seeing in clinic…. Well, I usually ask things like, you know, tell me about your relationship, you know do you feel safe at home…. Has there ever been a time where you felt unsafe or is [sic] *there ever been a time when you felt threatened…. So I usually ask those types of questions* (#18, Internal Medicine).

However, several providers, when explaining their screening process, asserted that they did not believe that they had effective means to determine the safety of their patients.

And I always sort of ask what their contraceptive sexual issues are and then probably about once a year I ask them about, like, their relationship and you know, if they are active and do they feel safe and blah, blah, blah… And actually I don't think there's a great, they haven't determined what's the best way to ask that (#16, Internal Medicine).

Well, we ask them if they are safe….That's, that's standard…Have they ever been physically, emotionally abused or molested in any way, if they feel safe in their home, in their environment with their partner. I mean, we ask. Most people don't tell us… Because they, the nature of it they won't tell us if something has happened (#23, Family Medicine).

Providers did not report asking patients directly about whether there is coercive sexual risk that is contributing to their infection. In addition, none of the screening questions the providers described assess for forced condom nonuse, forced sex or other forms of sexual coercion.

4.4.4 Supports Needed to Address IPV

A number of participants also underscored the need to train providers to screen for IPV. Many noted that supports to address IPV in the context of partner notification and use of EPT are limited.

You know, I think we need to help clinicians deal with the violence issue (#10 Adolescent, Medicine).

I think that we would try, I mean, I think we do try very hard to make sure that there is not intimate partner violence and that they are in a safe situation… I don't think that we get, like, a lot of training on [IPV] (#5, Ob/Gyn).

Some providers had more awareness and training around partner notification of STDs. For instance, adolescent medicine providers were more cognizant of IPV and discussed tools available, such as websites, to help with anonymous partner notification.

And so you know, we are lucky in where I'm working we have relationships with our patients over time so generally we might have a feel for that [IPV]. *But we are also trained to screen for it and we have resources to connect people, young women with, to help with that* (#6, Adolescent Medicine).

There is, I know, there is a website and stuff too that you can go to, to have them log on, if they feel uncomfortable kind of telling their partner, giving their partner the prescription (#7, Adolescent Medicine).

4.5 DISCUSSION

To our knowledge, this is the first study to qualitatively examine health care providers' perspectives on IPV in the context of partner notification of an STD, specifically chlamydia, and use of EPT. While many providers reported concern for their patients' safety and believed screening for IPV was needed before provision of EPT, a large proportion of the providers had not considered the links between IPV and STDs. Additionally, discussions about strategies used to assess for IPV did not include questions about specific behaviors related to IPV in the context of coercive sex.

A majority of health care providers believed that IPV was not only a potential issue related to provision of EPT but also for partner notification of an infection more generally. Several of the providers interviewed had concerns about giving medication or prescriptions to patients to give to their partners without knowing if it would be safe for their patients to do so. In fact, a few participants asserted that fears about IPV would prevent them from providing EPT to their patients if they felt their patient would potentially be placed in a dangerous situation.

Given the high rates of IPV and research that has established the link between IPV and infection with STDs, it is troubling that nearly a third of the providers interviewed voiced no worries or concerns about violence. This lack of recognition of the role of IPV in increasing women's risk for reinfection highlights the need for both provider education and training. In addition, when asked about the types of screening used to assess for IPV, none of the providers reported doing any targeted assessment of coercive STD risk, including asking questions about partner's forced condom nonuse and refusal to seek treatment.

Some differences regarding knowledge of IPV and partner notification emerged by provider specialty. In general, adolescent medicine providers were more knowledgeable than

others about resources and tools available to deal with IPV and to aid patients in anonymously notifying their partners of their STD status.

Providers clearly need more training about how to talk to their patients about IPV. It is known that there are multiple barriers for providers to addressing IPV in the clinical setting. These barriers to screening for violence include provider discomfort, lack of self-efficacy, and a lack of time (Elliott et al., 2002). In addition, providers are more likely to screen for IPV when patients come in with physical injuries (Rodriguez, Bauer, McLoughlin, & Grumbach, 1999). From this study it is clear that providers have knowledge barriers as well as limited skills in targeted assessment of IPV. The screening questions utilized by providers around IPV are vague and certainly do not get at the specific behaviors related to IPV in the context of STD risk. Health care providers not only need training about the types of questions to ask but also effective ways to reach their patients. The American College of Obstetrics and Gynecology recommends providers have resources on hand, including community resources and patient education cards on IPV and reproductive coercion. It also provides examples of screening questions to ask patients of reproductive age (Obstetricians & Gynecologists, 2012).

Several organizations recommend assessing patients for IPV in clinical settings that offer STD testing and treatment. However, the Centers for Disease Control and Prevention do not include any recommendations related to IPV in their EPT guidelines (Centers for Disease Control and Prevention, 2010). Expanding their recommendations to include information about IPV would be an important way to increase knowledge about the risk for violence when using EPT.

There are several limitations to this study. As an exploratory study with a convenience sample of health care providers, findings are not generalizable to providers from other regions

and lack external validity. The study relied on a self-selected pool of providers willing to take the time to discuss issues around partner notification of STDs and EPT. Strengths of this study are that the providers worked in diverse clinical settings and came from multiple specialties (adolescent medicine, internal medicine, family medicine, and obstetrics/gynecology).

Many providers understand the risk for IPV in the setting of STD treatment. Yet even in this small sample, a significant portion of providers interviewed failed to recognize the link between IPV and STDs, and most did not use screening questions that would directly assess for coercive STD risk. It is quite clear that provider education is necessary to both increase knowledge and to implement more effective IPV screening practices.

5.0 PROVIDERS' PERSPECTIVES ON EXPEDITED PARTNER THERAPY FOR CHLAMYDIAL INFECTIONS: A PILOT SURVEY

Rosenfeld, E. A.[1], Marx, J. [1], Terry, M. A. [1], Stall, R. [1], & Miller, E.[2]

[1]Department of Behavioral and Community Health Sciences, Graduate School of Public Health; [2]Division of Adolescent Medicine, Children's Hospital of Pittsburgh of UPMC, University of Pittsburgh

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5.1 ABSTRACT

Objectives: There is a lack of research on and understanding of health care providers' use of and attitudes toward expedited partner therapy (EPT) in a state where the policies around EPT are ambiguous**.** The objective of this study was to understand if and how providers use EPT, if knowledge of EPT and specific demographic factors contribute to increased use of EPT, assess provider knowledge of the legal status of EPT and factors associated with that knowledge, learn about providers attitudes to EPT and factors associated with positive attitudes, and to describe barriers and facilitators to the use of EPT.

Methods: The investigators developed a survey informed by a previous qualitative study they conducted about EPT. From March 31 to May 4, 2014, an online survey was distributed via email to a convenience sample of health care providers from diverse disciplines who treat young women at risk for chlamydia. A total of 112 providers completed the survey.

Results: Knowledge of EPT was associated with use of EPT (OR = 2.67; 95% CI 1.16 to 6.17; p-value =0.021). Those who said no and don't know to whether their institution had guidelines for EPT were more likely to use EPT than those who answered yes (OR 8.34, 95% CI 1.51 to 46.16, p-value = 0.015; OR 5.66, 95% CI 1.42 to 36. 47, p-value =0.017). Females were 3 times more likely to be knowledgeable of the legal status of EPT than their male counterparts (OR 3.04, 95% CI 1.04 to 8.84, p-value = 0.042). Knowledge of EPT was associated with more positive attitudes about the practice (β= .274, 95 CI 0.55 to 2.72, p-value = 0.003).

Conclusions: Knowledge of the practice of EPT is the single most important factor associated with using EPT. Clarity regarding the legality of the process is also needed to increase providers' EPT use. To support and promote the practice of EPT, providers need to be educated about this form of partner therapy.

5.2 INTRODUCTION

Chlamydia is the most common infectious disease in the United States and rates of reinfection with chlamydia are high; research indicates that anywhere from 12 to 20 percent of females become reinfected within a year of their initial infection (Centers for Disease Control and Prevention, 2010; Hosenfeld et al., 2009). One means to combat chlamydia is by using expedited partner therapy (EPT). EPT is a treatment method that does not require sexual partners to undergo screening or medical examination. The most common form of EPT is patient-delivered partner therapy (PDPT) in which the patient gives his/her sexual partner(s) a prescription or medication to treat the infection. EPT has been found to be effective in reducing rates of reinfection and increasing the number of sexual partners treated for the infection (Golden et al., 2005; Kissinger et al., 2005; Schillinger et al., 2003).

However, widespread implementation of this practice has been low. Two factors that impact the uptake of EPT are the lack of funding for the practice and the lack of reimbursement by insurance companies (Golden & Estcourt, 2011). Liability is also large impediment to the use of EPT as providers fear the potential repercussions of treating patients who are not their own (Golden & Estcourt, 2011; Kissinger & Hogben, 2011). One of the primary challenges with the implementation of EPT is that the legal status of the practice varies from state to state in this country (Centers for Disease Control and Prevention). Currently, EPT is expressly permitted for the treatment of chlamydia in 13 states (Centers for Disease Control and Prevention). Research indicates that uptake of EPT is significantly higher in states where EPT is legally endorsed or expressly permitted (Ryan Cramer, Hogben, & Handsfield, 2013; Lee, Dowshen, Paul, Lucien, & Mollen, 2014; Packel et al., 2006). In addition, survey research indicates that demographic factors such as gender, specialty, and number of female patients per week, as well as provider

attitudes and knowledge of EPT, impact the use of EPT (Hsii, Hillard, Yen, & Golden, 2012; Jotblad et al., 2012; Packel et al., 2006).

In the state of Pennsylvania, EPT is considered permissible, but there are no specific laws or policies in place at the state level authorizing the practice of EPT (Bilardi et al., 2010; Centers for Disease Control and Prevention). There is a lack of research on and understanding of health care providers' use of and attitudes toward EPT in a state where the policies around EPT are ambiguous**.** The principal aim of our study was to understand if and how providers use EPT and if knowledge of EPT and specific demographic factors contribute to increased use of EPT. The other aims of the study were to assess provider knowledge of the legal status of EPT and factors associated with that knowledge, learn about providers attitudes to EPT and factors associated with positive attitudes, and describe barriers and facilitators to the use of EPT.

5.3 METHODS

5.3.1 Design

From March 31 to May 4, 2014, an online survey was distributed via email to a convenience sample of health care providers from diverse disciplines, all who would be likely to treat women at risk for chlamydia – obstetrics/gynecology, internal medicine (including medicine/pediatrics), family medicine, and adolescent medicine. Health care providers eligible to participate in the study were physicians, physician assistants and nurse practitioners, including physician trainees (residents and fellows). We distributed an email describing the study to department administrators and chiefs of departments in adolescent medicine, internal medicine, family

medicine, and obstetrics/gynecology departments within a large health care system. The providers to whom the survey was distributed provide care in a range of sites including primary care, community-based, and hospital-based clinics. Participation of colleagues was encouraged with the support of health care providers who had previously participated in formative interviews to inform survey development. The survey questionnaire was distributed to approximately 150 internists, 10 adolescent medicine providers, 225 obstetrician/gynecologists, and 30 family medicine providers. No incentives to participate were provided. The survey instrument took providers between 5 and 10 minutes to complete. The University of Pittsburgh Institutional Review Board (IRB) reviewed this study and determined that it was an exempt study.

The survey questionnaire was reviewed with experts in STD testing and treatment as well as with two health care providers (none of whom participated in the actual survey) to test for understandability and content. In addition, the survey was pilot tested with 5 public health researchers.

5.3.2 Measures

To define the sample of health care providers, demographic items included gender, specialty, age, years out from training, type of clinical practice, care provided, and number of female patients at risk for STDs seen each week.

To assess provider attitudes about EPT, a set of 6 items (Packel et al., 2006) asked providers to rate on a 5-point Likert scale the extent to which they agreed with the following statements about EPT: “helps me provide better care for my patients with chlamydia,” “protects my patients from reinfection,” “is an activity my practice may not get paid for,” “may be dangerous without knowing the partner's medical or allergy history,” “may get me sued,” “may

result in incomplete care for the partner." To represent overall positive attitudes towards EPT use, a composite score was created based on the sum of the 6 attitude items. This scale included 2 items of positive attitude items (scored from 1 to 5, with higher scores representing a more positive attitude towards EPT) and 4 negative items (scored from 1 to 5 with lower scores representing a less positive attitude); the positive attitude questions were reverse coded in order for the scores to be consistent. The Cronbach's alpha for this scale was .53.

There is a gap in knowledge of how EPT is used by providers when the practice is permissible but not legal. Findings from the qualitative study conducted for this dissertation helped to inform the creation of this survey due to the limited research available in literature. The lead investigator designed a series of questions to ask about knowledge of EPT and various barriers and facilitators of EPT based on information garnered from semi-structured, in-depth interviews with health care providers.

The following questions were included in the survey. A single item question asked whether health care providers agree or disagree that they are knowledgeable about the practice of EPT (rated on 5-point Likert scale and later dichotomized as agree/disagree). To assess use of EPT, providers were asked when they diagnose a patient, how often they use EPT. Response items ranged from always to never on a 5-point Likert scale. Respondents who answered anything other than "never" were asked follow-up questions about the most common way they provide EPT, ways they have provided it, and how often they speak to their patient's partners on the phone. A single item question asked about whether health care providers were aware of the law about EPT in state of Pennsylvania. The main outcomes of interest for this study are use of EPT and knowledge of the legal status of EPT in Pennsylvania. For analysis of the variable use of EPT, the Likert scale responses were dichotomized; strongly agree and agree were grouped

and neutral, disagree and strongly disagree were grouped together. Analysis of knowledge of legality EPT was also dichotomized; yes was one group and no and don't know were grouped together.

Providers were also asked if they knew about the EPT protocols or guidelines at the institution where they work and, if they answered yes, they were asked to describe those protocols or guidelines. Two questions asked about providers' perceptions of their colleagues' use of EPT and if they discuss EPT with other providers. For providers who primarily care for women, a question asked if they were comfortable treating males for chlamydia.

A set of 8 items was developed to assess barriers to EPT, and a set of 9 questions was developed to assess facilitators of EPT. Providers were asked to respond to a scale from very concerned to not concerned regarding the following issues surrounding EPT: liability, intimate partner violence, the safety of their patient with regards to partner notification of infection with an STD, the safety of their patient with regards to provision of medication or a prescription to treat their partner for chlamydia, Azithromycin causing allergic reactions, treating a patient who is not their own, not being able to treat all partners of their patient, and their patient not giving the prescription or medication to their partner. Providers were also asked the extent to which they agree or disagree that the following factors facilitate the use of EPT: knowing their colleagues use EPT, clear legal guidelines, consensus in their group, inclusion of EPT in treatment protocol, being able to talk on the phone with their patient's partner, clear institutional guidelines, training about how to provide EPT, training about how to discuss partner notification of an STD with patients, and training about how to talk to patients infected with STDs about intimate partner violence. Finally, the last question on the survey is an open-ended question asking providers to share any additional thoughts they have on EPT.

5.3.3 Statistical Analysis

The primary purpose of this survey was to identify factors associated with providers' use of EPT and knowledge of the legal status of EPT as well as their attitudes about EPT, and to describe barriers and facilitators to the use of EPT. The data were analyzed using SPSS version 21. Descriptive statistics were computed for all variables including demographics, knowledge, attitudes, barriers and facilitators of EPT use. In order to answer the primary aim of the study, associations between demographic factors, knowledge, and attitudes and the outcome variable, use of EPT, were examined. All factors found to be associated with use of EPT were included in a logistic regression model.

To examine the next aim of the study, associations between demographic factors, knowledge, and attitudes and the outcome variable knowledge of the legal status of EPT were computed. All factors found to be associated with knowledge of the legal status of EPT were included in a logistic regression model. To determine which demographic factors were associated with positive attitudes towards EPT, t-tests and ANOVA were used. A linear regression model was used and variables were included in the model if they were found to be associated with the outcome variable, the attitude scale. Alpha at .05 or below was determined to be statistically significant. Finally, the open-ended responses to the last question on the survey were analyzed using a codebook developed by the investigator for the qualitative study on EPT.

5.4 RESULTS

A total of 112 providers completed the survey. The overall response rate was 27% (112 out of 415); the response rate for internal medicine was 32.6% (49 out of 150), 70% (7 out 10) for adolescent medicine, 33% for family medicine (10 out 30), and 20% (45 out 225) for obstetrics/gynecology. The demographics of the participants are presented in Table 1. The majority of participants were physicians (97.3%), were females (69.6%), were currently in residency or fellowship training (42%), practiced medicine at an academic practice (65.2%), provided primary care (46.4%) and saw on average 1 to 10 female patients per week (49.1%). Descriptive statistics on providers' knowledge of their institutional guidelines on EPT, perceptions of colleagues' use of EPT, and discussion of EPT with other providers are presented in Tables 2, 3 and 4.

Table 5-1: Demographic Characteristics of Study Participants

Demographics	N=112 (%)
Age (years)	
<30	26 (23.2%)
30-39	34 (30.4%)
40-49	26 (23.2%)
50-59	16 (14.3%)
60+	10 (8.9%)
Gender	
Male	34 (30.4%)
Female	78 (69.6%)
Specialty	
Adolescent Medicine	7 (6.3%)
Family Medicine	10 (8.9%)
Internal Medicine	49 (43.8%)
Obstetrics/Gynecology	45 (40.2%)
Other	1 (.9%)
Years Practicing Medicine	
In residency training	33 (29.5%)
In fellowship or advanced training	14 (12.5%)
0-5	10 (8.9%)
6-10	11 (9.8%)
11-20	20 (17.9%)
21-30	12 (10.7%)
30+	12 (10.7%)
Profession	
Physician	109 (97.3%)
Nurse Practitioner	3 (2.7%)
Practice Setting (all that apply)	
Private practice	4 (3.6%)
Hospital-Based practice	41 (36.6%)
Academic practice	73 (65.2%)
Teaching clinic	37 (33%)
Community-Based Clinic	14 (12.5%)
Hospital-Based Clinic	21 (18.8%)
Other	4 (3.6%)
Care Provides	
Primary Care	52 (46.4%)
Some Primary Care	48 (42.9%)
Consultative Practice only	12 (10.7%)
Average number of female patients (15 to 25) see per week	
0	13 (11.6%)
1-10	55 (49.1%)
11-20	14 (12.5%)
20+	30 (26.8%)

Table 5-2: Provider Knowledge of Presence of Institution's EPT Guidelines

	N=112 (%)
Yes	12 (10.7%)
No	33 (29.5%)
Don't know	67 (59.8%)

Table 5-3: Provider Perceptions of Colleagues' Use of EPT

	N=112 (%)
Yes	11 (9.8%)
No	45 (40.2%)
Don't know	42 (37.5%)
Not in group practice	14 (12.5%)

Table 5-4: Provider Discussion of EPT with Other Providers

	N=112 (%)
Not at all	52 (46.4%)
Occasionally	54 (48.2%)
Frequently	6 (5.4%)

5.4.1 Use of EPT

Close to 11% of providers always used EPT, with 17% reporting that they usually used it, 1.8% used EPT half of the time and 26.8% sometimes provided EPT. Nearly 44% of providers reported never using EPT. All adolescent and family medicine providers reported using EPT, while only 59.1% of internal medicine providers and 37.8% of obstetrician/gynecologists reported using EPT. For those who used EPT, the most common method of providing EPT was to write a prescription in the patient's partner's name (58.7%). Other methods included doubling their patient's prescription (23.8%) and writing a prescription with no name (3.2%). For those providers who used EPT, more than half (57.1%) never speak to their patient's partner on the

phone when they provide EPT; nearly a third (30.2%) sometimes speak on the phone, and very few reported doing it half of the time (3.2%), usually (6.3%), or always (3.2%).

5.4.2 Factors Associated with Use of EPT

Based on bivariate analyses, the following factors were found to be associated with EPT use: knowledge of EPT, knowledge of institutional guidelines, perception of colleagues' use of EPT, specialty, and 3 EPT attitude questions including, "helps me provide better care for my patients with chlamydia," "protects my patients from reinfection," and "is an activity my practice may not get paid for." Due to limited variability and multicollinearity among several of the factors, only knowledge of EPT and knowledge of institutional guidelines were included in a multivariable logistic regression model. Those who agreed that they were knowledgeable of the practice of EPT were almost 3 times more likely to use EPT compared to those who did not agree that they were knowledgeable (OR = 2.67; 95% CI 1.16 to 6.17; p-value =0.021). Those who said no and don't know to knowing if their institution had guidelines for EPT were more likely to use EPT than those who answered yes (OR 8.34, 95% CI 1.51 to 46.16, p-value = 0.015; OR 5.66, 95% CI 1.42 to 36. 47, p-value =0.017). Those who said yes to knowing their institution's guidelines were given the opportunity to describe the guidelines and 9 respondents provided answers – all stated that their institution did not allow the use of EPT.

5.4.3 Knowledge of the Legal Status of EPT in Pennsylvania

When asked if EPT was permissible but not legally endorsed in the state of Pennsylvania, 60.7% responded that they did not know the legal status of EPT, 7.1% incorrectly responded no, and 32.1% correctly answered yes to this question.

5.4.4 Factors Associated with Knowledge of the Legal Status of EPT in Pennsylvania

The following factors were found to be associated with knowledge of the legal status of EPT: gender, type of care provided, knowledge of institutional guidelines, and discussion of EPT with other providers. Next, we tested the association between these factors in a multivariable logistic regression model. Gender was the only significant factor, with females being 3 times more likely to be knowledgeable of the legal status of EPT than their male counterparts (OR 3.04, 95% CI 1.04 to 8.84, p-value = 0.042).

5.4.5 Attitudes to EPT Use

The majority of providers agreed that EPT would help them provide better care for their patients and prevent their patients from being reinfected with chlamydia (see Table 5). Providers mostly agreed that providing EPT is an activity their practice might not get paid for (72.3%) and also felt that it could be dangerous if they did not know the patient's partner's medical or allergy history (59.8%). More than half agreed that EPT could result in incomplete care for the partner, and only less than a quarter agreed that providing EPT could get them sued.

When looking at overall attitudes towards EPT use (positive attitude scale composite), the mean score for providers in this study was 19.22 (SD=2.91), ranging from 10 to 27, with higher scores representing a more positive attitude toward EPT. A one-way analysis of variance or t-test was used to identify associations between demographic and knowledge variables and the positive attitudes scale. The variables knowledge of EPT and gender were found to be associated with more positive attitudes towards EPT; those who agreed that they were knowledgeable about of EPT had a more positive attitude (M = 19.90) compared to those who did not agree (M = 18.10), (p-value = 0.001). Attitudes also differed by gender, with females having a more positive attitude (M= 19.63) than males (M= 18.29), (p-value = 0.025). Using multivariable linear regression models to test associations between these factors and positive attitudes, we found that knowledge of EPT was the only factor significantly associated with attitudes (β= .274, 95 CI 0.55 to 2.72, p-value = 0.003) and that the association between gender and attitudes was attenuated (p-value = 0.073).

Table 5-5: Agreement with Statements about EPT

	N=112 (%)
Helps me provide better care for my patients with chlamydia	98 (87.5%)
Protects my patients from reinfection	105 (93.8%)
Is an activity my practice may not get paid for	81 (72.3%)
May be dangerous without knowing the partner's medical or allergy history	67 (59.8%)
May get me sued	25 (22.3%)
May result in incomplete care for the partner	61 (54.5%)

5.4.6 Barriers to EPT

Providers answered questions about the extent to which they are concerned about 8 barriers to EPT. Providers were most concerned with the safety of their patient with regards to partner notification of infection with a sexually transmitted disease (48.3%). Providers were also concerned with not being able to treat all partners of their patient (42.9%), intimate partner violence (42%), treating a patient who is not their own (42%), the safety of their patient with regards to provision of medication or a prescription to treat their partner for chlamydia (40.2%) and their patient not giving the prescription or medication to their partner(s) (39.3%). Only 33% of providers were concerned with liability and 31.3% of providers were concerned with Azithromycin causing allergic reactions.

5.4.7 Facilitators of EPT

Providers were asked about the extent to which they agreed about specific factors facilitating the use of EPT. The most important factor reported was having clear legal guidelines about EPT (85.6%). The majority of health care providers agreed that EPT should be included in treatment protocols (83%). They also agreed that clear institutional guidelines about EPT (82.1%), consensus in their group about EPT (80.4%), and training about how to provide EPT (75%) would help facilitate EPT use. Close to 70% of providers agreed that training about how to discuss partner notification of STDs with their patients and training about how to talk to patients infected with STDs about intimate partner violence would assist with the practice of EPT. Finally, over 60% agreed that knowing their colleagues use EPT would be a facilitator, and more

than 50% of providers believed that being able to talk their patient's partner on the phone would support the use of EPT.

The last question on the survey was open-ended, asking providers to share any additional thoughts they have on EPT. Seventeen individuals responded and most of the responses included information regarding facilitators of the practice of EPT:

I just learned last week that EPT was allowed in Pennsylvania. Prior to that we were told we could not order meds for our patient's [sic] *partners. That is why I have never done this here (but frequently did in Texas). I would like to know the state laws/guidelines as to which STI's we can treat the partner and have the blessing of the employer also.*

I trained in a state where EPT was illegal, but when I moved to PA I learned that it was legal here so I started providing it. However I was recently told that it is "not exactly" legal, and so have stopped providing. Clear information of the legality of this would really help!!!

I never really thought about [it]. *Seems like a brilliant idea. I would love to know the legal issues and ethical issues of treating a patient who is not mine.*

Thanks for doing this work! We need a clear directive as EPT is officially allowable in PA but we were told not to do it by UPMC several years ago with no interval updates, so it is unclear.

5.5 DISCUSSION

This study determined EPT use by health care providers and specific factors that contribute to increased use of EPT, provider knowledge of the legal status of EPT and factors associated with that knowledge. In addition, this survey described providers' attitudes to EPT and factors associated with those attitudes, as well as barriers and facilitators to the use of EPT.

Close to half of providers reported never using EPT, and only 10% reported always using EPT, while close to 20% reporting that they usually used it, a little under 2% used EPT half of the time and nearly 27% sometimes provided EPT. These results of EPT use are similar to a national survey about EPT usage conducted more than 10 years ago (Hogben et al., 2005). Survey research conducted in California, a state where EPT has been legally explicitly permitted since 2001, found that EPT is routinely used by over 50% of physicians and nurse practitioners and by over 70% of family planning providers (Hsii et al., 2012; Jotblad et al., 2012). Our survey's findings demonstrate that EPT usage is lower in a state where its use is neither expressly prohibited nor expressly allowed in comparison to a state where the practice is expressly allowed.

All adolescent and family medicine providers reported using EPT, while close to 60% of internal medicine providers and close to 40% of obstetrician/gynecologists reported using EPT. It is evident that there is a difference in the use of EPT by discipline. But, this finding was not statistically supported, as the number of respondents from adolescent medicine and family medicine was too low and a lack of response variability made including specialty in regression models impossible. The only independent associations with use of EPT were knowledge of the practice and knowledge of their institution's EPT guidelines. Those who agreed that they were knowledgeable about the practice of EPT were almost 3 times more likely to use EPT compared

to those who were not knowledgeable. This finding reveals the importance of perceived provider knowledge of EPT. Moreover, this significant factor is modifiable—providers can be taught about the practice of EPT and will likely be willing to utilize this form of partner therapy. It is clear that a critical means to improve uptake of EPT is provider education about the practice. In addition, given that it is likely that providers from different specialties use EPT differently, education materials should be tailored for their target audiences.

Those who said no and those who said don't know to knowing if their institution had guidelines for EPT were more than 8 times and close to 6 times, respectively, more likely to use EPT than those who answered yes. For this sample of providers this finding this actually makes a great deal of sense. Those who answered yes to knowing their institution's guidelines indicated that the institution in which they worked did not allow EPT. This finding demonstrates that providers who are aware of their institution's protocols about EPT actually follow them. As such, efforts need to be made to change institutional policies to allow EPT and make these changes known to health care providers.

In terms of the second outcome of interest, knowledge of the legal status of EPT in Pennsylvania, providers had low levels of knowledge. Fewer than one third of providers correctly answered this question and the majority, over 60%, reported that they did not know the legal status of EPT in the state. Given the unclear nature of the laws around EPT, this finding is not surprising. It is also important to note that knowledge of the legal status of EPT was not found to be associated with the use of EPT. A survey conducted in Arizona found that obstetrician/gynecologists who received information about changes in state laws about EPT were more likely to practice EPT (Taylor et al., 2011). But in Pennsylvania the lack of clarity about

the laws around EPT make providing information on it something that is unlikely to improve usage of the practice.

The only factor significantly independently associated with knowledge of the legal status of EPT in Pennsylvania was gender. Females were 3 times more likely than males to know that EPT is permissible but not legally endorsed in the state of Pennsylvania. The reason for this gap in knowledge is unclear. However, previous survey research has found that female providers are more comfortable screening their patients for chlamydia and discussing sexual health issues in general, and are more knowledgeable about STD risks (Cook et al., 2001; McClure et al., 2006; Torkko et al., 2000; Wiesenfeld et al., 2005).

The majority of providers agreed that EPT would help them provide better care for their patients and prevent their patients from being reinfected with chlamydia, meaning they had largely positive attitudes towards the benefits EPT can provide. Providers mostly agreed, close to 75%, that providing EPT is an activity their practice might not get paid for. This attitude is understandable given that there are no clear regulations about reimbursement for EPT. Cost as a large provider concern is consistent with other studies (Jotblad et al., 2012; Packel et al., 2006). Many providers, nearly 60%, also felt that it could be dangerous if they did not know the patient's partner's medical or allergy history and more than half agreed that EPT could result in incomplete care for the partner. Our survey's results are mostly consistent with provider attitudes found by Packel et al. (2006). But fewer providers in our study (22.3% versus 35.9%) agreed that providing EPT could get them sued (Packel et al., 2006). Liability is often considered a barrier to EPT use (Golden & Estcourt, 2011; Kissinger & Hogben, 2011). However, it is clear that getting sued is not a serious concern for the majority of these providers.

The overall attitude towards EPT use (positive attitude scale composite) mean score for providers in this study was 19.22 (SD=2.91), ranging from 10 to 27, with higher scores representing amore positive attitude toward EPT. We found that knowledge of EPT was the only factor independently significantly associated with attitudes; those who agreed that they were knowledgeable about EPT had a more positive attitude compared to those who did not agree. Those who believe that they know more about EPT think that the practice is something that would be advantageous for their patients. It seems clear that knowledge of EPT makes providers aware of the benefits of the practice.

The most commonly reported barrier for providers, at nearly 50%, to use EPT is the safety of their patient with regards to partner notification of infection with a sexually transmitted disease, and close to 70% of providers agreed that training about how to discuss partner notification of STDs with their patients would facilitate the practice of EPT. Yet while nearly 70% of providers reported that training about how to talk to patients infected with STDs about intimate partner violence would assist with the practice of EPT, only 42% reported that intimate partner violence was a concern with regard to EPT use. It seems likely that social desirability bias influenced providers' agreement that training about IPV would facilitate EPT. Given the established link between partner violence and infection with STDs (Chesson et al., 2011) it is troubling that nearly 60% of providers did not have large concerns about intimate partner violence. Education and guidelines about EPT need to include information and tools for providers to increase their knowledge and skills to deal with intimate partner violence when using EPT.

Fear of liability and allergic reactions to Azithromycin, the antibiotic primarily used to treat chlamydia, were concerns for only about one third of the respondents. This is consistent with the previous qualitative research conducted with health care providers about EPT.

Finally, the most important facilitators of EPT were having clear legal guidelines about the practice, inclusion of EPT in treatment protocols and clear institutional guidelines about EPT. Providers' open-ended responses further reflect the importance of both clear state laws about EPT and institutional guidelines about the practice. There is obvious confusion about what can and cannot be done when it comes to the practice of EPT. Clarity around the regulations of this practice is needed in order to increase the use of EPT.

There are several limitations to this study. The study utilized a convenience sample of providers from within a large health care system in Pittsburgh, PA. The findings from this study lack external validity and are not generalizable to other cities or rural regions in the state. Selection and response bias are other limitation of the survey as the response rate was only 27%. In addition, the vast majority of providers who participated were physicians and thus the survey did not capture the perspectives of nurse practitioners and physicians' assistants. In addition, there were not enough responses from each specialty to include this variable in regression models. Another limitation was the fact that practice setting could not be included in analysis because of the way question was written (choose all that apply).

Findings provide insight into health care providers' use of and perspectives about EPT in a setting where the practice is not expressly permitted. Clarity regarding the legality of the process is needed to increase providers' EPT use. Additionally, knowledge of the practice of EPT is the single most important factor associated with using EPT. To support and promote the practice of EPT, providers need to be educated about this form of partner therapy.

6.0 SUMMARY OF FINDINGS

The aim of this dissertation was to present information about health care providers' perspectives regarding EPT using a mixed method research approach. Through qualitative interviews and an online survey, we garnered a great deal of information about the way in which providers use EPT, their attitudes towards the practice and perceived barriers and facilitators to EPT.

The first study that was conducted used a qualitative approach to gain an in-depth understanding of health care providers' views and opinions about using EPT. A total of 23 interviews were conducted between October and December 2013. The interviews included questions about knowledge, attitudes, experiences with, and barriers and facilitators regarding the use of EPT.

The first article for this dissertation examined providers' views and opinions regarding the use of EPT in a context where EPT is permissible but underutilized. Most of the providers interviewed felt they had some knowledge about the practice of EPT. A majority of providers had used EPT previously at least once, and more than one third of those interviewed routinely practiced EPT, using a variety of strategies. Most of the providers who used EPT wrote a prescription for their patient's partner, while others doubled their patient's prescription. Furthermore, all of the providers interviewed believed that EPT would benefit their patients. Central reasons for this are that repeat infection with chlamydia was noted as a key issue for patients as was the futility of treating patients without treating their partner(s).

Respondents identified numerous barriers to using EPT to treat the partners of patients infected with chlamydia. One issue that providers had a wide range of perceptions about was whether or not EPT was permissible in the state of Pennsylvania. Some providers knew, some were unsure, others such as the obstetrician/gynecology residents interviewed were told by their attendings that it was not allowed. Most providers were not only unsure or unaware of their colleagues' practices, but also had limited knowledge regarding institutional policies around EPT. Several providers stated that knowing that their colleagues or more experienced physicians practiced EPT would enable them to feel more comfortable using it. Liability is an issue that was discussed in all but two of the interviews; not knowing the partners' medical history and allergies were large concerns related to liability. The health care providers interviewed also provided many suggestions that would help facilitate the use of EPT. Some of the factors included clarifying issues of liability, providing education, and creating guidelines and establishing norms regarding EPT.

It is clear that health care providers face a variety of barriers that make routine and widespread use of EPT a challenge. In this interview sample about a third of providers do routinely use EPT. It is likely that clearer policies regarding EPT use would improve uptake of practice. In addition, education regarding the practice as well as institutional support is also necessary in order to promote the use of EPT.

The second article for this dissertation was also based on data from the qualitative interviews. This article explored providers' views on IPV and STDs and addressing IPV in the context of EPT use. Providers reported a wide range of perspectives and experiences related to assessing for IPV in their clinical practices. Some providers had never considered IPV in the context of STD treatment, while other providers noted that fear of the threat of violence for their

patients was a major reason providers did not provide EPT. In addition, several providers noted that while IPV was a potential concern related to EPT, it is also important to consider with partner notification of infection with STDs in general. Several providers asserted that concerns about IPV prevent them from using EPT as a form of STD treatment for their patients given the potential of harm to patients.

However, almost one third of the providers interviewed did not believe violence was a large concern for their patients or ever think about the subject. A number of providers were not aware of the links between IPV and STD risk and treatment as well as partner notification, and pointed to the need to be more cognizant of safety concerns. IPV assessment practices conducted by providers also varied. Providers did not report asking patients directly about whether there is coercive sexual risk that is contributing to their infection, and none of the screening questions the providers described assess for forced condom nonuse, forced sex or any other forms of sexual coercion. A number of participants also underscored the need to train providers to screen for IPV.

To our knowledge, this is the first study to qualitatively examine health care providers' perspectives on IPV in the context of partner notification of an STD, specifically chlamydia, and use of EPT. Many providers reported concern for their patients' safety and believed screening for IPV was needed before provision of EPT. However, a large proportion of the providers had not considered the links between IPV and STDs and most did not use screening questions that would directly assess for coercive STD risk. It is evident that provider education is necessary to both increase knowledge and to implement more effective IPV screening practices.

The third article for this dissertation examined the findings of an investigator developed survey. The aim of this survey was to understand if and how providers use EPT and if

knowledge of EPT and specific demographic factors contribute to increased use of EPT. The other aims of the study were to assess provider knowledge of the legal status of EPT and factors associated with that knowledge, learn about providers attitudes to EPT and factors associated with positive attitudes, and describe barriers and facilitators to the use of EPT. From March 31 to May 4, 2014, this online survey was distributed via email to a convenience sample of health care providers, and a total of 112 providers completed the survey.

Close to half of providers reported never using EPT, and only 10% reported always using EPT, while close to 20% reporting that they usually used it, a little under 2% used EPT half of the time and nearly 27% sometimes provided EPT. Survey research conducted in California, a state where EPT has been legally explicitly permitted since 2001, found that EPT is routinely used by over 50% of physicians and nurse practitioners and by over 70% of family planning providers (Hsii et al., 2012; Jotblad et al., 2012). Our survey's findings demonstrate that EPT usage is lower in a state where its use is neither legally prohibited nor expressly allowed in comparison to a state where the practice is expressly allowed.

In addition, all adolescent and family medicine providers reported using EPT, while close to 60% of internal medicine providers and close to 40% of obstetrician/gynecologists reported using EPT. It is evident that there is a difference in the use of EPT by discipline. The only independent associations with use of EPT were knowledge of the practice and knowledge of their institution's EPT guidelines. Those who agreed that they were knowledgeable of the practice of EPT were almost 3 times more likely to use EPT compared to those that did not agree that they were knowledgeable. This finding reveals the importance of perceived provider knowledge of EPT. Providers can be taught about the practice of EPT and will likely be willing to utilize this form of partner therapy

Those who said no and those who said don't know to whether their institution had guidelines for EPT were more than 8 times and close to 6 times, respectively, more likely to use EPT than those who answered yes. Those who knew their institution's guidelines indicated that the institution in which they worked did not allow EPT. As such, efforts need to be made to change institutional policies to allow EPT and make these changes known to health care providers.

Providers had low levels of knowledge the legal status of EPT in Pennsylvania. Less than one third of providers correctly answered this question and the majority, over 60%, reported that they did not know the legal status of EPT in the state. Given the unclear nature of the law's around EPT, this finding is not surprising. It is also important to note that knowledge of the legal status of EPT was not found to be associated with the use of EPT; in this sample of providers knowing laws is not related to use of EPT. The only factor significantly independently associated with knowledge of the legal status of EPT in Pennsylvania was gender. Females were 3 times more likely than males to know that EPT is permissible, but not legally endorsed in the state of Pennsylvania. However, the reason for this gap in knowledge is unclear.

The majority of providers agreed that EPT would help them provide better care for their patients and prevent their patients from being reinfected with chlamydia. Providers had positive attitudes towards the benefits EPT can provide. We found that knowledge of EPT was the only factor independently significantly associated with attitudes; those that agreed that they were knowledgeable about of EPT had a more positive attitude toward EPT compared to those that did not agree. Those who believe that they know more about EPT think that the practice is something that would be advantageous for their patients. In addition, the majority of respondents

agreed that providing EPT is an activity their practice might not get paid for. This attitude is understandable given that there are no clear regulations about reimbursement for EPT.

The largest reported barrier for providers to use EPT was the safety of their patient with regards to partner notification of infection with a sexually transmitted disease. In addition, the majority of providers agreed that training about how to discuss partner notification of STDs with their patients would facilitate the practice of EPT. Education and guidelines about EPT need to include information and tools for providers to increase their knowledge and skills to deal with IPV when using EPT. For these providers, the most important facilitators of EPT were having clear legal guidelines about the practice, inclusion of EPT in treatment protocols and clear institutional guidelines about EPT. Finally, knowledge of the practice of EPT is the single most important factor associated with using EPT.

The most significant finding from both the qualitative study and the survey is that providers need to be educated about the practice of EPT. Both studies found that most providers did not routinely use EPT but believe the practice is beneficial for patients infected with chlamydia. In addition, from this mixed methods research it is clear that the majority of providers are not aware of or concerned about IPV in the context of EPT use. Health care providers need training and knowledge about IPV screening in order to make EPT a safe and effective. Ultimately, providers need to be educated about this form of partner therapy, and clarity around the regulations of this practice is necessary in order to increase the use of EPT.

7.0 PUBLIC HEALTH IMPLICATIONS AND FUTURE RESEARCH

Chlamydia is the most common STD in the United States and is also the infectious disease most frequently reported to the CDC (Centers for Disease Control and Prevention, 2010). Adolescents and young adults account for half of all STDs but are only one quarter of the sexually active population (Centers for Disease Control and Prevention, 2010). It is clear that chlamydial infections, which cause severe health consequences in women, are neither being controlled nor prevented. Complications from chlamydia are real threats to the fertility and long-term reproductive health of young adults. One way to reach the partners of those infected with chlamydia is EPT, a practice that has the potential to not only greatly reduce rates of reinfection with chlamydia in women, but also reduce overall rates of infection in the population. EPT is an innovative means to deal with partner treatment and has the potential to empower both patients and providers. However, while the research conducted for this dissertation shows that providers are positive about and often use the practice, it also reveals barriers that need to be overcome in order to widely implement EPT.

A great deal of research still needs to be conducted around EPT. Given the results of this mixed methods dissertation, it is clear that one of the most important factors to address around EPT is its the legal status in the state of Pennsylvania. Advocacy work at the state level is necessary in order to create laws to make the practice of EPT not just permissible, but legally endorsed. Recently, in 2012, the National Chlamydia Coalition and Pennsylvania members of

the American Congress of Obstetricians and Gynecologists presented findings around EPT to legislators in Harrisburg (National Coalition of STD Directors 2012). While no legal changes have resulted from these presentations, more advocacy work like this is essential in order to effect change at the policy level.

Policy change at the state level alone will not be enough to increase the clinical use of EPT. If policy change occurs, advocacy work will also need to be conducted with medical institutions, such as UPMC, to find a way to make sure that EPT is expressly allowed at institutions. It is imperative that guidelines and protocols be clearly communicated to all providers who could potentially use EPT. One important means to integrate EPT use at the institutional level is the inclusion of reminders about the practice in electronic medical records. Education materials for health care providers must also be created. It seems apparent from the findings of the qualitative interviews and the survey that providers from different specialties have different perspectives and varying levels of use of EPT. As a result, education materials must be specifically tailored for their target audiences.

In addition, learning more about what information and skills health care providers need in order for their patients to be safe when providing treatment to their partners is vital. Provider education around EPT use must also incorporate information about specific screening questions about IPV and available IPV resources. Efforts need to be made to ensure that EPT recommendations are expanded to include guidelines on IPV screening.

Further survey research around EPT would be beneficial. The pilot survey created for this dissertation should be should be expanded and conducted on a larger scale. More information is needed at the state level because a statewide survey would gain the views of providers from rural regions and other cities in the state of Pennsylvania. Moreover, it is

important to include physician's assistants and nurse practitioners in the sample; these health care providers often deal with young sexually active women and their perspectives have not been often included in survey research on EPT.

It is especially necessary to further investigate insurance coverage of EPT and ways to fund EPT. Currently, there are no standards about reimbursement for EPT, which presents a financial burden for both providers and patients. One potential means to promote coverage of EPT is to have the practice be included as a performance benchmark. As noted in section 1.5, the National Committee for Quality Assurance (NCQA) is a non-profit organization committed to improving health care, included the annual chlamydia screening of sexually active young women aged 16 to 25 years of age as a performance measure for the Effectiveness Data and Information (HEDIS). HEDIS is used by the NCQA to measure the performance of managed care health plans' quality of care; Medicaid and the majority of commercial health plans report health services data to the NCQA (Burstein et al., 2005). The inclusion of annual chlamydia screening for young women as a HEDIS performance measure for health plans significantly increased the rates of screening from 2001 to 2010 (Centers for Disease Control and Prevention, 2012). This policy change was clearly effective method for promoting chlamydia screening. It seems likely that the inclusion of a provision of EPT for women who are diagnosed with chlamydia as a performance measure would encourage health plans to not only cover the cost of EPT, but also encourage its use.

Given the vast potential EPT has for reducing rates of chlamydia in the population, more research needs to be conducted around its use in the MSM population. Currently, EPT is not recommended for MSM (Centers for Disease Control and Prevention, 2010) . However, given the high rates of chlamydia in this population and the increase in risk of acquiring HIV if

infected with chlamydia (Centers for Disease Control and Prevention, 2011), there is a need to rethink this recommendation. There is also the potential for finding a way to use EPT for medications like Truvada or other prevention strategies for HIV.

Another recommendation that should be rethought is the exclusion of sexually active heterosexual men from chlamydia screening recommendations. With the advent of the Affordable Care Act, there is now the potential to integrate young men into the health care system. It seems likely that screening males will be an important way to deal with the infection. Moreover, if men were screened, then EPT could also be more widely used.

EPT should be commonly used. The results of this dissertation show the way in which more research and effort are necessary to promote the use of EPT. It is clear that EPT can greatly improve the sexual health of individuals and with continued research it will be possible for EPT to ultimately become a widespread practice.

APPENDIX A: RECRUITMENT TOOL

Chlamydia is a serious public health issue in the United States. Current efforts to control this infection are clearly insufficient as the rates of chlamydial infections are extremely high with one in four adolescent girls in our region infected. Expedited partner therapy (EPT) involves providing a prescription or medication to patients to give to their sexual partner, and is found to reduce chlamydia reinfection. However, while the Centers for Disease Control and Prevention as well as several other medical organizations support the use of EPT and patients are willing to use EPT, this practice has not yet been widely adopted in clinical settings.

As a health care provider, you are the expert in the work that you perform. We are interested in learning about health care providers' attitudes and beliefs regarding the use of EPT to treat patients with chlamydia. We want to know what you think may be benefits and barriers to this practice as well as any facilitators to increase uptake of EPT.

Please email ear42@pitt.edu or call 412-334-4556 to be a part of this IRB approved research project. We will interview 20 to 30 clinicians. The interviews will be private and anonymous: no names or identifiers will be recorded. The interview should take about 30 minutes. We recognize that you are extremely busy; you will be compensated $50 for your time and effort.

Thank you for your time.

APPENDIX B: DEMOGRAPHIC SURVEY

1. Are you male or female?

- ◯ Female
- ◯ Male

2. What is your age now?

- ◯ <30
- ◯ 30-39
- ◯ 40-49
- ◯ 50-59
- ◯ 60+

3. How many years have you been practicing medicine (including residency)?

- ◯ 0-5
- ◯ 6-10
- ◯ 11-20
- ◯ 21-30
- ◯ 30+

4. What is your profession?

- ○ Nurse Practitioner
- ○ Physician
- ○ Physician Assistant

5. What is your specialty?

- ○ Adolescent Medicine
- ○ Family Medicine
- ○ Internal Medicine
- ○ Obstetrics/Gynecology
- ○ Other (please specify)

6. What type of practice do you primarily work in?

- Primary care
- ☐ Community-based clinic
- ☐ Hospital-based clinic
- ☐ Other (please specify)

APPENDIX C: INTERVIEW GUIDE

Hello, my name is Elian Rosenfeld and I'm a doctoral student at the University of Pittsburgh at the Graduate School of Public Health, in the Department of Behavioral and Community Health Sciences. I am doing a research study on Expedited Partner Therapy (EPT). The purpose of this interview is to learn about your perspectives about EPT—the practice of providing a prescription or medication to patients to give to their sexual partner. As a health care provider, you are the expert in the work that you perform. I am interested in learning about your attitudes and beliefs about using EPT to treat patients with chlamydia. I want to know what you think may be benefits and barriers to this practice. While I have a few specific questions to guide the conversation, our discussion will be causal and I want you to feel free to talk about anything you think is relevant. There are no foreseeable risks to you as a participant in this neither project, nor are there any direct benefits. However, your participation is extremely valued and your participation is voluntary—you can stop the interview at any time. If it is okay with you, I would like to record this conversation. I only record our conversation because I cannot take notes fast enough. There will be no identifiers in the transcripts I type up—everything is anonymous. Please let me know if you have any questions.

1. What type of medicine do you practice?

2. What is your patient population like?

3. What do you know about EPT?

4. How do you feel about the practice of EPT?

5. What do you think are the benefits to using EPT?

6. What do you think are the barriers to using EPT?

7. What do you believe would facilitate the use of EPT?

APPENDIX D: CODEBOOK

BACKGROUND

Traininglocal: Provider comments about training at UPMC or in Pittsburgh

Trainingnotlocal: Provider comments about training outside the Pittsburgh area

Specialityadol: Provider is trained in and practices adolescent medicine

Specialityfamily: Provider is trained in and practices family medicine

Specialiyinternal: Provider is trained in and practices internal medicine

Specialityobgyn: Provider is trained in and practices obstetrics and gynecology

STIsnotissue: STI's are not a large issue in their patient population

KNOWLEDGE, BELIEFS, AND PRACTICES

Knowpresent: Provider feels they know about EPT

Knowlack: Provider feels they do not know much about EPT, even if they do and may have used it

EPTDo: Provider does or has provided patients with EPT

EPTDont: Provider does not and has not provided patients with EPT

EPTnotallowed: Provider is told by attendings that EPT is not allowed or believes that it is not allowed.

EPTcanbedone: Provider has seen colleagues/attendings provide EPT

EPTbeneficial: Feel EPT is a good way to get partners treated and is beneficial for their patients

EPTresearch: Provider wants to learn more about institutional policies about EPT or about EPT in general

Sendtohealthdpt: Normal practice is to recommend partner go great tested at the Allegheny County Health Department.

Barrierstotreat: Provider believes going to health department is a barrier because of stigma or transportation or time issues

Wantpartnertreat: Provider states that they want to find ways to treat the partners of their patients

Usephone: Provider talks to partner on the phone when providing EPT, feels more comfortable being able to talk to partner

IPVconcern: Provider has concerns about the safety of their patient when it comes to partner notification/provision of EPT

IPVnoconcern: Provider does not have concerns about the safety of their patient when it comes to partner notification/provision of EPT

IPVscreen: Have questions and ways to assess and screen patients for IPV and safety

IPVnothought: Provider has not thought about IPV as being an issue for their patients

IPVLacktraining: Provider does not feel that they know enough about how to properly screen patients for IPV and safe notification or needs better ways to do it

Confidentiality: Need for confidential testing and treatment for adolescent patients

BARRIERS

Gudielineslack: Provider does not know about guidelines or recommendations or legality of EPT use

PolicyInstitution: Provider has no knowledge of their institution's policies around EPT

Policypractice: Provider does not know about their practice's policies around EPT

Educationlack: Provider was not taught about EPT use

Liabilityfear: Provider has fears or perceives that fear regarding liability of treating a patient that is not their own is a barrier

Liabiltiynofear: Provider does not fear liability

Time: Provider believes the time it takes to do EPT is an issue

Allergiesfear: Provider fears providing medication for a patient whose allergies they do not know

Azithromycinnofear: Providers do not actually have strong concerns about allergic reactions to azithromycin

Allergiesqtconcern: Provider discusses concern about recent research on azithromycin's impact on the qt interval and other cardiac health for older patients

Notpatient: Provider comments about not feeling comfortable with the whole process of treating a patient not their own; not comfortable treating men who will never be their patient

Insurance: No way to bill for a patient that is not their own or would insurance pay for extra doses.

Patientaccess: Partners do not have access to medical treatment or insurance; may not get care medical care if not seen by providers

Partnertype: Provider comments about patients less likely or not able to give medication/prescription if partner relationship is casual and more likely to give if partner relationship is longer term

Patientcounseling: Provider gives information to partner on medication and infection; follow up with patient to ensure treatment

Patientanger: Provider believes patient anger at partner could cause them to refuse to provide medication/prescription for partner, issues around cheating coming out if they provide EPT

Colleaguesnoknow: Provider doesn't talk to colleagues about EPT, doesn't know what colleagues do

Electronicscripts: Provider states that the use of electronic prescriptions is a barrier to providing EPT as you need access to a person's records or there could be a flag if you provide extra doses to a patient

VApharmacy: All medications for VA patients are prescribed electronically and filled directly by their pharmacy, may not be able provide scripts for nonVA partners or could have issues doubling the dose

Notremember: Providers do not remember to use EPT, not a part of their routine practice

FACILITATORS

Guidelinespresent: Have clear cut guidelines that are made widely accessible and available, clarify liability issues

Education: Have lectures or continuing medical education on EPT and allergies to azithromycin

Phonepartner: Being able to talk to the partner on the phone to discuss allergies, medical history and treatment makes or would make providers feel more comfortable

Dr.Patientrelationship: Having a relationship and knowing their patient helps providers feel more comfortable using EPT

Addprotocol: Include EPT in treatment protocol

Phamarcistrole: Provider believes that pharmacists could play a role in providing EPT

Culture: Creating the norm or a culture of using EPT would facilitate its use among providers and patients

TraindocsEPT: Provider believes residency or new doctors need to be trained by their senior colleagues and shown that EPT should be used and senior clinicians use it

TraindocsIPV: Provider believes doctors need to be taught how to talk to their patients about IPV

APPENDIX E: SURVEY RECRUITMENT TOOL

Dear Department Administrator/Chair,

My name is Elian Rosenfeld and I am a doctoral student in the department of Behavioral and Community Health Sciences at the University of Pittsburgh's Graduate School of Public Health. I am conducting a research study on Expedited Partner Therapy (EPT) entitled, "An Exploratory Study of Health Care Providers' Perspectives on Expedited Partner Therapy to Treat Patients with Chlamydia."

This mixed-methods study seeks to explore the knowledge and perspectives of health care providers regarding offering expedited partner therapy to patients with chlamydia, a sexually transmitted infection that affects a large number of young people in our county. EPT is one of several options available to try to increase the likelihood that partners receive treatment and reduce rates of reinfection. It is critical for us to identify the provider-, patient-, and systems-level factors that contribute to the currently low levels of EPT use. The data from this study will serve as the foundation for my doctoral dissertation and has been approved by the University of Pittsburgh IRB.

I would greatly appreciate if you could send out a web survey I have created about EPT to the physicians, physician's assistants, and nurse practitioners in your department. Below is the link to the survey; if possible, please let me know how many providers you email the survey to.

Please feel free to call or email me with any questions or concerns. Thank you very much for your assistance.

Sincerely,

Elian A. Rosenfeld, MPH, Doctoral Candidate
Department of Behavioral & Community Health Sciences
Graduate School of Public Health, 130 Desoto Street Pittsburgh, PA 15261
Telephone: 412-334-4556
Ear42@pitt.edu

APPENDIX F: SURVEY INSTRUMENT

The purpose of this research study is to inquire about health care providers' attitudes and beliefs regarding Expedited Partner Therapy (EPT). Expedited Partner Therapy does not require sexual partners of patients infected with chlamydia to undergo screening or medical examination; instead the provider gives the patient a prescription or medication to give to her/his sexual partner(s) to treat the infection. As a health care provider, you are the expert in the work that you perform and we are interested in learning about your attitudes and beliefs regarding the use of EPT to treat patients with chlamydia. For this reason, we will be surveying health care providers from a number of different specialties who work at the University of Pittsburgh Medical Center. If you are willing to participate, our questionnaire will ask about background (e.g. age, years practicing medicine), as well as about your attitudes about EPT. This questionnaire should take approximately 10 minutes to complete. There are no foreseeable risks to you as a participant in this project, nor are there any direct benefits. This is an entirely anonymous questionnaire and your responses will not be identifiable in any way. All results will be kept on a secure computer. Your participation is highly valued and is voluntary; you may withdraw at any time. You will not receive any payment for your participation. This IRB approved study is being conducted by Elian Rosenfeld, who can be reached at 412.334.4556 or at ear42@pitt.edu, if you have any questions.

Q1 Are you male or female?

- ❍ Female (1)
- ❍ Male (2)

Q2 What is your age now?
- ❍ (1)
- ❍ 30-39 (2)
- ❍ 40-49 (3)
- ❍ 50-59 (4)
- ❍ 60+ (5)

Q3 How many years have you been providing clinical care beyond residency/clinical training?
- ❍ I am currently in residency training (1)
- ❍ I am currently in a fellowship or advanced clinical training program (2)
- ❍ 0-5 (3)
- ❍ 6-10 (4)
- ❍ 11-20 (5)
- ❍ 21-30 (6)
- ❍ 30+ (7)

Q4 What is your profession?
- ❍ Nurse Practitioner (1)
- ❍ Physician (2)
- ❍ Physician Assistant (3)
- ❍ Other (4) _____

Q5 What is your specialty?
- ❍ Adolescent Medicine (1)
- ❍ Family Medicine (2)
- ❍ Internal Medicine (3)
- ❍ Obstetrics/Gynecology (4)
- ❍ Pediatrics (5)
- ❍ Other (please specify) (6) _____

Q6 What type of practice do you primarily work in? (choose all that apply)
- ❑ Private practice (1)
- ❑ Hospital-based practice (2)
- ❑ Academic practice (3)
- ❑ Teaching clinic (4)
- ❑ Community-based clinic (5)
- ❑ Hospital-based clinic (6)
- ❑ Other (please specify) (7) _____

Q7 Do you provide primary care or preventative health care to your patients?
- ❍ Yes, I am a primary care provider. (1)
- ❍ Yes, I sometimes provide primary care or preventative health for my patients (2)
- ❍ No, I only do consultative practice (no primary care) (3)

Q8 Where did you do your residency/clinical training (or are you doing)?

- ❍ Pittsburgh (1)
- ❍ Other (2) _____

Q9 What is the average number of young female patients (15 to 25 years of age) you see per week?

- ❍ 0 (1)
- ❍ 1-10 (2)
- ❍ 11-20 (3)
- ❍ More than 20 (4)

Q10 Have you diagnosed a case of chlamydia in the past year?

- ❍ Yes (1)
- ❍ No (2)

Q11 Please answer the extent to which you agree or disagree with the following statement: I am knowledgeable about the practice of expedited partner therapy.

- ❍ Strongly agree (1)
- ❍ Agree (2)
- ❍ Neither Agree nor Disagree (3)
- ❍ Disagree (4)
- ❍ Strongly Disagree (5)

Q12 When you diagnose a patient with chlamydia how often do you use expedited partner therapy?

- ❍ Always (1)
- ❍ Usually (2)
- ❍ Half of the time (3)
- ❍ Sometimes (4)
- ❍ Never (5)

If Never Is Selected, Then Skip To Do you know if practice of expedited ...

Q13 What is the most common way that you provide expedited partner therapy?

- ❍ Double my patient's prescription (1)
- ❍ Write a prescription in my patient's partner's name (2)
- ❍ Give a prescription with no name (3)
- ❍ Other (please specify) (4) _____

Q14 What practices have you used to provide expedited partner therapy? (choose all that apply)

- ☐ Double my patient's prescription (1)
- ☐ Write a prescription in my patient's partner's name (2)
- ☐ Give a prescription with no name (3)
- ☐ Other (please specify) (4) _____

Q15 How often do you speak to your patient's partner on the phone when you provide expedited partner therapy?

- ❍ Always (1)
- ❍ Usually (2)
- ❍ Half of the time (3)
- ❍ Sometimes (4)
- ❍ Never (5)

Q16 Is expedited partner therapy permissible but not legally endorsed in the state of Pennsylvania?

- ❍ Yes (1)
- ❍ No (2)
- ❍ Don't know (3)

Q17 Please answer the extent to which you agree or disagree with the following statements about expedited partner therapy for chlamydia.

	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)
Helps me provide better care for my patients with chlamydia (1)	❍	❍	❍	❍	❍
Protects my patients from reinfection (2)	❍	❍	❍	❍	❍
Is an activity my practice may not get paid for (3)	❍	❍	❍	❍	❍
May be dangerous without knowing the partner's medical or allergy history (4)	❍	❍	❍	❍	❍
May get me sued (5)	❍	❍	❍	❍	❍
May result in incomplete care for the partner (6)	❍	❍	❍	❍	❍

Q18 This question is for providers who only care for women. Please answer the extent to which you agree or disagree with the following statement: I am comfortable treating males for chlamydia.

- ❍ I treat men and women (1)
- ❍ Strongly Agree (2)
- ❍ Agree (3)
- ❍ Neither Agree nor Disagree (4)
- ❍ Disagree (5)
- ❍ Strongly Disagree (6)

Q19 Does the institution where you work have protocols or guidelines about expedited partner therapy that you know about?

- ❍ Yes (1)
- ❍ No (2)
- ❍ Don't know (3)

If No Is Selected, Then Skip To If you are in a group practice, d...If Don't know Is Selected, Then Skip To If you are in a group practice, d...

Q20 Please briefly describe the expedited partner therapy protocols or guidelines in the institution where you work.

Q21 If you are in a group practice, do you think the majority of your colleagues practice expedited partner therapy?

- ❍ Yes (1)
- ❍ No (2)
- ❍ Don't know (3)
- ❍ I am not in a group practice (4)

Q22 Do you ever discuss using expedited partner therapy with other providers?

- ❍ Not At All (1)
- ❍ Occasionally (2)
- ❍ Frequently (3)

Q23 Please answer to what extent you are concerned about the following issues with regards to expedited partner therapy for chlamydia.

	Very Concerned (1)	Concerned (2)	Neutral (3)	Somewhat Concerned (4)	Not Concerned (5)
Liability (1)	❍	❍	❍	❍	❍
Intimate Partner Violence (2)	❍	❍	❍	❍	❍
The safety of my patient with regards to partner notification of infection with a sexually transmitted disease (3)	❍	❍	❍	❍	❍
The safety of my patient with regards to provision of medication or a prescription to their partner(s) for treatment of chlamydia (4)	❍	❍	❍	❍	❍
Azithromycin causing allergic reactions (5)	❍	❍	❍	❍	❍
Treating a patient who is not my own (6)	❍	❍	❍	❍	❍
Not being able to treat all partners of my patient (7)	❍	❍	❍	❍	❍
My patient not giving the prescription	❍	❍	❍	❍	❍

or medication to their partner(s) (8)					

Q24 Please answer the extent to which you agree or disagree. These factors facilitate the use of expedited partner therapy:

	Strongly Agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly Disagree (5)
Knowing my colleagues use EPT (1)	❍	❍	❍	❍	❍
Clear legal guidelines about EPT (2)	❍	❍	❍	❍	❍
Consensus in my group about the use of EPT (3)	❍	❍	❍	❍	❍
Inclusion of EPT in treatment protocol (4)	❍	❍	❍	❍	❍
Being able to talk to my patient's partner(s) on the phone (5)	❍	❍	❍	❍	❍
Clear institutional guidelines about EPT (6)	❍	❍	❍	❍	❍
Training about how to provide EPT (7)	❍	❍	❍	❍	❍
Training about how to discuss partner notification of STDs with my patients (8)	❍	❍	❍	❍	❍
Training about how to talk to my patients	❍	❍	❍	❍	❍

infected with STDs about intimate partner violence (9)					

Q25 Please share any additional thoughts you have about expedited partner therapy.

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