Sexually Transmitted Diseases: Implementing a Screening and Prevention Protocol

Patrice Campbell

Touro University, Nevada

In partial fulfillment of the requirements for the

Doctor of Nursing Practice

DNP Project Chair:	Dr. Jessica Grimm
DNP Project Member(s):	Judith Carrion
Date of Submission:	February 22, 2019

Table of Contents

Abstract

Sexually transmitted diseases (STD) are among the most common, preventable infectious diseases nationwide (Centers for Disease Control and Prevention [CDC], 2017). Although there have been numerous educational efforts aimed at reducing the incidence of STDs, the rates of infections continue to rise. Based on a literature review and CDC recommendations, a protocol was developed to standardize care approaches and improve quality patient care. The project consisted of a Power Point presentation that was provided to all stakeholders with information from the CDC about sexually transmitted disease (STD) treatment and prevention. A chi squared analysis was performed to determine if the implementation of an STD screening and prevention protocol affects STD history, treatment and education. The project audit results post implementation showed that 78% of STD treatments were based on the current STD guidelines and 88% of the charts included a patient sexual history. Lastly, the findings indicated that patient education related to STDs was provided in 80% of the charts audited.

Sexually Transmitted Diseases: Implementing a Screening and Prevention Protocol

Sexually transmitted diseases (STD) are among the most common, preventable infectious diseases nationwide (Centers for Disease Control and Prevention [CDC], 2017). Although there have been numerous educational efforts aimed at reducing the incidence of STDs, the rates of infections continue to rise. The Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) provide and support preventative efforts of the issue (CDC, 2017, The World Health Organization [WHO], 2016).

The site of the project was a community-based clinic in Brazos County, Texas. This clinic was a low- income, federally funded clinic that provides women's health services for Brazos County. The primary population included minority women ages 14 and older, and college students ages 17-26. In 2016, Brazos County was ranked 19 out of 25 of the counties with the highest STD rates (Data US: Brazos County, 2015). In 2016, there were 1402 cases of chlamydia and 353 cases of gonorrhea (Data US: Brazos County, 2015). Despite the preventability of STDs, they continue to be an issue in Brazos County. According to the CDC, 10 million new sexually transmitted diseases (STDs) diagnosed each year are among young people aged 15–24 years (CDC, 2016). In 2015, the median age was 23.7, and 26.2% of the population was between the ages of 18-24 (Data US: Brazos County, 2015).

Currently, a standardized approach for the treatment of STDs does not exist. Patients are tested for STDs when they request testing, or present with urinary complaints, abnormal discharge, dyspareunia, or abdominal pain. The lack of a standardized approach created a problem in the clinic because providers are missing potential cases of STDs. A solution to close the gap in quality patient care was to develop a protocol for treatment and prevention to standardize care and improve outcomes.

Background

STD infections are infectious organisms that are transmitted through sexual activity (Healthy People, 2020). Common STDs include *Chlamydia trachomatis* (chlamydia*), Neisseria gonorrhoeae* (gonorrhea), and the human papillomavirus (HPV). STDs are 100% preventable infections. According to the latest data from the CDC, in the United States (U.S.) there are 1.59 million cases of chlamydia, 468,514 cases of gonorrhea, and 40% of women between the ages of 18-59 had genital HPV infection (CDC, 2017).

Brazos County is home of Texas A&M University. The increased incidence of STDs in Brazos County is due to the social and sexual pressures, and dismissal and ignorance of STD risks (O'Sullivan et al, 2010).

Problem Statement

Chlamydia, gonorrhea, and HPV continue to be a rising health care issue amongst sexually active females (CDC, 2017). Currently, in the women's health clinic in Brazos County, STD treatment is provided as a result of positive testing; however, testing for STDs is not standardized. As a result, several women are not being diagnosed. This leads to complications that can be devastating. Currently, there are no formal preventative measures in place to address the prevalence of STDs. The CDC recommends that all sexually active women ages 25 and under, sexually active women aged 25 years and older if at increased risk, and all HIV positive women be tested for chlamydia, and gonorrhea. For HPV, the CDC recommends screening once every 3 years for women ages 21-29, and women 30-65 years of age should be screened every 3 years with cytology, or every 5 years with a combination of cytology and HPV testing (CDC, 2015). To address the lack of documented education, a plan to implement a STD screening and prevention protocol (STDSPP) was provided to all patients during each clinic visit.

Purpose Statement

The purpose of this project was to improve early diagnosis of women infected with STDs in an outpatient women's health clinic by implementing a comprehensive treatment protocol. The program directed providers to appropriate evidence-based practice guidelines regarding STD treatment and prevention. Interventions included screening the urine of all sexually active patients that presented to the clinic for gonorrhea and chlamydia, and screening all women ages 21 and up for HPV every three years, and educating all sexually active patients about STD prevention. The date, results of each screening, and treatment provided was documented under the screening tab in the electronic medical record (EMR), so that it is easily visible to other providers.

Project Question

Will implementing a comprehensive STD screening and prevention protocol (STDSPP) reduce the number of STDs diagnosed and improve early identification of women infected?

Objectives

The DNP Project lead implemented an evidence-based treatment protocol to promote early identification and standardize treatment within the women's health clinic. This protocol may potentially reduce the STD rate for Brazos County. The goals of the implementation are to:

- Develop a comprehensive STDSPP
- Educate all providers in the new STDSPP
- Evaluate the practice of early identification of STDs through pre-and post-intervention chart audits

Review of Literature

During the evidence collection process, a search of the literature on the impact of STDs, prevention, management, recommendations, and issues was carried out using Up-to-date, CINAHL, and Pub Med databases. The specific search terms that provided relevant literature for this review were the following: sexually transmitted diseases, sexually transmitted infection, women, human papillomavirus, chlamydia, gonorrhea, college women, and risk factors. Studies that were greater than 5 years old, and were conducted outside of the U.S. were excluded.

Impact of STDs

STDs impact both the physical and emotional health of patients. Both men and women can be diagnosed with STDs however; women can experience more lasting effects. According to the CDC (2011), a woman's anatomy increases the susceptibility of STDs. The warm, moist, mucous membrane is an ideal passage and harbor for the disease-causing bacteria however; women are less likely to experience symptoms of STDs. When symptoms do occur, women are less likely to seek treatment. Many women confuse the symptoms of vaginal discharge with normal vaginal discharge changes associated with ovulation, breastfeeding, or sexual arousal. Other symptoms, including pruritus, and irritation may be confused with yeast infections. Untreated STDs may result in infertility, ectopic pregnancies, and increased risk for Human Immunodeficiency Virus (HIV). According to Haapa, Suominen, & Paavilainen, (2017), the infected person may experience changes in the quality of life and possible negative views on future sexual relationships, including the fear of contracting another STD, and distrust in partner. In Prevalence of STD, (2016), a study was performed to determine the rate of STD testing amongst adolescents and young adults. The study revealed that only 12% had STD tests in the

past 12 months, and over half of those tested were positive for an STD. Emotional reasons for not being tested included embarrassment and privacy concerns.

Sequela of STDs

Untreated gonorrhea and chlamydial infections can lead to irreversible affects such as pelvic inflammatory disease (PID) and possible secondary malignancies. PID is an inflammation of the endometrium, fallopian tubes, or peritoneum that can be caused by untreated bacterial infections such as chlamydia and gonorrhea. PID can lead to chronic pelvic pain, ectopic pregnancy, and infertility (Ross, 2017). A survey performed in 2013 revealed that 4.4% of sexually active women between the ages of 18-44 reported that they had been diagnosed with PID (Kreisel et al, 2017). In an article written by Chiou, et al (2016), a study was performed to determine if PID increases the risk of cancer of the genitals, bladder, and colon. The study revealed secondary cancer was higher (0.16%) in patients that were diagnosed with PID.

Management and Prevention of STDs

Several studies suggested that strategies should be utilized to prevent STDs. Rietmeijer & Marx, (2017) recommended that assessing risk factors, providing education and counseling about the avoidance of STDs to at-risk individuals, providing vaccinations for those at risk for preventable STDs, identifying both symptomatic and asymptomatic individuals with STDs, following up with infected individuals, and evaluating, treating, and counseling the partners of infected individuals be performed to prevent STDs. Data from Hover, et al (2015) revealed that publicly funded STD clinics were utilized for the prevention and treatment more than family practice clinics due to low costs, ease of appointments, and expert care. According to Spielberg, et al (2014), the integration of online STD education, testing, treatment, and linkage to care may prevent STDs, increase diagnosis and treatment, and increase patient satisfaction. Workowski &

Bolan, (2015) suggested that the focus of the management of STDs should include HPV vaccinations for males and females beginning as early as age 9. Education should focus on barrier methods, reduction of the number of sexual partners, and retesting after treatment of STDs.

Recommendations for the management of STDs include education, prevention through vaccinations, PAP smear screenings, and education, and pharmacological treatment. According to Crockard, (2016), clinics should utilize a multiplex testing system that includes testing urine and genital swabs for bacterial, viral, and protozoa organisms, not just a specific organism. As a result, STDs can be managed and treated more effectively.

The literature review revealed that STDs have the capability of impacting patient both physically and emotionally, and can produce the lasting effects of chronic pain, ectopic pregnancy, and infertility. STDs should be managed, treated and prevention through multiple strategies, including pharmacological treatments, and prevention through education and vaccination.

Theoretical Framework

Theory Identification and Historical Development

The theoretical framework that corresponds with the implementation of the project is the Kurt Lewin's Change Theory. Lewin was an American psychologist that believed human behavior was influenced by experiences and environment. Lewin created the change theory in 1947 while performing research for the United States Government. The theory was first proposed in his paper, “The Frontier in Group Dynamics”, and concluded that for change to be successful, the three steps of unfreezing, change and refreezing must be addressed (Lewin,

1947). The goal of the research was to explore ways to address organizational change and human resource development.

Major Tenets of Theory

Lewin's theory has three stages, unfreezing, change and refreezing (Kaminski, 2011).

Unfreezing

The unfreezing stage consists of the process of discovering an effective method that will enable people to dispose of old patterns (Kaminski, 2011). This stage seeks to find a method that allows people to dispose of old patterns (Nursing Theories, 2011). Within the unfreezing stage is the Force Field Analysis (FFA), which concludes that there are driving and restraining forces to change. The driving forces may be internal or external, and push an individual in the direction of change (Kaminski, 2011). Examples of internal driving forces include a desire to increase profitability, or a desire to improve an organization. External forces are outside of the control of the individual and may include politics, increased costs, and technology. Restraining forces, on the other hand, are forces that delay change. Restraining forces are individual perceptions, habits, and fear of the unknown (Cummings, S., Bridgman, T. Brown, K. (2016). The goal of this first stage is to demonstrate that change is necessary. This step is necessary to overcome resistance of change.

Change

Next is the change stage, which involves actively changing the individual's behaviors by implementing the change. During this stage, a new approach to problem solving is introduced. Problems with the implementation for change are identified and revised in order effectively implement change. Communication, flexibility, assessment, and follow up are crucial during this phase for the individual to learn new methods of problem solving (Kaminski, 2011).

Refreezing

The refreezing stage consists of the change becoming a habit and is the new standard. During this phase, the new method of change has been established, and implemented. The individuals involved in the implementation realize the benefits of change. Reinforcements such as support, praise, and rewards are required during this stage to increase the individual's confidence and performance. Ongoing monitoring for effectiveness also occurs in this stage, and allows individuals to learn from the process and be more apt to change in the future (NHS North West Leadership Academy, n.d).

Applicability of Theory to Current Practice

Change in healthcare is inevitable. Current nursing practice is aimed at improving patient outcomes, quality of care, and reducing unnecessary health care costs. Increased healthcare costs are associated with repeated diagnostic testing, recurrent and preventable hospitalizations, multiple prescriptions, and adverse drug interactions (Salmond & Echevarria, 2017). Studies show that common barriers to change in nursing practice include education and behavior (Wallis, 2012). An example of how Lewin's change theory is utilized in current practice is the movement from paper to electronic health records (EHR).

Unfreezing

When the movement was initially implemented, many organizations faced resistance from medical staff. Driving factors included protecting patient privacy, improving communication between hospital staff, and decreasing overall cost. Resisting factors included the staff members' lack of desire and knowledge of the need for change.

Change

Utilizing Lewin's theory of change addressed these barriers by showing staff that implementing the EHR will improve communication; therefore, improving patient outcomes, training staff appropriately, and providing support during the implementation.

Refreezing

Once the new EHR was in place, continuous support was provided to the staff to ensure that the implementation and performance remained effective.

Application of Theory to DNP Project

The implementation of an evidence-based STD treatment and prevention protocol will require change. Currently, a standardized approach to STD management does not exist in the clinic. The project lead utilized the tenets of Lewin's change theory to guide the implementation of this DNP project.

Unfreezing

Providers in the clinic were given statistical data related to the prevalence of STD rates, and the need to decrease the incidence of STD infections in the clinic. Current practice indicated there was no standard of care implemented to screen, treat, and provide prevention measures within this outpatient women's health clinic. Currently, the CDC has implemented national initiatives in the prevention of STDs (CDC, 2015). This will support the claim that change is needed. Increasing awareness on STD rates in the clinic will improve any knowledge deficits, and decrease negative, restraining forces (Kaminski, 2011). The need for practice change was identified by assessing the driving and restraining forces. Internal driving forces for the clinic include the desire to improve patient outcomes, and decrease costs associated with STD

reinfections. Restraining forces identified include individual providers' lack of knowledge related to the need for change, and providers' perception that their treatments are effective.

Change

During the change phase, the STDSPP was ill be formulated and implemented. This method included showing that each provider utilized a different approach to patient care. This was accomplished by offering statistical data for this clinic on current STD rates, rates of reinfection, and complications experienced by the patients. Introduction to the CDC guidelines was presented and compared to current practice for all the providers. Implementation of this project included educating the staff in the new protocols and monitoring the providers for adherence to the new protocol. The data collected during project evaluation in the final phase of the project implementation was shared with the providers. The expected outcome was an improvement in STD prevention and screening practices, which will indirectly reduce the spread of STDs and increase early identification of infected women. This goal was accepted as the shared vision for patient outcomes. Achieving the desired outcomes motivated the staff to continue to utilize the new STDSPP in their practice.

Refreezing

Support for the new initiative was provided by answering any questions related to the new protocol. Reinforcement was provided by the clinic owners and stakeholders who have offered their support to conduct this project and implement the new protocol. Providing support ensured adherence to the protocol and formulated new habits. Refreezing occurs when the desired goal becomes the standard of practice and an expectation of the professional role (Doolin, Quinn, Bryant, Lyons, & Kleinpell, 2009). A policy regarding this practice will ensure the protocol will be a standard of practice within this clinic.

Description of Project Design

The quality improvement project focused on improving patient outcomes by promoting early identification and standardizing treatment within the women's health clinic through the implementation of a comprehensive STDSPP. The objectives were to develop a STDSPP, educate all providers in the new STDSPP, and to evaluate the practice of early identification of STDs through post intervention chart audits. A quality improvement and non-experimental design was utilized. A non-experimental design is defined as, "the label given to a study when a researcher cannot control, manipulate, or alter the predictor variable or subjects, but instead, relies on interpretation, observations, or interactions to come to a conclusion." (Kowalczyk, 2015).

Data collection for this project involved chart audits. Providers and nursing staff, who were the population of interest at the project site, were instructed on the STDSPP, and STD screening and treatment rates. Chart audits were performed before and after the intervention. Chart audits examined quantitative data including STD testing and treatment recommendations. This data obtained determined if the development of a STDSPP, and education provided on the new STDSPP lead to early identification of STDs.

Population of Interest, Setting, Stakeholders

The population of interest was all health care providers in a low-income women's health clinic in the Brazos Valley. This clinic, which serves as the project setting, is a low-income, sliding scale fee clinic that is federally funded. It is in a small, college town in east central Texas, known as the Brazos Valley. The clinic is part of a federal network of twelve clinics that provide services in the Brazos Valley. The clinic staff included eight medical assistants, two lab technicians, one registered nurse, and ten providers, including physicians, advanced practice

nurses, and physician's assistants. Stakeholders for the proposed implementation included all medical providers, the medical director, clinic manager, and nursing administrator. The clinic hosts medical students, nursing students, and medical assistant students, therefore the stakeholders in the clinic were open to evidence-based changes that will help improve patient outcomes. Rapport was built with the stakeholders by keeping them informed during the implementation process, involving stakeholders' feedback about treatment and educational options for patients, and scheduling in-services during allotted training times.

Recruitment Methods

Permission to complete the project design was obtained through the medical director, clinic manager, and nursing administrator (Appendix A). The medical providers and nursing staff participated in the implementation of STDSPP. No direct patient interaction was required for the project. The clinic held weekly, mandatory training for all providers and nursing staff, therefore each provider was required to attend. Incentives to attend the training included providing refreshments during the in-service.

The STDSPP, which was developed through this DNP Project, helped guide care of individuals who presented with complaints of STD symptoms, patients who undergo high risk sexual activity, and patients who requested STD screening. The inclusion criteria for this protocol included adults ages 18 and above, patients with a diagnosis of chlamydia, gonorrhea, and HPV, and patients being screened for chlamydia, gonorrhea and HPV. The exclusion criterion for this protocol includes patients under the age of 18, pregnant women, breastfeeding mothers, and patients being screened for STDs other than chlamydia, gonorrhea, and HPV. During data collection, chart audits were conducted using the following billing codes:

- CPT codes associated with chlamydia screening: 86631, 86632, 87110, 87270, 87490-87492, 87801, and 87810
- CPT codes associated with gonorrhea screening: 87590-87592, 87801, 87850
- Behavioral counseling to prevent STDs CPT codes: 99401-99404
- CPT codes associated with HPV: 87620-87622

Tools/Instrumentation

Tools that were utilized for the project were the STDSPP, handouts for training, and a chart auditing tool.

Handouts

Providers were provided a handout that contained information on the CDC treatment and prevention recommendations. The handout information included pharmacological treatment recommendations, follow-up recommendations, as well as expedited partner treatment recommendations (See Appendix B). The information was derived from the CDC website, which is a reliable, evidence-based source of up to date information.

STDSPP

The STDSPP was developed by the DNP student in collaboration with the medical providers, medical director, clinic manager, and nursing administrator. The protocol was evaluated for validity through review of content experts at the project site as well as the review of the project team members.

Chart Auditing Tool

The chart audit tool was acquired from the North Carolina Division of Public Health (See Appendix C). Chart auditors at the health department are currently using the tool. This tool was approved for use by the project team. Permission to use this tool is located in Appendix D.

Educational Presentation Tool

Training was done through PowerPoint presentation (see Appendix E). Permission to use the CDC PowerPoint is located in Appendix F. The presentation included data obtained from the CDC on recommended prevention and treatment options. The presentation was reviewed for content by the PM, Project team, and key stakeholders prior to use as an educational presentation tool.

Data Collection Procedures

Data collection was completed through chart audits. A chart auditing tool was utilized. The data collected from each chart included the treatment prescribed for STDs, education provided, and is the sexual history. A total of 50 chart audits were performed pre and post implementation in order to determine if there was a change in the approach to STD prevention and treatment. Charts from three months prior to implementation, three weeks after the implementation, and again at six weeks after implementation were evaluated. Variables evaluated in the chart audit included medications prescribed for chlamydia, gonorrhea, and HPV. Another variable was the history of the patient, to include STDs, sexual history, partner history, and contraceptive use. The chart was also audited for education provided on contraceptive methods, and how to reduce the risk of STD transmission.

To provide appropriate training for the clinic staff and providers, a mandatory educational session was held. To measure if appropriate education was delivered to the staff and providers who will be delivering the protocol, attendance was taken at the training session. Omitting all identifiers protected patient confidentiality.

Intervention/Project Timeline

The project timeline was six weeks. The project implementation started at the end of DNP II. Weeks 15 and 16, at the end of DNP II, focused on recruiting staff. Week 1 included performing initial chart audits and educating the staff. In week 2, the DNP candidate provided support to the staff involved in the implementation. Additional chart audits were performed in weeks 3 through 6. The data obtained from the chart audits was analyzed in weeks 4 and 5.

Week 1	Performed chart audits prior to implementation using the chart auditing tool. Live training session: Presented the PowerPoint presentation to providers and nursing staff
Week 2	Provided support to staff by answering questions related to the implementation
Week 3	Completed chart audits 3 weeks after implementation
Week 4	Analyzed data using paired chi-square test
Week 5	Continued to analyze data
Week 6	Completed chart audits 6 weeks after implementation

Ethics/Human Subjects Protection

The IRB determination form (See Appendix G) was submitted for review to be compliant with Touro University Nevada policies. The implementation was a quality improvement project, and did require IRB review. After speaking to the medical director during DNP Project I about the proposed project, permission was verbally granted to complete the project at the project site. An IRB review is not warranted as research will not be performed. The information extracted from the patients' charts was documented on the chart audit tool. No patient names or identifying data were utilized. HIPAA compliance was followed. There was no direct contact with patients. The benefit of participation in the implementation of the STDSPP included

gaining evidence-based knowledge related to early detection and treatment of STDs. A potential risk included the unwillingness of providers to change their approaches to treatment.

Plan for Analysis/Evaluation

The nominal data obtained from the chart audits was analyzed using a chi-square test for comparison of before and after education on early detection and treatment of STDs. The chi-square test compared the data included in the chart audits three months before, and three and six weeks after the implementation of the STDSPP. The test determined if there was an increase in knowledge after education. Questions for the chi-square test included whether a sexual history was performed, were the appropriate medications prescribed, and if patient education was provided. Variables evaluated were medications prescribed for chlamydia, gonorrhea, and HPV, the sexual history of the patient, and education provided on contraceptive methods, and how to reduce the risk of STD transmission.

Feedback was received from the statistician, and changes were made accordingly.

Implications for Nursing

Currently, a standardized approach to STD prevention and treatment does not exist at the project site. The potential significance of the project results are to improve patient outcomes through evidence-based implementation. The goal of the STDSPP was to use Lewin's change theory to improve early detection and treatment of STDs. The STDSPP addressed the impact, sequela, and management of STDs. The impact and sequela of STDs included both physical and emotional factors that have negative effects on the patient. Physical factors included infertility and malignancies as a result of untreated STDs. Emotional factors included fear and distrust in partners. The management of STDs includes prevention through education and screenings, early detection, and evidence-based pharmacological treatments. The findings of the project helped

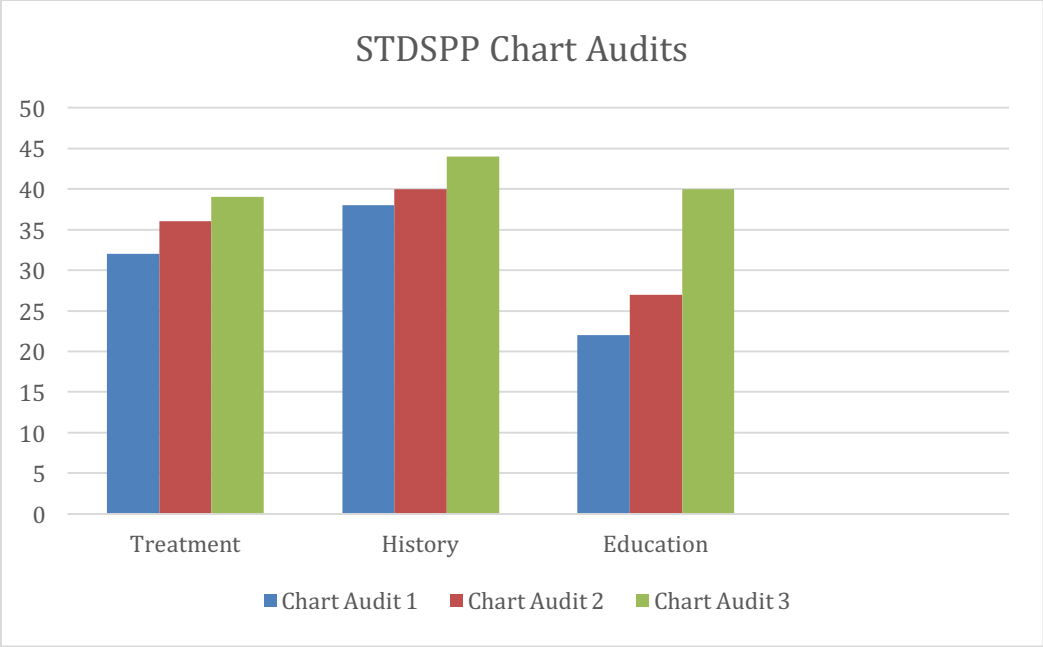
determine if implementing a comprehensive STDSPP had an impact on early detection and treatment of STDs. The chart audits determined if providers understood the education provided, and if treatments of STDs are based on the STDSPP. The project improved the impact of STDs on the physical and emotional health of patients, decreased the negative sequel associated with STDs, and improved clinical management of STDs.

Analysis

An important part of the quality improvement project was to implement a STDSPP to standardize and improve the approach to STD prevention and treatment. Pre-implementation chart audits were performed to determine what treatments for chlamydia, gonorrhea, and HPV were used, including whether a sexual history of the patient was obtained, and was patient education provided. The pre-implementation chart audits showed that 64% (32/50) of STD treatments were based on the current STD guidelines. The findings indicated that 76% (38/50) of the charts showed that a patient sexual history was obtained. In addition, the pre-implementation chart audit showed there were 44% (22/50) of the charts indicating that patient education related to STDs was provided. To determine the effectiveness of the implementation of the STDSPP, education was first provided to all providers and nurses during scheduled training time. Once training was completed, the project lead answered all questions related to STD treatment recommendations. Post implementation chart audits were conducted at three and six weeks after the educational intervention. The findings of the post-implementation chart audits at three weeks showed that 72% (36/50) of STD treatments were based on the current STD guidelines and 80% (40/50) of the charts included a patient sexual history. Lastly, the findings indicated that patient education related to STDs was provided in 54% (27/50) of the charts audited. Chart audits were conducted again at six weeks after the educational intervention. The

findings showed that 78% (39/50) of STD treatments were based on the current STD guidelines and 88% (44/50) of the charts included a patient sexual history. Lastly, the findings indicated that patient education related to STDs was provided in 80% (40/50) of the charts audited. See Image A below for a comparison of all three chart audits.

Image A- Chart Audits



A chi squared analysis was performed to determine if the null hypothesis that the implementation of the STDSPP affects STD history, treatment and education. The hypothesis prior to the implementation of the STDSPP was that the number of STD treatments that were based on CDC recommendations would increase, there would be an increase in the number of sexual histories obtained during each patient visit, and more patient education related to STDs would be provided. The p-value represents the significance of the implementation. If the p-value is greater than the significance value of 5%, then the hypothesis that implementation of the STDSPP will improve STD history, treatment, and education can be accepted. The p-value was 2% at three weeks post implementation, and 4% at six weeks post implementation. Each p-value

is below the significance value, therefore the null hypothesis was rejected. See Image B below for statistical data.

Image B- Statistical Data

AUDIT	HISTORY	TREATMENT	EDUCATION	EXPECTED
Prior to STDSPP	38	32	22	30.6666667
Three Weeks Post STDSPP	40	36	27	34.3333333
Six Weeks Post STDSPP	44	39	40	41

Prior to STDSPP P-value	0.004707781
P-value at three weeks	0.021258747
P-value at six weeks	0.039640738
Significance level	<0.05

Discussion and Significance

The results of the quality improvement project showed that there were improvements in the number of sexual histories obtained, the number of STD treatments that were based on CDC recommendations, and the number of patients that received education related to STDs. Prior to the implementation, chart audits showed that 64% of STD treatments were based on the current STD guidelines, 76% of the charts showed that a patient sexual history was obtained, and 44% of the charts indicating that patient education related to STDs was provided. At three weeks post implementation, chart audits showed that the number of STD treatments were based on the current STD guidelines increased by 12%. There was a 4% increase in the number of charts that included a patient sexual history, and patient education was increased by 10% of the. From three to six weeks post implementation, the percentages increased by 6%, 8%, and 26% respectively.

Based on the statistics, the improvements were not clinically significant. This may have possibly been due to the small sample size. According to Faber and Fonseca 2014, sample sizes that are too small may prevent the findings from being extrapolated. A small sample size increases the margin of error.

The overall goals of the project were to develop and implement an evidence-based STDSPP to promote early identification and standardize STD treatment, and potentially reduce the STD rates for Brazos County. The STDSPP was developed using CDC guidelines for STD treatment and prevention. Prior to implementation, a standardized approach to STD treatment did not exist. According to research, standardizing care ensures patient safety by providing care based on best practices, and improves patient outcomes (Hanscom, 2018). The project results were in alignment with the expected findings of the research because STD treatment was based more on evidence based practice guidelines provided by the CDC. Although the null hypothesis was rejected, the numbers showed improvements in STD education, treatments based on evidence, and the number of sexual histories obtained.

Overall, the project was significant for nursing and implications future nursing practice. The project identified the need for an evidence-based, standardized approach to patient care. The project also demonstrated the importance of frequent education for health care staff. Many of the providers were treating STDs based on clinical experience instead of evidence based practice. The results showed that the implementation increased the use of STD treatment based on CDC guidelines within the clinic. The most significant change was evident in the increase in the number patients that received STD education. Prior to implementation of the STDSPP, only 44% of the patients received STD education. Six weeks after implementation, 80% of patients received STD education. This data suggested that the protocol may improve the prevention of

STDs and improve patient outcomes. Providing patient education is a simple, reasonable, cost effective adjustment that can be applied to patient care.

Limitations and Dissemination

During the quality improvement project, there were a few limitations and barriers met. The largest concern for administration was the total costs of the implementation of the STDSPP. The clinic is federally funded, therefore the budget for changes in resources made in the clinic low. The implementation was initiated once the costs associated with the protocol were identified. Another barrier was the willingness of providers to modify current practices for STD treatment and prevention. About half of the providers have been in practice for over ten years. Initially, it appeared as if the providers were hesitant about the STDSPP. There were numerous questions about what resources were utilized to develop the protocol. Once the providers were assured that the proposed changes were based on CDC recommendations, the resistance decreased.

A limitation to the implementation was the time of year. During the holiday season, the census is lower, and staff are taking vacation time off. This made it somewhat difficult to complete enough chart audits, and coordinate training with staff. Another limitation was the sample size of fifty charts. A larger sample size would have provided the opportunity to obtain data that was less skewed. Finally, time was a limitation. The time line of the project was six weeks. A longer time period would have allowed more time to obtain more data, as well as increase the sample size.

The goal of the project was for the STDSPP to be implemented into practice at the project site, and each of the sister clinics. Administration approved for the STDPP to be applied to practice for three months. After three months, the data will be reevaluated to determine if the

protocol will be permanently implemented into practice. The STDSPP will be permanently implemented at the sister sites if the data supports an improvement in the prevention of STDs and patient outcomes. The administrators for each clinic formally meet quarterly, and a short poster presentation was done. The poster included the advantages of the protocol, and data results obtained from the study. The completed project will also be submitted on https://www.doctorsofnursingpractice.org. The project lead does not plan on submitting the project to any publication sources or future conferences.

References

American Sexual Health Association. (2017). Women and STIs. Retrieved from http://www.ashasexualhealth.org/sexual-health/womens-health/women-and-stis/

Centers for Disease Control and Prevention. (2011). 10 different ways STDs impact women differently from men. Retrieved from https://www.cdc.gov/std/health-disparities/stds-women-042011.pdf

Centers for Disease Control and Prevention. (2016). *College health and safety*. Retrieved from https://www.cdc.gov/family/college/index.htm

Centers for Disease Control and Prevention. (2012). Evaluation toolkit: Patient and provider perspectives about routine HIV screening in health care settings. Retrieved from http://www.cdc.gov/hiv/topics/testing/ healthcare/index.htm.

Centers for Disease Control and Prevention. (2015). Screening recommendations and considerations referenced in treatment guidelines and original sources. Retrieved from https://www.cdc.gov/std/tg2015/screening-recommendations.htm

Centers for Disease Control and Prevention. (2017). Sexually transmitted disease surveillance 2016. Retrieved from https://www.cdc.gov/std/stats16/CDC_2016_STDS_Report-for508WebSep21_2017_1644.pdf

Centers for Disease Control and Prevention. (2016). The lowdown on how to prevent STDs. Retrieved from https://www.cdc.gov/std/prevention/lowdown/lowdown-text-only.htm

Chiou, W., Chen, C., Lee, M., Lin, H., et al. (2016). Pelvic inflammatory disease increases the risk of a second primary malignancy in patients with cervical cancer treated by surgery alone. *Medicine, 95(47),* e5409.

Crockard, M. (2016). Increasing evidence supports the need for multiplex testing of sexually transmitted infections. *MLO: Medical Laboratory Observer*, *48*(3), 20

Cummings, S., Bridgman, T. Brown, K. (2016). Unfreezing change as three steps: Rethinking Kurt Lewin's legacy for change management. *Human Relations*, 69(1), 33-60.

Data USA: Brazos County. (2015). Retrieved from https://datausa.io/profile/geo/brazos-county-tx/#category_age

Doolin, C., Quinn, L., Bryant, L., Lyons, A., & Kleinpell, R. (2009). Family presence during cardiopulmonary resuscitation: Using evidence-based knowledge to guide the advanced practice nurse in developing formal policy and practice guidelines

Faber, J., & Fonseca, L. M. (2014). How sample size influences research outcomes. *Dental press journal of orthodontics*, *19*(4), 27-9.

Haapa, T., Suominen, T., Paavilainen, E. (2017). Experiences of living with a sexually transmitted disease: and integrative review. *Scandinavian Journal of Caring Science*. DOI: 10.1111/scs.12549

Hanscom, R. (2018). Variation in healthcare delivery: the need for standardization. Retrieved from https://www.beckershospitalreview.com/healthcare-information-technology/variation-in-healthcare-delivery-the-need-for-standardization.html

HealthyPeople.gov. Sexually transmitted diseases. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/sexually-transmitted-diseases

Hoover, K. W., Parsell, B. W., Leichliter, J. S., Habel, M. A., Tao, G., Pearson, W. S., & Gift, T. L. (2015). Continuing Need for Sexually Transmitted Disease Clinics After the

Affordable Care Act. *American Journal Of Public Health*, *105 Suppl 5*S690-S695. doi:10.2105/AJPH.2015.302839

Kaminski, J. (2011). Theory applied to informatics – Lewin's Change Theory. *CJNI: Canadian Journal of Nursing Informatics, 6* (1), Editorial. http://cjni.net/journal/?p=1210

Kreisel, K., Torrone, E., Bernstein, K., Hong, J., & Gorwitz, R. (2017). Prevalence of Pelvic Inflammatory Disease in Sexually Experienced Women of Reproductive Age - United States, 2013-2014. *MMWR: Morbidity & Mortality Weekly Report*, *66*(3), 80-83. doi:10.15585/mmwr.mm6603a3

Kowalczyk, D. (2015). Non-experimental and experimental research. Retrieved from http://study.com/academy/lesson/non-experimental-and-experimental-research-differences-advantages-disadvantages.html

Lewin, Kurt. (1947). Frontiers in Group Dynamics. *Sage Journals*. Retrieved from http://journals.sagepub.com/doi/abs/10.1177/001872674700100103

MOSADEGHRAD, A. M. (2014). Factors Affecting Medical Service Quality. *Iranian Journal of Public Health*, *43*(2), 210–220.

NHS North West Leadership Academy. (n.d). Lewin's change management model; Understanding the three stages of change. Retrieved from http://www.nwacademy.nhs.uk/sites/default/files/86_1722011_lewin_s_change_management_model.pdf

Nursing Theories. (2011). Change theory Kurt Lewin. Retrieved from http://www.nursing-theory.org/theories-and-models/Lewin-Change-Theory.php

O'Sullivan, L. F., Udell, W., Montrose, V. A., Antoniello, P., & Hoffman, S. (2010). A

Cognitive Analysis of College Students' Explanations for Engaging in Unprotected Sexual Intercourse. *Archives of Sexual Behavior*, *39*(5), 1121–1131. http://doi.org/10.1007/s10508-009-9493-7

Prevalence of STD Testing Is Low Among U.S. Adolescents, Young Adults. (2016). *Perspectives On Sexual and Reproductive Health*, *48*(3), 157. doi:10.1363/48e11016

Rietmeijer, K., Marx, G. (2017). Prevention of sexually transmitted infections. *UpToDate*. Retrieved from https://www-uptodate-com.lb-proxy2.touro.edu/contents/prevention-of-sexually-transmitted-infections?source=search_result&search=impact%20of%20sexually%20transmitted%20diseases&selectedTitle=1~150#H51

Ross, J. (2016). Pelvic inflammatory disease: Pathogenesis, microbiology, and risk factors. *UpToDate*. Retrieved from https://www-uptodate-com.lb-proxy2.touro.edu/contents/pelvic-inflammatory-disease-pathogenesis-microbiology-and-risk-factors?search=Pelvic%20inflammatory%20disease:%20Pathogenesis,%20microbiology,%20and%20risk%20factors&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1

Salmond, S. W., & Echevarria, M. (2017). Healthcare Transformation and Changing Roles for Nursing. *Orthopedic Nursing*, *36*(1), 12–25.

Spielberg, F., Levy, V., Lensing, S., Chattopadhyay, I., Venkatasubramanian, L., Acevedo, N., & ... Gaydos, C. A. (2014). Fully integrated e-services for prevention, diagnosis, and treatment of sexually transmitted infections: results of a 4-county study in

California. *American Journal Of Public Health*, *104*(12), 2313-2320. doi:10.2105/AJPH.2014.302302

The World Health Organization. (2016). Global health sector strategy on sexually transmitted infections 2016–2021 towards ending STIs. Retrieved from http://apps.who.int/iris/bitstream/10665/246296/1/WHO-RHR-16.09-eng.pdf

Texas Health and Human Services. (2016). Texas STD surveillance report 2016. Retrieved from https://www.dshs.texas.gov/hivstd/reports/

US Department of Health and Human Services. (2016). HHS FY 2017 Budget in Brief – CDC. Retrieved from https://www.hhs.gov/about/budget/fy2017/budget-in-brief/cdc/index.html

United States Census Bureau. (2016). Quick facts Brazos County. Retrieved from https://www.census.gov/quickfacts/fact/table/brazoscountytexas/PST045216

Wallis, L. (2012). Barriers to implementing evidence-based practice remain high for U.S. nurses. *The American Journal of Nursing*, 112(12), 15.

Workowski, K. A., & Bolan, G. A. (2015). Sexually transmitted diseases treatment guidelines, 2015. *MMWR. Recommendations and Reports: Morbidity And Mortality Weekly Report. Recommendations and Reports*, *64*(RR-03), 1-137.

Appendix A

Permission granted by administration.

Appendix B

Sexually Transmitted Disease Treatment and Prevention Protocol

Purpose: To improve early detection and treatment of STDS through a standardized care approach.

Objectives:

1. Identification of asymptomatically infected persons and persons with symptoms associated with STDs;
2. Effective diagnosis, treatment, counseling, and follow up of infected persons; and
3. Evaluation, treatment, and counseling of sex partners of persons who are infected with an STD.

Indications:

1. Screening will be performed on sexually active women under 25 years of age
2. Screening will be performed on sexually active women aged 25 years and older if at increased risk (Having anal, vaginal, or oral sex without a condom; Having multiple sex partners; Having anonymous sex partners; Having sex while under the influence of drugs or alcohol can lower inhibitions and result in **greater** sexual **risk**-taking).
3. Screening will be performed on young men in high prevalence clinical settings or in populations with high burden of infection (Men Who Have Sex With. Men)
4.

Contraindications:

1. No cervical cancer screening for HPV:
   - Women younger than age 21.
   - Past age 65 if adequate prior screening can be assessed accurately (three consecutive negative cytology results or two consecutive negative HPV results within 10 years before screening cessation, with the most recent test occurring within 5 years) and not otherwise at high risk for cervical cancer.
   - The cervix was removed for a benign reason.

- A prior diagnosis of a high-grade precancerous cervical lesion or cervical cancer,
- With *in utero* exposure to diethylstilbestrol, or
- Patients who are immunocompromised

Steps for HPV screening and treatment:

1. Perform screening on women 21-29 years of age every 3 years with cytology through Papanicolaou and;
2. Women 30-65 years of age every 3 years with cytology, or every 5 years with a combination of cytology and HPV testing through Papanicolaou.
3. Treatment is directed to the macroscopic (genital warts) or pathologic precancerous lesions caused by HPV

Steps for chlamydia and gonorrhea screening and treatment:

1. For males, urine is the preferred specimen type when using nucleic acid amplification tests (NAATs) for screening.
2. For women self-collected vaginal swabs are the specimen of choice for NAAT. They are as sensitive and specific as cervical swabs. Urine is acceptable, but may have reduced performance compared to genital swabs
3. Chlamydia and gonorrhea treatment should be provided promptly for all persons testing positive for infection
4. Single-dose therapy should be considered for patients who raise adherence concerns
5. For multi-dose regimens, the first dose should be dispensed on site and directly observed.
6. To minimize disease transmission to sex partners, persons treated for chlamydia should be instructed to abstain from sexual intercourse for 7 days after single-dose therapy or until completion of a 7-day regimen and resolution of symptoms if present.
7. To minimize risk for reinfection, patients also should be instructed to abstain from sexual intercourse until all of their sex partners are treated. Persons who receive a diagnosis of chlamydia should be tested gonorrhea
8. Test of cure only recommended if symptoms persist, or reinfection is suspected.
9. Expedited partner treatment is recommended

CDC Treatment Guidelines for Chlamydia

Recommended Regimens

- **Azithromycin** 1 g orally in a single dose
  OR
- **Doxycycline** 100 mg orally twice a day for 7 days

Alternative Regimens

- **Erythromycin** base 500 mg orally four times a day for 7 days
  OR
- **Erythromycin** ethylsuccinate 800 mg orally four times a day for 7 days
  OR
- **Levofloxacin** 500 mg orally once daily for 7 days
  OR
- **Ofloxacin** 300 mg orally twice a day for 7 day
- **Expedited Partner Therapy**

CDC Treatment Guidelines for Gonorrhea

- **Ceftriaxone** 250 mg IM in a single dose
  PLUS
- **Azithromycin** 1g orally in a single dose

If ceftriaxone is not available:

- **Cefixime** 400 mg orally in a single dose
  PLUS
- **Azithromycin** 1 g orally in a single dose
- **Expedited Partner Therapy**

CDC Treatment Guidelines for HPV

- Treatment is directed to the macroscopic or pathologic precancerous lesions
- Specific antiviral therapy is not recommended to eradicate HPV infection
- Women aged 21–24 years are managed more conservatively than other women because of potential harms of overtreatment and low risk for cancer. For women in this age group who have ASC-US or LSIL, cytology should be repeated in 12 months.
- For women with ASC-US cytology, either cytology can be repeated in 12 months (for women of all ages) or reflex HPV testing can be performed (for women aged ≥25 years).
- For women with ASC-US who are HPV negative, a repeat HPV and Pap test in 3 years is recommended.
- For women who have normal cytology but lack endocervical cells, a repeat Pap is not required. For women who have unsatisfactory cytology, regardless of negative HPV result, a repeat cytology is required in 2–4 months.
- HPV 16/18 testing is one follow-up option for women who have discordant results (normal Pap test accompanied by a positive HPV test). If the HPV 16/18 test is positive, women should immediately receive colposcopy. If negative, these women should repeat the HPV co-test in 1 year

- For women with LSIL or HSIL, management should be provided by a specialist according to existing guidelines

References

Centers for Disease Control and Prevention. (2015). HPV-Associated Cancers and Precancers. Retrieved from https://www.cdc.gov/std/tg2015/hpv-cancer.htm#cancer-screening

Centers for Disease Control and Prevention. (2015). Chlamydial Infections. Retrieved from https://www.cdc.gov/std/tg2015/chlamydia.htm

Centers for Disease Control and Prevention. (2015). Gonococcal Infections. Retrieved from https://www.cdc.gov/std/tg2015/gonorrhea.htm

Appendix C

Revised Chart Audit Tool

Date: _____

	Patient Identifier									
Treatment	1	2	3	4	5	6	7	8	9	10
Gonorrhea treatment based on CDC Guidelines										
Chlamydia treatment based on CDC Guidelines HPV treatment based on CDC Guidelines										
Record Compliant?										

History	1	2	3	4	5	6	7	8	9	10
Partner history (i.e., injectable drug use, multiple partners, risk history for STDs and HIV, bisexuality, etc.)										
Contraceptive use past/present (including adverse effects)										
Unprotected intercourse in past 5 days										
Sexual History- risk assessment questionnaire										
Sexually transmitted diseases including HBV & HCV if indicated										
HIV										
Record Compliant?										

Client Education and Counseling	1	2	3	4	5	6	7	8	9	10
Use specific methods of contraception and identify adverse effects										
Reduce risk of transmission of STDs and HIV (based on sexual risk assessment)										
Patients must be told that services are confidential										
Record Compliant?										

Reference

NC Department of Health and Human Services/Division of Public Health Family Planning and Reproductive Health Unit Program Review Tool: Record Audit/Female tool FY 2017-18. Retrieved from http://whb.ncpublichealth.com/agreementAddenda/18AA/FPRHU-FY2017-18RecordAudit-FemaleToolFinal.doc

Appendix D

"The State of North Carolina grants permission to copy and distribute non-image files"

Reference

NC Department of Health and Human Services/Division of Public Health Family Planning and Reproductive Health Unit Program Review Tool: Record Audit/Female tool FY 2017-18. Retrieved from http://whb.ncpublichealth.com/agreementAddenda/18AA/FPRHU-FY2017-18RecordAudit-FemaleToolFinal.doc

Appendix E

PowerPoint presentation link

https://www.cdc.gov/std/training/std101/presentations-2014/STD-101-Common-Clinicians-2014.pdf

Appendix F

"These materials may be customized for conferences or group discussions and presentations. Topics include STD clinical and behavioral information, HIV/STD inter-relationship, STD epidemiology, and STD prevention program information.

Potential users may include, but are not limited to, community-based organizations, public health departments, schools of public health, health educators, primary care providers, and Disease Intervention Specialists (DIS)."

Reference:
CDC. (2015). STD 101 in a box-ready to use presentations. Retrieved from https://www.cdc.gov/std/training/std101/home.htm